

**AGRICULTURAL EXTENSION AND ADVISORY SERVICES IN ALGERIA AT
CROSSROADS: PRESSING PROBLEMS AND INNOVATIVE SOLUTIONS**

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Abstract

Algerian farmers mostly use their own knowledge as they lack access to advisory services. Sixty-five percent of farm managers are illiterate and only 2.7% have an agricultural diploma, thus agricultural extension services play an important role in agricultural and rural development. The paper aims at analysing agricultural extension in Algeria providing a qualitative and quantitative assessment of agricultural extension services performance. The paper describes national extension strategies and action plans, analyses used participatory extension approaches and methods and explores linkages among training, research and extension components of the agricultural knowledge and information system. Secondary and primary data were used and a survey was carried out in April-June 2012 with 17 farmers in different Provinces (*e.g.* A n Defla, Batna, Chlef, Djelfa, El Oued, Gharda a, Skikda, Tiaret, Tipasa). A SWOT analysis of the agricultural sector was performed. Most of the interviewed farmers consider information and advice provided by public extension agents very useful. Nevertheless, producers rely also on other information sources such as other farmers and the private sector. The lack of an enabling institutional, legal and political environment - especially the lack of a national extension strategy - is an important gap. Collaboration between researchers and extension agents as well as the involvement of farmers in the development, validation and dissemination of technical and social innovations is highly recommended. Information dissemination and communication based on the interaction between formal and informal networks may be interesting in the current context to meet farmers' needs.

Keywords: Agricultural extension, Institutional and political environment, Algeria

Introduction

In Algeria, the utilised agricultural area (UAA) is about 8.458 million ha, representing 20.8% of the total agricultural area (TAA) and only 3.54% of the total land area (TLA). There is a total of 1,023,799 farms. Small farms (0.1 to 10 ha) account for 70%, covering 25.4% of the UAA (MADR, 2008).

Today, agriculture employs about 26% of the total population and accounts for 8.6% of the gross domestic product (GDP). The low productivity makes food import necessary, only 25% of food needs are met by domestic production (Belabas, 2010). The agricultural trade balance deficit is regular. Nevertheless, efforts are undertaken to improve the agricultural sector performance. The main crops are cereals, including wheat and barley. Other important agricultural products include potatoes, grapes, citrus, olives and dates (Medagri, 2006). In general, crop productivity is weak compared with neighbouring Morocco, whereas the yield is

at least double overseas. Other major problems are related to agro-food products quality (Bedrani, 2002).

Several factors have hampered development in Algeria, including land ownership constraints, lack of investment, insufficient access to input, reduced water availability, low levels of education and agricultural training, lack of extension services support, marketing channel constraints and bureaucracy (Laoubi and Yamao, 2012).

In terms of training, 65% of farm managers are not educated, 1% have a high level of education and only 2.7% have an agricultural training. Almost a third (32.6%) of farm managers under 40 are uneducated; this rate is much higher among heads of holdings aged over 60 (Rebouha, 2005).

Agricultural extension and advisory services play an important role in agricultural development and can contribute to improving the welfare of farmers and other people living in rural areas (International Initiative for Impact Evaluation, 2010). Agricultural information is a determinant of farmers' adoption of new farming practice and agricultural technology, and thus, achieving agricultural development goal (Laoubi *et al.*, 2010).

One can simply say that “*extension is getting knowledge to farmers so that they will make a positive change*” (USAID, 2012). Advisory service is commonly used as an alternate term for extension services. Apart from their conventional function of providing knowledge and technology to improve agricultural productivity, agricultural advisory services are also expected to link farmers to markets, promote sustainable production techniques, etc. (Swanson and Rajalahti, 2010). Good extension is recognized as a key to agricultural development. For extension to be successful, it needs to include credible content, effective delivery and be relevant to and applicable by clients (USAID, 2012).

