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Prospects of Farmer Field School Extension Approach in Enugu State

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Abstract

The study examined the features of farmer field school in Enugu State. Constraints as well as factors for enhancing its performance were studied. Sixty farmer members of farmer field school representing four out of the six established farmer field schools were randomly selected. Data were collected by use of structured interview schedule and analysis conducted using percentage and means. The mean population of the school was 22 persons, who met monthly (70%) at farmers' field (91.7%) for learning in areas like production and preservation (100%), integrated pest management (96.7%), agronomic practices (96.7%), ecosystem analysis (95.0%) and others. The respondents perceived that the school was important to them in sharing problems and locally adaptable solutions (M=1.9), acquiring novel farming techniques and skills (M=1.9), enhanced interaction with researchers and extension workers (M=1.6) and improving access to relevant information (M=1.9). However, farmer field school was constrained by factors ranging from poor funding (M=3.0), poor logistic supports (2.2), poor infrastructure (M=2.3), staff mobility (M=2.0) to lack of cooperation and interest of members (M=2.2). The performance of the school could be enhanced through provision of logistic support, adequate funding and access to credits, provision of infrastructure, proper selection and orientation of members, as well as availability and timely access to inputs. The study concludes that agencies should intensify efforts on orientation, training and support to facilitate effective interaction, capacity building/empowerment and farmer-farmer extension.

Keyword: *Farmer field school*

Introduction

Agricultural extension has been widely accepted as an important tool for agricultural and economic growth, particularly in agrarian economies of developing countries. As a system of trained human resource and input, it serves to support, facilitate and encourage agricultural growth in a quantitative and qualitative manner through provision of technical support, information and advisory services. According to Birner, Davis, Pender, Nkonya ,*et.al.* (2006), it is the entire set of organizations that support and facilitate people engaged in agricultural occupations to solve and obtain information, skills and technologies to improve their livelihood and well being.

Over the years, many extension approaches and models have been implemented across the globe. Akinagbe and Ajayi (2010) observe that Nigeria has experimented on a number of extension approaches, agricultural and rural development programmes. Characteristically, these approaches are classified as conventional

ministry-based extension system, project based extension, sectoral/commodity extension, university-based extension and integrated rural development and farmer focused extension (Ilevhaoje, 2004). For instance, different regimes of governments have launched several agricultural and rural development programmes. Notably among these are; National Accelerated Food Production Programme (1973), River Basin Development Authority (1975), Operation Feed the Nation (1976), Green Revolution (1985), First National Fadama Development Programme (1992), National Special Programme on Food Security (2003) and others. While some of these programmes are on-going, many were short-lived largely because of poor funding and political instability.

However, the Agricultural Development Programme (ADP) remains the main agency responsible for public extension services in the country. Presently, the system has been under intense criticism for poor performance largely caused by interaction of several factors that are both organizational, institutional policy and management-related. Similarly, the training and visit model employed for technology development and delivery has been criticized for several lapses. Although the strategy has helped to professionalize extension services in Nigeria, it has proved to be very regimented and expensive. Other arguments include the issues of irrelevance, inefficiency, low coverage, and equity. According to Eicher (2007), the reoccurring criticism of national public extension system is that they are publicly centralized and inhibit feedback from clients to extension specialists, researchers, policy makers and donors.

Overall, extension models and approaches adopted in Nigeria are public dominated, production-led, highly centralized, top-down, and monolithic. Traditionally, research generates innovations which are passed on to extension and in turn disseminated to farmers. The farmers remain passive recipients of technology. There are poor linkages and interaction in the entire system of research-extension-farmers, which often result to delivery of inappropriate technologies and subsequent low adoption by farmers.

In recent time, however, development planners, policy makers and practitioners have called for paradigm shift in extension approaches and services. Highlighting the pressure for a shift, Eicher (2007) reported that the acknowledged failure of the T & V extension model in Asia and Africa in the late eighties and early nineties has stimulated debate on extension reform and new extension models such as farmer field school (FFS). Thus, many reform approaches are on board in pursuit of less costly, more pluralistic system (Anthort, 1998; and Anderson, 2007), farmer responsive, demand-drive and participatory approach to extension.

