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The effective agricultural extension approach

ABSTRACT

This paper is a review article. It presents the definition of extension approach and reviews various types of extension approaches defined by researchers. The paper describes these extension approaches. It presents attributes of the effective agricultural extension approach and determines qualities and necessary conditions for this approach. It also reviews different methodologies used to measuring the effectiveness of agricultural extension approaches and determines determinants of the effectiveness measurement of extension approaches. Finally, the paper presents the application of extension approaches in Egypt.

Keywords: Attributes of effective extension approach, effectiveness measurement determinants, Egypt, qualities and conditions, types of extension approaches

1. INTRODUCTION

Many extension approaches have been defined by researchers. Advantages and disadvantages of these approaches were clarified and comparisons between different approaches were made. These approaches have been adopted in different countries of the world and the effectiveness of some approaches was measured. The present paper reviews the definition of extension approach and the types of extension approaches defined by researchers. It presents previous research studies on the effectiveness of some extension approaches and methods. The paper describes attributes of the effective extension approach and determines qualities and necessary conditions for this approach. It presents different methodologies used to measuring the effectiveness of some extension approaches. The paper determines determinants of effectiveness and presents the application of extension approaches in Egypt.

2. DEFINITION OF EXTENSION APPROACH

The approach is defined by Axinn [1], as the style of action within system. It's like the drummer which sets the pace for all activity of the system. Hagemann *et al.*, [2] explained an approach as a way in which different guiding principles are applied in a specific situation to fulfill different purposes. It consists of a series of procedures for planning, organizing and managing the extension institution as well as for implementing practical extension work by staff with technical and methodological qualification and using the necessary and appropriately adapted means. The approach is like a doctrine for the system, which informs, stimulates and guides such aspects of the system as its structure, its leadership, its program, its resources and its linkages [3].

3. TYPES OF EXTENSION APPROACHES

42 Various approaches have been defined by researchers for agricultural extension. Axinn [1]
43 defined eight approaches. These are: General approach, Commodity specialized approach,
44 Training and Visit approach, Participatory approach, Project approach, Farming system
45 approach, Cost-sharing approach, and Educational institution approach. Many other
46 approaches were defined by other researchers.

47

48 Nagel [4] classified different alternatives to organizing extension demand choices on various
49 levels: public versus private, government versus nongovernment, top-down (bureaucratic)
50 versus bottom-up (participatory), profit versus nonprofit, free versus cost-recovery, general
51 versus sector, multipurpose versus single purpose, and technology driven versus need
52 oriented. Nagel also described in details two groups of extension approaches. These are
53 general clientele approaches and extension to selected clientele approaches.

54

55 The World Bank distinguished between profit oriented and public extension service. It also
56 distinguished between multipurpose and specialized extension services [5]. Swanson and
57 Rajalati [6] described different extension approaches and models under four main
58 categories. These are: technology transfer extension models, participatory extension
59 approaches and market – oriented extension approaches and non-formal
60 education/extension approach. Davis [7] described a typology for types of extension which
61 included the basic form of public-top down or government driven, participatory or demand
62 driven, and private or supply driven.

63

64 As stated by Kaur and Kaur [3] that agricultural extension is done mainly by public sector,
65 private sector, and public-private partnership. The public sector is normally conducted by
66 agricultural ministries, universities, and other governmental agencies. The private extension
67 is offered by various private agencies, and clients are expected to pay for the service.
68 Public-private partnership describes a service which is funded and operated through a
69 partnership of the government and one or more private sector. Since farmers are the main
70 beneficiaries, they pay the cost of the service.

71

72 Kaur and Kaur [3] described some other extension approaches which depend on individual
73 and group communication methods such as farmer interest group, successful groups, farmer
74 field school, farmer to farmer communication approach, farmer field approach, and group
75 approach. They also described other approaches which were adopted in India such as
76 farming system approach, mass media approach, market led extension approach which
77 focuses on providing information on agricultural production marketing, cyber extension
78 approach which depends on Information Communication Technology, cost recovery
79 approach, and share-cropping system.