Multifunctionality in agriculture and rural economy diversification are changing dramatically the classical crop production-centred mission of agricultural extension and advisory services (World Bank, 2008). Farmers in Algeria have a number of information and support needs to enable them to operate in competitive environments that exceed the traditional requirements for agricultural technologies. These new needs pose new challenges for both research and extension services (IFPRI, 2012).

The main objective of the present paper is to analyse Algerian agricultural extension system setup, governance and performance.

Material and methods

Secondary information from different sources (*e.g.* IFPRI, GFRAS, MARD) as well as primary data were used. A SWOT analysis of the agricultural extension sector was performed. A field survey was carried out in April-June 2012 with 17 farmers dealing with crop production (tomato, citrus, pome fruit, potato, cereals, corn, garlic, etc.) and animal husbandry (*e.g.* camels). The survey was carried out in collaboration with the staff of the Ministry of Agriculture and Rural Development (MADR) especially the Directorate of Agricultural Services (DSA). The visited areas are located in different regions and provinces (Wilayas) of the country: coastal region (Tipaza, Chlef, Ain Defla), central region (Djelfa, Khemis Miliana), eastern region (Batna), western region (Tiaret and Mostaganem), south-eastern region (Skikda) and southern region (El Oued, Ghardaia).

The fieldwork was designed to allow the collection of information on planning and management of local extension activities; the system of agricultural knowledge and new information and communication technologies used in current extension activities; methods and effectiveness of extension applied; and the level of satisfaction of farmers of the extension system. In this context, a checklist was prepared to collect basic data on the profile of farmers and their farms and their views about the extension system.

Results and discussion

According to Benfrid (1997), agricultural extension in Algeria is often reduced to the decomposition of the technical package, a set of topics to raise the awareness of the farmer. Farmer are considered as passive receptors.

In Algeria, since 1985, several actions and measures have been undertaken regarding agricultural extension. A ministerial Circular No. 1065 of 31/12/1985 has set up an extension system and organizational structure integrating all stakeholders. The executive Decree No. 95-99 of April 1st 1995 established a National Institute for Extension (INVA). The decree No. 96-97 of April 13 1996 provided status recognition for extension agents and as consequence devoted the extension as an important function in agricultural development (Laoubi *et al.*, 2010).

The Worldwide Extension Study (WWES) responses - received from each of Algeria's 27 district offices of the MADR – showed that Algeria has a total of 834 public extension staff of which 722 are field-level extension staff. About 82% of the field-level extension workers are male, with 65% of them holding a 2-3 year agricultural diploma. Most of the women extension workers are field-level (130 women staff) with 46% of them having a MSc/agricultural engineer degree (IFPRI, 2012).

The MADR delegates extension to the Directorate of Agricultural Services. Within the institutional framework for extension the primary responsibility for program planning falls at the local and national levels and the primary linkages are agricultural schools and input supply firms. Farmer organizations have a role in helping set extension priorities and promoting farmer-to-farmer extension activities (IFPRI, 2012).

The extension system is linked to the economic, social and cultural context in which it operates and that affects the quality and effectiveness of its actions. The current organization of the extension system in Algeria is reported in table 1.

Table 1. Organization of the agricultural extension system

| Stakeholder's functions | Main stakeholders |
|---------------------------------|--|
| Administrative | Ministry of Agriculture (Sub-directorate of Extension, central technical departments); extension committees of provinces (<i>i.e.</i> Wilayas); offices of education and extension (Directorates of agricultural services); Section of agriculture of communal agricultural delegations |
| Technical and scientific | National Institutes (02) of agricultural and forestry research (INRA and INRF); Specialized/sectoral technical institutes (07); institutes for plant protection (01) and animal medicine (01); High commissions for steppe (01) and Sahara zones development (01) |
| Technical and logistics | National and Regional Offices; Cooperative Service; Union of Cooperatives; National Fund of Agriculture; Bank for Rural Development; inter-professional councils; economic enterprises and services; management and participation companies (SGP) |
| Methodological support | INVA; agricultural training institutes; Coordination Committee of CCRAFAT (Agriculture and Forestry Research and Technical Assistance) |
| Agricultural profession | National Chamber of Agriculture and chambers of wilayas (47); agricultural professional associations and NGOs; Agricultural Syndicate (National Union of Algerian Peasants) |
| Support structures | Mass Media (Radio, TV and newspapers) |