Farm field school emerged in the late eighties as a typical participatory, community based and farmer driven methodology, which has spread in about 50 to 70 countries of the world. It is a model which utilizes participatory methods to help farmers develop analytical skill, critical thinking and creativity, and also help them to learn how to make better decision (Kenmore, 2002). It is a school without wall where group of farmers (20-25 persons) meet periodically (weekly) with facilitators during crop or animal cycle. Farmer field school is based on the adult learning principles and experiential learning. The school reflects the four elements of experiential learning namely concrete experience, observation and reflection, generalization and abstract

conceptualization and active experimentation. Group of farmers are either identified or formed based on particular topics eg poultry, vegetable etc.

Earlier application recorded was on Integration Pest Management (IPM) for rice in Asia and later beyond IPM to community forest management, and HIV/AIDs in Cambodia (Yech, 2003). Further spread has taken place with focus of the FFS moving from primary rice IPM in Asia to vegetable and cotton IPM, potatoes IPM in Latin America, cotton, rice, tree crops and vegetable IPM in Africa, vegetable and fruit IPM in the Middle East (Jiggins, Governatori and Roggero, 2005). FFS is becoming the foundation of field based food security programmes. It has also gained acceptance in the Nigeria extension system. Many FFS are established in selected sites in Enugu State. However, the extent of implementation of the model, the features, prospects and the constraining factors are not yet certain. The study therefore aimed to;

- describe the features of FFS in Enugu State;
- ascertain the perceived importance to participating farmers; and
- determine the constraining factors to FFS and factors for enhancing its effectiveness.

Methodology

The study was conducted in Enugu State. Enugu State consists of 3 agricultural zones namely Enugu East and Enugu North and Enugu West. Enugu North and Enugu East were randomly selected for the study. Two FFS were randomly selected from the three FFSs established in each zone. A total of four FFSs located in Amagunze, Obeagu, Adani, and Obollo-etiti were used.

Fifteen farmer members out of average of 20-25 persons in each FFS were randomly selected from each school giving a total of 60 respondents. Data were collected by use of structured interview schedule. Respondents were asked to indicate group size (number of persons), frequency of meeting (number of meeting), meeting place, learning methods, subject area's for learning and others. Objective two elicited information on the perceived importance/benefit of FFS. Respondents were provided with items to indicate the level of importance of FFS to them on a 3 point-Likert type scale of highly important (2) important (1) and not important (0). Also list of constraint variables were provided and respondents were asked to indicate the level of seriousness of the problems on a 3 point Likert type scale of -very serious (3), serious (2), and not serious (1). Data were analyzed using percentage and mean scores. Mean value ≥ 1.0 was regarded important/beneficial. The constraint variables with mean scores ≥ 2.0 were considered serious constraints. Similarly, to deduce information on factors for enhancing its effective implementation respondents were asked to indicate the extent to which the listed factors could enhance implementation of the school innovation on a three point Likert type scale of- to a very great extent (2) great extent (1) and to no extent (0). Mean scores of ≥ 1.0 were considered major factors while < 1.0 was considered minor factors

Results and Discussion

Features of farmer field school

Table 1 shows the features of farmer field school in terms of size of school, frequency of meeting, and meeting place, learning techniques, subject matter for learning, and decision on subject matter for learning.

Size of farmer field school

Majority (58.3%) of the farmer field school has between 11 and 20 members, while a lesser proportion (23.3%) has 20 to 30 farmer members (Table 1). About 13.3% and 3.3% of the respondents indicated that the size of farmer field schools were 31-40 and 1 to 10 members, respectively. However, the mean size of the school was 22 persons. This agrees with the basic concept of farmer field school as an approach that offers community based non-formal education for a group of about 25 farmers (Braun, Thiele and Fermade, 2000). A lesser proportion had 20-30 members which according to Madukwe (2000), a group of 20 to 30 farmers is ideal and manageable in order to provide a face to face interaction, better communication and flow of information. Generally, group approach is increasingly being used for most farmer-led methodologies, perhaps due to its cooperative, multiplier and cost effective advantages. However, the structure and manner in which groups are formed; type of groups and scope of coverage explain the performance of even the most appropriate model of technology validation and dissemination.

