

# CONTINUING EDUCATION FOR AGRICULTURAL AGENTS IN GHANA USING OPEN AND DISTANCE LEARNING METHODS AND MATERIALS

**R. A. AGGOR\*, C.K. OSEI\*\*, K. ALLURI\*\*\***

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## **Introduction**

A pilot project is being conducted in Ghana to provide continuing agricultural education for Agricultural Extension Agents (AEAs) using open and distance learning methods and materials. The project is a collaborative one involving the following agencies:

- The Commonwealth of Learning
- The Distance Education Programme of the Ghana Ministry of Education
- The Crops Research Institute of the Council for Scientific and Industrial Research (CSIR), and
- Information Support Unit of the Ghana Ministry of Food and Agriculture (MOFA).

The aim of the project is to enhance the professional capacity of the AEAs so that they are better equipped to assist farmers to produce more and healthier crops, and minimize the abuse of agro-chemicals. The ultimate goal of the project, however, is to contribute to the national effort to reduce food imports and also ensure food security in Ghana.

\* Ministry of Education/University of Ghana, Accra, Ghana

\*\* CSIR-Crops Research Institute, Box 3785, Kumasi, Ghana

\*\*\* Commonwealth of Learning (COL), Vancouver, Canada

The paper highlights what has been done so far under the project, what we intend to do.

It starts with a summary of the preparatory activities. It then discusses the results of a survey carried out in the project area to determine the immediate learning needs of agricultural extension agents (AEAS) who are the target group. The final part of the paper provides some details of the work plan and how ODL is to be used.

### **Preparatory Activities**

On agreeing to participate in the project, the partners held a meeting to discuss the project as a group and the role of each partner. The meeting adopted a SWOT (Strengths, Weakness, Opportunities and Threats) approach. The strengths identified were:

- (i) Food security is a national concern. Any project that addresses the issue is likely to have the goodwill of a number of agencies in Ghana.
- (ii) ODL activities have been part of the education scene in Ghana for a long time and it is currently being given a boost by the government in the effort to increase access to all forms education, and at all levels.
- (iii) Continuing education is a necessity, especially for AEAs on whom farmers depend for information to increase the production of abundant and quality food. However, opportunities for such education are not readily available. And where available, specially packaged training materials are not often provided to which the AEAs can refer at critical times in their work.
- (iv) Vegetables form an important part in the diet of Ghanaians. A large number of farmers also grow vegetables on commercial basis. Cereals, tubers and cocoa have attracted support from foreign development partners but vegetables have not.

- (v) All AEAs had a minimum of secondary school education. They are therefore in a position to undertake learning on their own though supported distance education.

The weaknesses identified include the fact that limited continuing educational opportunities exist for the AEAs and this might have led to lack of motivation to engage in any planned learning activity. The communication system in Ghana is not too good, and telephones are not widely available to provide reliable support for an ODL project. It is sometimes problematic for the AEAs to travel from one village to the other and fares tend to be high. The process of reimbursing them is cumbersome. Some AEAs have motor bikes for their rounds but maintenance is a problem – parts are not readily available, and expensive.

In considering opportunities, it was felt that we could count on government support since ODL is being encouraged by the state. ODL materials have also been used beneficially elsewhere in developing countries to update teachers, and even train rural dwellers to bring improvement in their lives.

Finally, threats were considered. The use ODL for formal education is not new in Ghana. However, its use for continuing agricultural education is a new phenomenon. Another threat might be the poor study skills of the AEAs. It is also likely that availability of funds to conduct face-to-face sessions to reduce loneliness and isolation that the learners were likely to experience. Such sessions will provide opportunities for

interaction between teachers and learners as well as among learners. Another threat might be the lack of personnel with ODL expertise in Ghana.

The partners then settled for the Tanoso area in the Brong –Ahafo Region for the pilot in view of the fact that

- The area is noted nationally as an important vegetable growing area; much of what is grown is sent to the cities, like Accra and Kumasi, for sale.
- Poor agronomic practices, including abuse of agricultural chemical are widespread in the area.
- Tanoso is easily accessible; it is on the main road and it has easy access to surrounding villages.
- The District Director of Agriculture and the AEA's in the target district have demonstrated their willingness to work with other agencies to improve agriculture.
- There are three FM radio stations (Classic, ASTA and BAR) in the area.

### **Survey to Determine Learning Needs of AEA's**

A team of researchers was put together to conduct a needs assessment of the AEA's in the area using the participatory rapid appraisal (PRA) methodology. Secondary data on the area such as reports on vegetable growing, its problems and rainfall and cropping patterns were reviewed. Information was also sought from AEA's on their perceived needs on pre and post planting practices such as nursery practices, transplanting, agronomic practices, pesticide use and storage. Major vegetables, prevalent diseases and pests, gender issues and farmer cultural practices and farmer interventions were also collected in the PRA

setting. Farm observations, including transect walk, were used to crosscheck some information like spacing, variety, diseases and pests.