The primary extension activity is educational and advisory and the principal institutions are agricultural schools (IFPRI, 2012). The Global Forum for Rural Advisory Services (GFRAS), in its Directory of Extension Providers, identifies 13 public extension providers in Algeria (GFRAS, 2013). The main institutes and research centres that have a stake in agricultural extension in Algeria are (Korichi, 2010): National Institute of Agronomical Research of

Algeria (INRAA); Technical Institute of Field Crops (cereals/forages) (ITGC); Technical Institute of Industrial Crops and Gardening (ITCMI); National Centre of Control and seeds and seedlings Certification (CNCC); National Institute of Plant Protection (INPV); Technical Institute of Livestock (ITELV); National Institute of Orchards and Vineyards (ITAFV); National Institute of Soil, Irrigation and Drainage (INSID); National Institute of Forest Research (INRF); National Centre of Artificial Insemination and Genetic Breeding (CNIAAG). The High Commissariat for the Steppe Development (HCDS) and Commissariat for the agricultural Development of Saharan Regions (CDARS) are active in marginal and less favoured areas (Korichi, 2010). Small-scale subsistence farmers and large commercial farmers are the clientele most targeted by extension activities (IFPRI, 2012).

However, a crucial role in the agricultural extension system is played by the National Institute of Agricultural Extension (INVA). Its missions are (Korichi, 2010): studies and investigations (systems, approaches and extension methodology; communication channels, means and techniques); technical support activities (coordination and facilitation mechanisms; development of extension campaigns and programs; monitoring and evaluation of extension activities; development and evaluation of training programs and capacity building cycles); and production and dissemination of extension materials.

National agricultural extension services through their regional stations located in all the provinces (*i.e.* Wilayas) of the country implement various extension activities for farmers on different topics according to crop and livestock species that characterize each region. Extension at province level (*e.g.* Blida) is ensured by the collaboration of various agricultural institutions, such as DSA, agricultural subdivision, chamber of agriculture, and technical institutes (Laoubi *et al.*, 2010).

The extension strategy and operational plan for the five-year period (2010-2014) focuses on participatory planning, intensive training of extension workers, development of multi-media materials, and processes for managing, monitoring and evaluating actions. These activities are intended to be applied by extension staff to support the policies, strategies and priority programs of agricultural and rural development.

The primary extension method is through demos, workshops and field days followed by farmer field visits. Radio programs are the main means of ICT (IFPRI, 2012). The Ministry of Agriculture has added a network of demonstration units preferentially located at farmer level and in the 69 stations of the centres and institutions disseminated in Algeria. Agricultural information and dissemination methods in place are numerous (Korichi, 2010): traditional ones, using the support of papers/newsletters, scientific/technical and extension meetings, conferences and workshops; and some are using the ICTs, such as websites (www.inraa.dz, www.dgrsd-dz.org, www.anvredet.org.dz).

The analysis of the results of the survey provides several insights on the performance of the agricultural extension system in Algeria. Farmers often live in total isolation from the institutions of the state in terms of agricultural finance, activities and projects. More than a half of the farmers strongly affirm that the information made available by the extension services is a way of knowing other agricultural techniques, which confers the extension work a more innovation-oriented than a problem-solving feature. Just over 10% of farmers said that the information available to them is unnecessary. Data from this survey highlight the importance given to information exchange in the farming community. There is a system of sharing agricultural knowledge from different sources: other farmers, extension agents, private sector companies, etc.

Even though, it can be noticed the importance of informal information networks, about a third of the farmers relies on extension agents and a quarter relies on private companies as a means of access to knowledge.