Frequency of meeting

Greater proportion (70.0%) of the farmer field schools met monthly, while others met fortnightly (15.0%), weekly (11.7%) and during planting season (3.3%) (Table 1). The contact period for the schools seems very inadequate for any meaningful learning, skill acquisition and experimentation. Davis and Place (2003) reported that farmer field school meets periodically with facilitators during the crop or animal cycle. In principle however, farmer- field schools meet weekly with a total of about 14 meetings during crop seasons. The limited contact period expressed by the respondents might be attributed to several factors related to organizational, personnel and economic issue. Farmer field schools are founded on the ADP public system structure and may have to contend with inherent structural and management problems of the system.

Place of meeting

Table 1 shows that farmer field school participants met at fields/farmers' farm (91.7%), village square (69.7%) and under shades/tress along farm roads (55.0%). Only 3.3% of the respondents indicated that meetings were held in market place. Traditionally, framers' field is the meeting place for farmer field school, perhaps to enhance experimentation and adaptability of skills/knowledge gained. The choice of meeting place with regard to the location of study field is one of the serious logistic factors that could affect participation, undermine learning objective and subsequently affect the performance of the whole process. Use of village, shades and market places may have been for discussion on issues of crucial interest to the group members.

Technique/method of learning

Responses in Table 1 show that the learning techniques adopted in Farmer Field School were experimentation (100.0%), group discussion (93.3%) and lectures (53.3%). Only 41.7% indicated that seminars were used as techniques for learning and interaction. The use of experimentation and group discussion confirms the principles of Farmer Field School. Group discussion and experimentation are strong techniques in Farmer Field School operation because they facilitate sharing of knowledge and experience among farmers. Hakiza, Odogola, Mugisha, *et. al.* (2004), opined that through experimentation and discussion, farmers are by and large good at providing a holistic perspective, share what works, what needs to be improved upon in the current system, set the evaluation criteria for innovation in accordance with their objective and test possible innovation under real life condition. The use of lecture and seminars may have been in relation to other issues such as groups' empowerment and provision of support services.

Decision on subject matter for learning

The respondents indicated that decision on subject matter for learning was influenced by issues of interest to members (96.0%), problem on ground (93.3%) and emergency reports and problems in the community (55.0%) (Table 1). A lesser proportion (30.0%) reported that extension workers influenced the choice of subject for learning and experimentation. This suggests that the application of farmer field school technique in the study areas is highly participatory, community-based, farmer-led and locally adaptable. The approach is established on the learning philosophy that what is relevant is decided by the learner or discovered by learners. Thus, farmers' ownership of the process, context and knowledge, is ensured. Above all, curriculum is dictated by the specific production system, priority problems and the local conditions to the farmer groups (Anadajayasekeram, Mweri, Zishirir *et al.*, 2001). The extension worker has limited influence because his roles have evolved from that of a primary knowledge source to that of facilitator of knowledge creation. (Akinngbe and Ajayi, 2010).