The result of the survey was analysed and needs that were perceived as “very much” or “much” by 10 or more out of the 16 respondents were taken as important issues to be covered in the curriculum of continuing agricultural education. The needs that came up were

- sub-soil nursery,
- monitoring through agro-ecosystem analysis (AESAs),
- preparation and use of neem insecticide and
- calibration of sprayers.
- Safe use of pesticides

The PRA also found out that the cultivation of tomato was the main economic activity in the area, followed by pepper and garden eggs (egg plant). Caterpillar, crickets, thrips, grasshoppers and aphids were mentioned as the most common tomato pests while curl leaves, damping off, leaf blight and blossom end rot were the main tomato diseases.

The farmers mentioned spraying as the main interventions they make to tackle the problem of pests and diseases. They use all kinds of pesticides and fungicides, as well as liquid fertilizers. The pesticides include *karate*, *thiodem*, *decis*, *faramic* and *ridomine*. The fungicides include *dithane*, *icocide*, *icobox bernate*, and *champion*. The farmer respondents reported that some of the pesticides are imported from La Cote d’Ivoire.

All the farmer respondents said the level of extension education they receive from AEAs is low. The AEAs confirmed this and enumerated several factors that make it impossible for them to reach the farmers regularly, and in a more effective way. Lack of information on the various agro-chemicals the farmers use was one major factor mentioned. They added that the Integrated Pest Management (IPM) approach was likely to reduce the use of pesticides on vegetables in the area. Some of the AEAs mentioned that they lack in-depth information on vegetable growing; their attention is focussed on maize, tubers and livestock.

One important finding in terms of ODL method and materials was that almost all the AEAs and the farmers reported that they own or have access to radio and mentioned 5pm – 8pm as the preferred time they would be at home to receive broadcasts.

### **Challenges posed by Survey Result**

The above findings pose a number of challenges if the continuing agricultural education needs of the AEAs are to be addressed through ODL methods and materials. In particular, how can an appropriate curriculum be developed to enhance the professional capacity of the AEAs to acquire the relevant knowledge, skills and attitudes to be able to assist farmers to grow healthier crops, and minimize their abuse of agro-chemicals. Another challenge was how to develop an efficient support system for the project. It was also necessary to plan towards sustaining not only the project but the partnership as well.

## **The Approach**

The group decided to address the issue of providing continuing agricultural education for the AEAAs as adult educators who have to adopt problem-solving methodologies, working with clients in identifying their problems and participating in their solution. Media application and best practice demonstrations were considered relevant. There is need for the project staff to work directly with the AEAAs and farmer groups, and their families. The project should also become a means to link research findings in terms of the cultivation of vegetables, the abuse of agro-chemicals and what the AEAAs, and ultimately the farmers, do on the field.

A good rapport must be built between the project staff, the AEAAs and the farmers. It is not intended to make it mandatory for the AEAAs to adopt the views conveyed by the ODL materials but to get the information, try them out and give the project the feedback to enable the content as well as the delivery methodology to be improved.

The project team took the culture of the people and the peculiar context at Tanoso into account. It also examined the literature relevant to the issue (Schramm, W et al, 1967, Verduin and Clark, 1991, Bates, A, 1995) and decided that even though various communication technologies could be used to deliver programme, the most appropriate ones should be:

- print
- audio cassettes, and ultimately
- radio broadcasts.

### ***Print***

As an instructional medium, print is familiar, relatively inexpensive and portable; booklets can be taken along when the AEAs visit the farmers in their fields. It is possible for them to access any part of the material, in any order, and for as long as they want to. It is the medium that can be utilised without additional equipment, anytime, anywhere when light is available (Verduin and Clark, 1991). We were aware of the fact that feedback with the print medium is delayed, and could lead to de-motivation and drop out on the part of the learner.

The AEAs could also visit the District Directorates of Agriculture and the project office at Crops Research Institute at Kumasi to discuss problems they might encounter. Such meetings could also be used to get additional information for improving programme delivery.

### ***Audiocassettes***

Since the target group of AEAs is only 16, radio broadcast was considered inappropriate; radio would have been appropriate if the target is the farmer. It was therefore decided to produce audiocassettes of the instructional materials and highlight important sections to be used alongside the print materials. Most of the AEAs have machines that can play the cassettes.