80

81 In the general approach, extension services cover all areas of agricultural production. If
82 these services were directed to a specific commodity, they are called commodity extension
83 approach. If the services were directed to all people, they are called public or general
84 clientele approach. If these services were directed to a specific group of people, they are
85 called sector or selected clientele approach. The general and public extension approach is
86 normally implemented and controlled by the government through agricultural ministries and
87 educational institutions. The commodity approach may be implemented by the government
88 or by any private organization. General or public agricultural extension services offered
89 through governmental organizations are called governmental. When these services are
90 offered through some nongovernmental agencies, they are called nongovernmental or
91 private approach. While the governmental approach does not seek any profits, the non-
92 governmental or private agricultural extension services are offered by profit achieving
93 organizations.

94

95 Normally, in the general or public approach, extension services are offered free of charge,
96 but if farmers contribute and pay the cost of extension services, or if these services were
97 offered by any non-governmental organization, this approach is called cost-sharing or cost
98 recovery approach.

99
100 In the developing countries, extension programmes are designed and planned at the central
101 levels. This centralized approach is a non-participatory approach. If local people and village
102 extension workers participated in programme planning, the approach is called participatory
103 approach. The non-participatory approach is a top-down approach, and the participatory
104 approach is a down-top approach.

105
106 In the training and visit approach, extension workers are trained to educate certain groups of
107 farmers in a selected area on certain types of agricultural innovations concerning certain
108 commodities. In the project approach, agricultural extension services are directed to a
109 certain agricultural commodity or activity and normally funded by a foreign organization
110 through a particular period. In the farming system approach agricultural extension
111 programmes are planned for each agricultural local area according to its conditions. In the
112 technology derived approach, extension programmes are based on the available agricultural
113 technologies at research centres, but in the need oriented approach, extension services are
114 based on people's needs or demand driven services.

115
116 The distinction between these types of approaches is not absolute and there are no border
117 lines between them. They are interrelated and one can hardly find a single approach
118 adopted without other approaches. For instance, the participatory approach, farmer to farmer
119 approach, farm field schools, farmer group approach, farmer friend approach, sharing cost
120 approach are adopted under the general and commodity approaches. They are also adopted
121 under the governmental and nongovernmental approaches and in public and private
122 approaches. Some approaches are defined and focusing on the extension methods used
123 whether these methods were individual and group communication methods or mass media
124 contacts. Some other developed approaches are using ICT which may be adopted in any
125 broader approach.

126
127 As stated by Axinn [1], an approach which is appropriate and applicable at a certain time in
128 certain place, may not be appropriate and applicable at different times and places. Also
129 there are some approaches which may be adopted as supportive to other approaches.
130 The general approach is the most common adopted approach in most countries. All other
131 approaches have been introduced in some developing countries and funded by foreign
132 agencies as means to improve the effectiveness of agricultural extension systems in these
133 countries. These approaches were adopted in certain areas for certain commodities during
134 certain periods of time to cover limited sectors of people. The success or failure of their
135 adoption depends on the continuity of their finance. But the governments of these countries
136 face much difficulty in providing the required financial resources to sustain the
137 implementation of such projects.

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139 **4. ATTRIBUTES OF THE EFFECTIVE EXTENSION APPROACH**

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141 An effective extension model focuses strongly on the dissemination and facilitation of the
142 adoption of recommended technologies and practices to achieve its objectives. It should be
143 able to improve production and productivity. It should also be available and accessible.

144 Ssemakula and Mutimba [9] defined some attributes which constitute an effective extension
145 model. They considered these attributes as determinants of effectiveness of the extension
146 model. These are: existence of a clear and inclusive philosophy, knowledge and
147 commitment of the extension providers, social proximity of providers and beneficiaries,

148 involvement of beneficiaries in the process of technology generation and dissemination,
149 availability of the services to beneficiaries at all times, improving productivity of enterprises,
150 and presence of supportive policies, institutions, programmes, and related enabling
151 processes.