Table 1: Distribution of respondents by size of group, frequency of meeting, meeting place, learning methods and decision on subject matter for training (n=60)

Size of FFS	Frequency	%
1-10	2	3.3
11-20	35	58.3
21-30	14	23.3
31-40	8	13.3
> 40	1	1.7
Frequency of meeting		
Monthly	42	70.0
fortnightly	9	15.0
Weekly	7	17.7
Planting season	2	3.3
Meeting place*		
Field/farmers farm	55	91.7
Village square	37	69.7
Under a shade or tree	33	55.0
Market place	2	3.3
Learning method*		
Experimentation	60	100
Group discussion	56	93.3
Lecturers	32	53.3
Seminars	25	41.7
Decision of subject matter for training *		
Group members decides on issue of learning interest	57	95.0
Problem on ground	56	93.3
Complaint or reports from villages	33	55.0
Subject decide on by the facilitator	18	30.0

Source: Field survey (December, 2010)

***Multiple response**

Subject matter learned

The main subject matters learned were production and preservation method of crops of interest (100.0%); integrated pest management (IPM) for rice, vegetable (96.4%), and ecosystem analysis (95.0%) (Table 2). Other topics included for learning were nutrition (90.0%); group dynamics (86.7%), animal husbandry (76.7%) and marketing (60.0%). The composition of subject for learning seems to suggest that school membership/group is an amalgamation of farmers' groups formed under the T & V extension system (contact groups). Ideally farmer field schools are organized around particular topics such as rice, vegetable production, cotton and others. Though the application has spread to other areas such as forest management, HIV/AIDS (Yech, 2003), women self-help group; the inclusion of training on group dynamics, nutrition, animal husbandry and marketing issues are not yet popular, particularly in countries like Nigeria where the concept is relatively new.

Table 2: Percentage distribution of respondents by subject matter learned (n = 60)

Subject matter learned	Frequency	%
production and preservation methods	60	100.0
Integrated pest management (IMP)	58	96.7
Relevant agronomic practices	58	96.7
Ecosystem analysis	57	95.0
Special topics on nutrition	54	90.0
Group dynamics	52	86.7
Animal husbandry	46	76.7
Marketing	36	60.0

Source: Field survey (December, 2010)

***Multiple response**

Perceived importance/benefit of farmer field school

The respondents perceived that Farmer Field School was beneficial and important to farmers for sharing problems and solution (M =1.91), Learning new techniques and skills (M = 1.9), timely access to information (M = 1.7), builds self confidence and high morale (M = 1.7) as well as engenders interaction among stakeholders (M = 1.6) (Table 2). Other benefits were in ensuring high rate of feedback (M = 1.6), provide locally adaptable solutions (M = 1.5) and others. The result confirms Simpson and Owen (2002) who observed that use of farmer field schools will serve as a platform for improved exchange and more constructive relationship between farmers, extension agents, researchers and other stakeholders. According to Madukwe (2006), it has transformed farmers from recipients of information to generators and manipulators of local data. In essence FFS holds great potential for making up for the lapses/weakness of the production-led, top-down and inefficient extension approaches practiced before now in the country.

Table 3: Mean score of farmers' perceived importance of farmer field school extension approach (n = 60)

Perceived importance	M	S.D
Share problems and solution	1.9	0.28
Learn new techniques and skills	1.9	0.30
Timely access to information	1.7	0.52
Build self confidence and high morale	1.7	0.50
Engenders interaction among stakeholders	1.6	0.49
High rate of feed back	1.6	0.56
Solutions to problems are locally adaptable	1.5	0.53
Stimulate ingenuity in members	0.7	0.63

Decision rule ≥ 1.0

Constraints to farmer field school

Data in table 4 indicate that the major constraining factors to FFS were funding (M = 3.0), inadequate facilities for demonstration and learning (M = 2.3), poor cooperation and interest of farmer members (M = 2.2), poor logistic support (M = 2.2), poor staff mobility (M = 2.0) and low literacy (M = 2.0). Other constraints identified by the respondents included inadequate number of meeting (M = 1.9), civil servant attitude of extension worker (M = 1.6) and unsuitable time of meeting (M = 1.6). Funding or fiscal suitability is replete in literature as one of the major challenges of most farmer-led approaches. Specifically, FFS is both resource intensive and project dependent. A survey conducted in Uganda shows that FFS had the highest cost per farmer trained compared to other approaches like T & V system (Nalukwago, 2004). Similarly, Braun and Duveskog (2008) also reported that the major problem to FFS is variation in quality among extension staff because most available extension staff in developing countries were hired and trained under the T & V system. Also the issue of staff mobility and attitude could be viewed as a carryover from the old system presently under intense criticism for poor performance and contracted government funding.