If we refine the analysis of information transfer by technical institutes and main areas of activity, we realize that information on field crops is ranked at the top with an average of 42.7% (41% for cereals and 44.4% for fodder). By cons, less than a third of farmers reported having been informed in the areas of arboriculture, horticulture and livestock.

Farmers are still using their own knowledge, or advised by unqualified persons as agricultural inputs sellers or some state employees who are not educated enough. Even efforts made by several technical institutions are not sufficient because of the complexity of problems and the ineffectiveness of their extension methods, which are of top-down nature. Farmers need to be assisted by extension organisms or individuals who know their real difficulties and know their practical situations to overcome their problems. Extension services have to be effective and sustainable. Improving the capacity of individual and collective producers allows short-term facilitation, a better match between technical solutions and the constraints faced by the farmers, and in the long term, fostering their constant search for innovation.

The very high percentage of uneducated heads of farms in Algeria affects negatively the effectiveness of the national extension system. However, the SWOT analysis prepared with rural people and farmers (Table 2), shows that we can be optimistic because of the emergence of a new generation of well-educated farmers who are very motivated to improve and modernise their activities. The most important gaps are still the lack of regulations, rules and a national strategy regulating extension domain. The state has also to increase the number of extension agents to meet the whole farmers' needs in terms of information and advice.

Table 2. SWOT analysis of agricultural extension system.

| <u>Strengths</u> | <u>Weaknesses</u> |
|--|--|
| <ul style="list-style-type: none"> • Support of farmers by professional organizations and institutions • Establishment of a training program to young farmers • Emergence of modern farms very interested in extension programs and training • A new generation of young farmers, motivated and innovative | <ul style="list-style-type: none"> • Weak affiliation of farmers to professional associations and unions • Lack of a communication policy • Mismatching between the information needs of farmers and supply • Difficult access to agricultural information and knowledge • Aging of farm managers • Qualified staff is insufficient and unevenly distributed • Lack of financial and material resources • Lack of tools for information retrieval • Very low number of extension materials circulated • Slowness of responses to information requests from farmers |
| <u>Opportunities</u> | <u>Threats</u> |
| <ul style="list-style-type: none"> • High motivation of new and young farmers to improve their knowledge • High number of underexploited agricultural extension and research infrastructures (ITMA, CFPA...) • highly qualified human resources (agronomists, biologists...) to implement extension projects | <ul style="list-style-type: none"> • Lack of regulation and rules for extension • Practical problems hampering agriculture and rural development • Lack of effective extension linkages between the agricultural sector and research • Loss of trust between rural stakeholders and advisory bodies |

Conclusion

Algeria is willing to support farmers, faced with a very complex situation. It developed an important support system including measures to promote professional organizations and institutions and to support agricultural production. However, farmers do not have the feeling of being supported by them effectively. The extension system is ill-performing and focused on crop production especially field crops (cereals).

The use of modern means of communication can diversify the sources of information of the farmer and ensure better coordination between the actors involved in agricultural production. It also allows proposing an information offer diversified and adapted to the different categories of farmers. New approaches to ICT for agricultural development and natural resource management exist to overcome extension challenges and new concepts are emerging for participation, learning and problem solving between the key players.

Today, Algerian farmers are increasingly asked to respond to the challenges facing them. The profound changes occurring in the agricultural environment also require them to have more knowledge in agronomy and related sciences, management, accounting, marketing. The availability of extension agents and the ability to exchange and validate new techniques and/or productions to introduce at the farm level by researchers and specialists, are highly desired.

Due of its status, the national system of agricultural extension led by INVA could probably be an answer to the needs of pooling local resources and opening to international networks. This is related to the need to restructure the system, from the organizational and functional points of view, and to strengthen its human resources by mobilizing sectoral competences and external resources. Analysis of informational needs of farmers should constitute the basis for building the extension offer.

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