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153 **5. Qualities and necessary conditions for the effective extension approach**

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155 The effective extension approach is that approach which should be based on principles of
156 agricultural extension. These principles were described by many researchers (see for
157 instance: [9], [10], and [11]). Based on these principles, and some other research studies on
158 the effectiveness of extension models and approaches (see for example: [1], [8], [12], and
159 [13]), the following qualities and necessary conditions for the effective agricultural extension
160 approach can be determined:

161

162 **First:** It should fill the gap between research and farmers and play the role of extension
163 effectively. Extension is a two-way link. As stated by Oakley and Garforth [10], this two-way
164 flow of ideas can occur at different stages: When the problem is being defined, when
165 recommendations are being tested in the field, and when farmers put recommendations into
166 practice. The effective agricultural extension should not only identify farmers' problems and
167 needs and take these problems to research centres for solutions, but it should also go back
168 to farmers with these solutions. In addition, the effective extension should identify
169 appropriate new technologies and provide farmers necessary education about them and
170 carry the consequences of their adoption to the research centres (Figure 1). The effective
171 agricultural extension approach should have strong linkages with the research centres as
172 well as with farmers and other related institutions.

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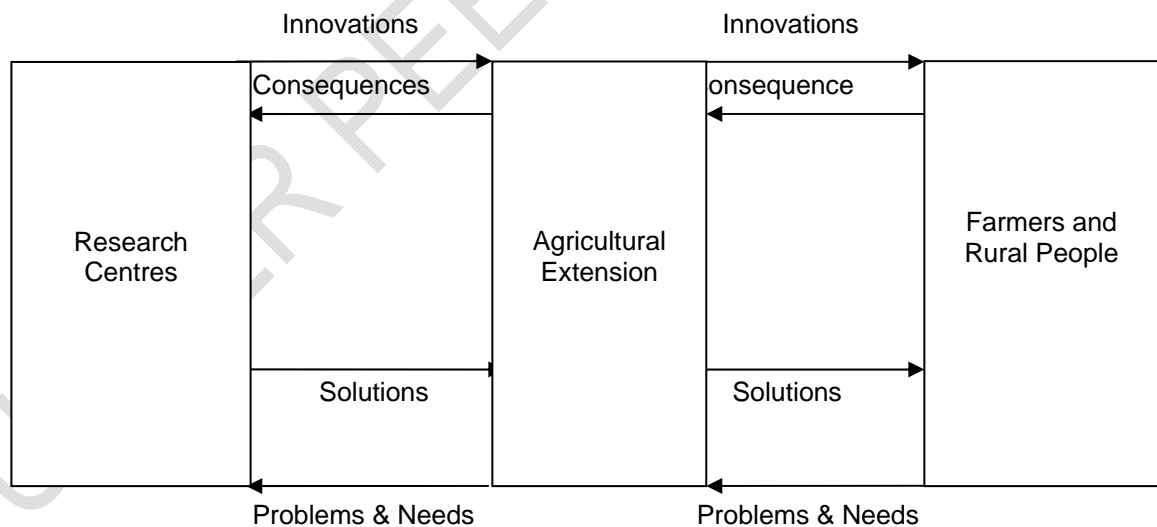


Figure 1: The role of effective agricultural extension

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Second: It should fit extension programme goals. As stated by Axinn [1], the success of an agricultural extension programme tends to be directly related to the extent to which it fits the programme goals for which it was established.

Third: It should improve agricultural production and productivity through the dissemination and adoption of new technologies and practices.

- 201 **Fourth:** Its extension services should be available for beneficiaries at all times.
202
203 **Fifth:** Its extension services should be accessible to beneficiaries.
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205 **Sixth:** It can reach beneficiaries and offer necessary education on new technologies for
206 them.
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208 **Seventh:** It should rely on appropriate extension communication methods.
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210 **Eighth:** It should be based on people's participation in generating and disseminating new
211 technologies.
212
213 **Ninth:** It should be based on participation of extension staff at local levels in planning
214 extension programmes.
215
216 **Tenth:** It should rely on local leaders.
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218 **Eleventh:** Its extension programmes should be planned at the local levels (from down to
219 top).
220
221 **Twelfth:** It should design appropriate extension programmes for each area.
222 These qualities and necessary conditions for the effective agricultural extension approach
223 can be regarded as determinants for effectiveness and constitute the main components of
224 the effective extension approach.
225