Furthermore, Thijssen (2002) identified inadequate inclusion of local knowledge and practices due to limited time and narrow focused, as limitation of FFS. It is possible that the facilitators lack orientation and the skills to appreciate, document, and analyze indigenous knowledge and practices. The low interest and cooperation of farmers as a constraint variable might be explained by relegatory attitude and low literacy level of farmers under training. Often farmers find it difficult to accept and appreciate the innovativeness of fellow farmers. Besides being a relatively emerging approach in Nigeria, farmers may not have gotten used to the intensive nature of the learning schedule.

Finally, Hakiza, et. al (2001) confirmed that the issue of logistic support in terms of lack of input requirement, synchronization of the FFS with planting season, relationship of FFS to local needs and others is another issue that affects the quality of FFS. It also influences the interest and participation of members.

**Table 4: Mean score of major constraints to farmer field school
(n = 60)**

Variables	M	S.D
Poor funding	3.0	0.00
Lack of basic facilities/poor infrastructure	2.3	0.55
Poor cooperation and interest of farmer or members	2.2	0.73
Poor logistic support for experimentation	2.2	0.83
Staff mobility	2.0	0.83
Low literacy level of members	2.0	0.89
Inadequate number of meetings	1.9	0.79
Civil servant attitude of extension workers	1.6	0.74
Time of meeting not suitable	1.6	0.71
Neglect of local indigenous knowledge	1.3	0.79
Monoploy of discussions by members	1.3	0.51

Serious ≥ 2.0

Factors enhancing effective implementation of farmer field school.

Table 5 shows that the perceived factors for enhanced implementation of farmer field schools were adequate funding and access to credit (M = 2.0), availability and access to production inputs (M = 1.8), provision of infrastructure e.g. irrigation system, feeder roads (M = 1.7) timely provision of logistic support (M = 1.6), adequate orientation and training of groups (M = 1.4) and provision of training for facilitators (M = 1.4). Generally, farmers need production inputs to facilitate experimentation and subsequent application of skills acquired for increased production and enhanced level of living. Being relatively a new extension innovation, the results suggest that proper orientation and training of both FFS members and facilitators are crucial for effective implementation; otherwise the farmers and extension workers might present attitude of business as usual. Also the issues of funding and provision of logistic support particularly for extension workers are critical to guard against low job satisfaction and morale common in public extension system.

Table 5: Mean score of factors enhancing effective implementation of farmer field school.

Constraints	M	S.D
Adequate funding and access to credit	2.0	0.26
Availability and timely access to production input	1.8	0.37
Availability of infrastructure	1.7	0.45
Orientation and training on group dynamics	1.4	0.56
Training of facilitators	1.4	0.58
Provision of logistic supports	1.6	0.53

Conclusion

Farmer field school is increasingly gaining popularity in most extension policy decision to evolve extension system that is demand-driven, client responsive and locally adaptable. The findings showed that farmer field schools operational in the area exhibit some key features and the principles of FFS. However, responses suggest that the FFS members are yet to understand and appreciate the concepts and the ideology of the approach. Its importance in providing locally adaptable solutions, improved interaction and others are constrained by several factors ranging from inadequate funding, poor infrastructural facilities, poor logistic support, and staff mobility. Ironically, these problem also characterized the linear, top-down and public dominated system of extension delivery. Thus, evolving an effective FFS calls for pragmatic structural change, staff/farmer orientation and training. Extension practitioners need to address structural and professional problems which if ignored is bound to undermine the potential of FFS for efficient extension service. Also issues of fiscal sustainability, logistic support and use of strong farmer groups should be paramount in strategies to enhance its performance.