226 **6. MEASURING THE EFFECTIVENESS OF EXTENSION APPROACH**

227
228 Different methodologies have been used by many researchers to measuring the
229 effectiveness of some extension approaches, models, and services. Ssemakula and
230 Mutimba [8] measured the effectiveness of farmer – to farmer approach by increased:
231 technology uptake, production, food availability, information – sharing, and sales of
232 commodity. Al-Sharafat *et.al.* [14] depended on olive productivity in their assessment of
233 Jordan's agricultural extension services.
234

235 Saravanan and Veerabhadraiah [12] measured the effectiveness of public, private, and
236 NGO's extension services by using twenty eight indicators in three levels: input, process,
237 and outcomes. The same methodology was adopted by Debnath *et.al.* [13] to measure the
238 effectiveness of public extension services of the department of agriculture in Tripura state,
239 India by using twenty indicators. These indicators included nine organizational indicators, six
240 clientele indicators and five indicators related to extension personnel. The organizational
241 indicators are concerning total expenditure, expenditure on extension activities, frequency,
242 adequacy and usefulness of extension activities, clientele contact, technical manpower :
243 cultivator ratio, organizational climate, guidance and supervision, facilities and resources,
244 and communication. The clientele indicators included their commitment, willingness to pay
245 for the service, relevance, quality, and usefulness of extension service. The indicators
246 related to extension personnel included organizational commitment of extension personnel,
247 client accountability, job satisfaction, job performance, and job competence.
248

249 Lotfy and Adeeb [15] measured farmers' satisfaction and their perception of quality of
250 extension services in Minya and BaniSuef governorates in Egypt. Agbarevo [16] used
251 several indicators to measure farmers' perception of the effectiveness of extension
252 personnel in Cross-River-state, Nigeria. These indicators included the level of awareness of
253 extension services created among farmers, number of visits made by the village extension

254 worker, organized and held meetings with farmers, method and result demonstrations,
255 research/extension linkage, workshops, farmer training programmes, farmers participation in
256 OFAR, distribution of pamphlets, leaflets, ..., etc., and organization of audio-visual shows.

257

258 Cerdan-Infantes, *et.al.* [17] measured the impact of the provision of agricultural extension
259 services to grape producers in Mendoza, Argentina on its yield and quality. Akomaning, *et.*
260 *al.* [18] examined the effectiveness of agricultural extension system employed by farmer
261 based organizations (FBOs) in the central region of Ghana. Their assessment of the
262 effectiveness of the extension systems identified was measured based on farmers'
263 perception of the performance of various extension systems, and their perception of the
264 effectiveness of extension approaches. The performance indicators included training
265 workshops, research/extension linkage, input provision, credit provision, marketing outlets,
266 provision of essential services, adoption of technology, farmer participation, and farm
267 productivity- yield. The effectiveness of extension approaches was measured on a five point
268 Likert-type scale ranging from very effective to not effective.

269

270 **7. EFFECTIVENESS DETERMINANTS**

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272 Based on the above, it can be said that there are several determinants of the effective
273 agricultural extension approach which should be taken into consideration in its
274 measurement. These determinants can be stated as follows (Figure 2):

275

276 1. Organizational determinants which include the extension organization, extension/research
277 linkage, extension/farmers organizations linkage, and extension/other systems linkage.

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279 2. Farmers determinants which includes their characteristics, their satisfaction of extension
280 services and their perception of extension service quality and usefulness, their participation
281 in generating and adoption of new technology as well as in planning and evaluating
282 extension activities.

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284 3. Extension personnel determinants including their commitment of extension services, their
285 efforts and activities for extension services provision.

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287 4. Economic determinants which include production, productivity, and net profits of
288 agricultural products.

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290 5. Marketing determinants including the provision of necessary information on marketing of
291 agricultural products.

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293 6. Communication channels including various types of communication channels used to
294 disseminate knowledge and information on new technology among farmers and encourage
295 them for their adoption.