REFERENCES

- Akinagbe, O.M. and A. R. Ajayi (2010) Challenges of farmer-Led extension approach in Nigeria. *World Journal of Agricultural Science* 6(4):353-359.
- Anandajayasekeram, P., A. M. Mweri, O.J. Zishirir, W. Odogola, M. Mkuchu and M. Phiri (2001). Farmer field schools: Synthesis of experiences and lesson from FARESA member countries. Harare, Zimbabwe FARMSA.
- Anderson, J. (2007). Agricultural Advisory Services. A background paper for WDR 2008. Washington, D.C. World Bank.
- Antholt, C. H. (1998). Agricultural Extension in the Twenty-first Century. In: Eicher C.K. and John M.S. Baltimore, M. D (eds.) *International Agricultural Development*, The John Hopkins University Press: 354-369.
- Birner, R., K. Davis, J. Pender, E. Nkonya, P. Anandajayasekeram, J. Ekboir, A. Mbabu, D. Spelman, D. Horna and S. Benin (2006). From best practice of best fit: A framework for analyzing agricultural advisory services worldwide. Development strategy and governance division, *Discussion paper No. 39. International Food Policy Research Institute (IFPRI), Washington, D.C.*
- Braun A., and D. Duveskog, (2008). The farmer field school approach: History, Global Assessment and success stories. 3rd Draft, 6 October, 2008.
- Braun, A. R, G. Thiele and M. Fernandez., (2000). Farmers field school and local agricultural committees: Complementary platform for integrated decision making in sustainable agriculture, Research paper, AGREN Network, DFID, England.

- Davis, K and N. Place, (2003). Current Concepts and approaches in agricultural extension in Kenya. *Proceeding of the 19th Annual conference of ALAEE. Raleigh, North Carolina U.S.A: 745-756.*
- Eicher, C.K. (2007) Agricultural Extension in Africa And Asia. World Aginfo Project, Cornell University, Ithaca, New York: 1-10.
- Hakiza, J.J., W. Odogola, J. Mugisha, A.R. Semana, J. Nalukwago, J. Okoth, and Adipala Ekwamu. (2004). Challenges and Prospects of disseminating techniques through farmer field schools: Lessons Learnt based on experience from Uganda. *Uganda Journal of Agricultural Sciences, 9:163-175.*
- Hakiza, J.J., W. Odogola, J. Mugisha, A.R. Semana, J. Nalukwago, J. Okoth and Adipala Ekwamu, 2004. Challenges and Prospects of disseminating technologies through farmer field schools: Lessons learnt based on experience from Uganda. *Uganda J. Agric. Sci., 9:163-175.*
<http://knowledge.cta.int/en/content/view/full/2003>.
- Ilevhaoje, I.E. (2004). Training and Visit Extension System Flourishes in Nigeria. *Beraterinnen News 1/2004: 52-58.*
- Jiggins, J. G. Governatori and P.P. Roggero, (2005). Integrated Pest Management for Western corn rootworm in Central and Eastern Europe, GTFS/RER/017/ITA project Mid-Term Review 4th – 20th July 2005, FAO, Rome, Italy.
- Kenmore, P. (2002). Integrated pest management. *International Journal of Occupational & Environment Health 8 (3).*
- Madukwe, M.C. (2006). Delivering Extension Services to Farmers in Developing Countries. Retrieved from
- Nalukwago, J., (2004). Efficiency of Extension approaches used in dissemination of potato technologies in S. Western and Eastern Uganda. M.Sc Thesis ,Makere University.
- Simpson, B.M. and M. Owens (2002). Farmer field schools and the future of agricultural extension in Africa, *SD dimension, FAO.*
- Thijssen, R (2001). Farmer field school or Participation Technology Development: a comparison of principles and results of two participatory approaches. Paper presented at the international learning workshop on Farmer field school (FFS). Emerging issues and challenges, 21st -25th October 2002, Yokyakarta, Indonesia.
- Yech, P. (2003). Farmer field schools in Cabodia. LEISA Magazine on Low External Input and Sustainable Agricultural, March, 2003, Vol. 19: 1:11-12.