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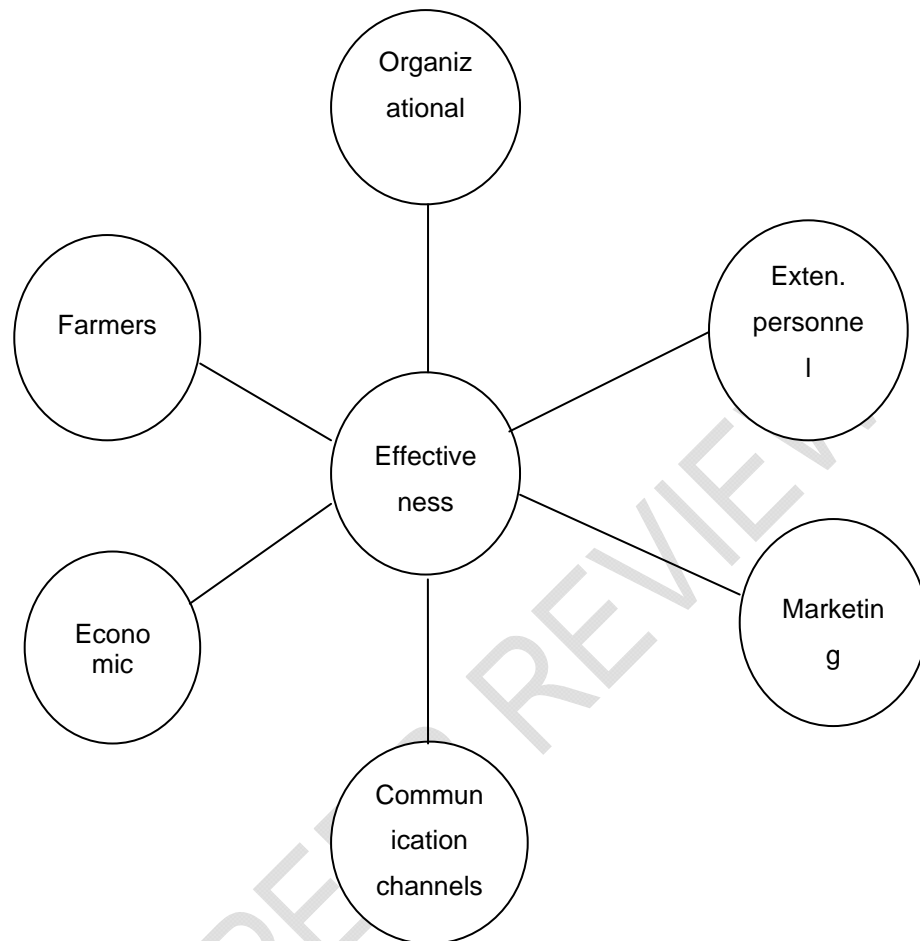


Figure 2: Effectiveness determinants

8. APPLICATION OF AGRICULTURAL EXTENSION APPROACHES IN EGYPT

Most of the defined agricultural extension approaches were adopted in Egypt. The general approach is the traditional agricultural extension approach and has been adopted through the Ministry of agriculture since the establishment of the extension organization in Egypt in 1953. The commodity approach has been implemented through certain extension projects for certain agricultural products in certain agricultural areas such as strawberry village in Qalubia governorate, cantaloupe or muskmelon project in Ismaeiliah governorate, and wheat national campaigns over all the country. Small Farmer approach, T & V approach, Farmer to farmer, Farmer Field School, and Group approach were adopted in some governorates in the country. In addition, Virtual Extension & Research Communication Network (VERCON) and The Rural and Agricultural Development Communication Network (RADCON) which are based on ICT were also adopted in some governorates funded by some foreign organizations. The continuity of these projects depends on the availability of local financial resources.

360 **9. CONCLUSION**

361

362 There are numerous agricultural extension approaches defined by researchers and some
363 world organizations. However, there is no one approach which could be applied at all times
364 and for all different places. Any approach in order to be effective requires the adoption of
365 some other supportive approaches. Most approaches have been proposed to be applied in
366 some developing countries to improve the effectiveness of their extension systems and have
367 been introduced and adopted through some foreign funded projects. Several attributes,
368 qualities and necessary conditions of the effective extension approach were identified.
369 Different methodologies were used to measuring the effectiveness of some extension
370 approaches. But each focused on certain aspects or dimensions of effectiveness. It can be
371 concluded that all attributes, qualities and necessary conditions of the effective agricultural
372 extension approach should be taken into consideration in measuring its effectiveness.

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