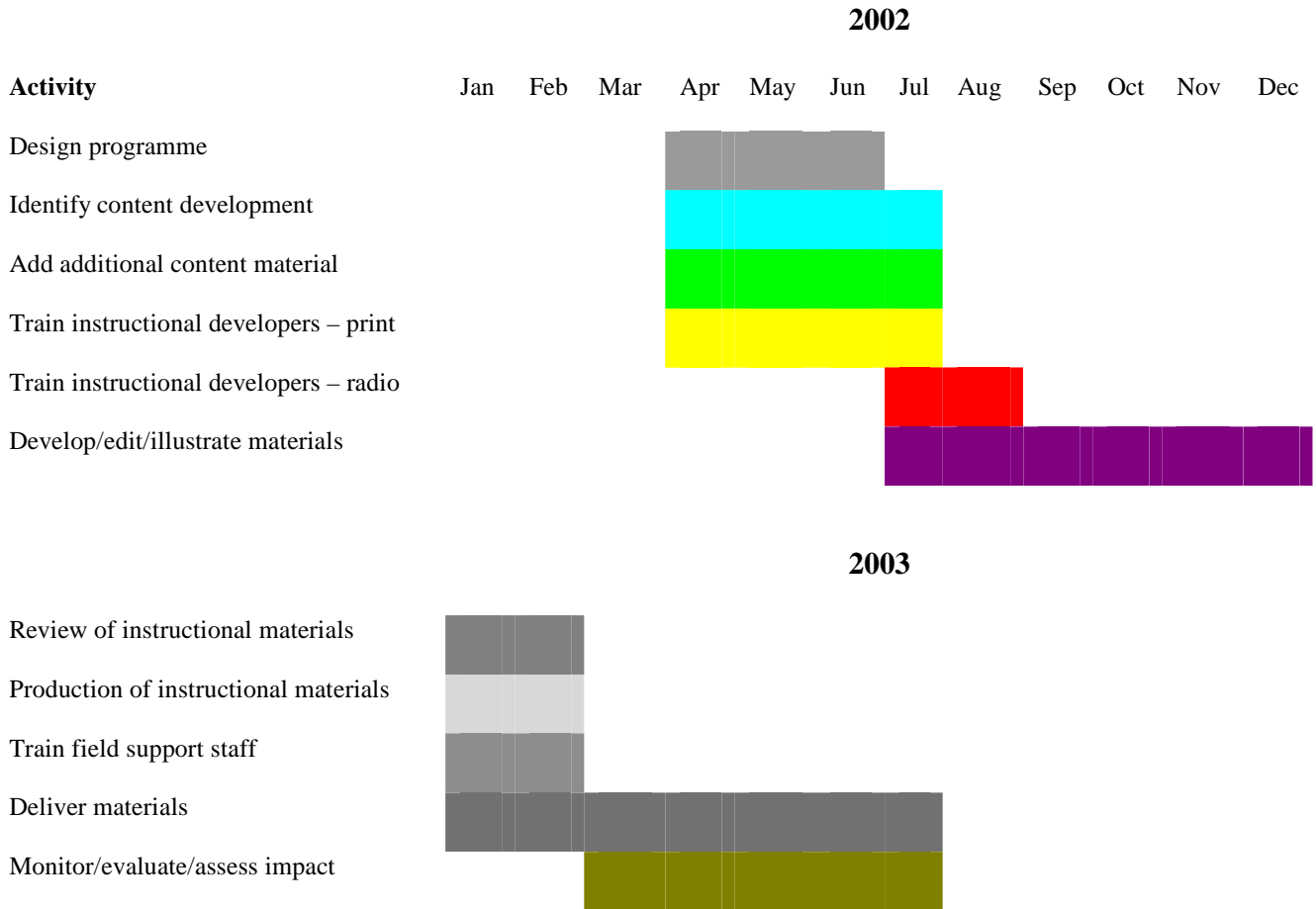
Audiocassettes will make it possible for the AEAAs to control the time and pace at which they learn. They can also manipulate the cassettes and listen to specific portions. While the production of a limited numbers of audiocassettes is going to be comparatively cheap, and therefore reduce costs, radio costs would have remained the same, whether it reaches a few people or millions.

### ***Radio***

Radio will eventually be used when the pilot goes beyond the AEAAs to cover the farmers. In particular, it is intended to use FM stations to target specific areas with topics that meet their leaning needs. Radio will be crucial in overcoming the literacy barrier that goes with the print medium. This is important in a country where 50% of the adult population is illiterate (Ghana Statistical Service 2000). With even the equivalent of US \$5, one can buy a fairly good radio in Ghana so access to radio will not be a major problem. Radio has the added advantage of its content being changed quickly when necessary.

The group thought that a multi-media approach will enable the AEAAs learn from more than one medium, and this is potentially a means to achieving better learning, and also reduce the loneliness and isolation associated with ODL.

With these in views in mind, the work plan below was adopted.



The partners intend to meet again to plan each course. Each course is intended to address a major learning need of the AEA's. The materials should be written so that the AEA's can learn from them without much difficulty. Needless to say, the courses should not be a reproduction of lecture notes, or a journal article. A training workshop will be run for the content developers to be able to write courses that specify clear objectives, relate materials to the experience of the AEA's, engage them in activities to reduce boredom

while making them work through the materials. The workshop is intended to be a participatory one at the end of which draft texts will be available. The texts will, however, be completed after the workshop, with the possibility of the writer seeking for additional content materials. An ODL specialist will lead the workshop since the field will be new to the content developers identified.

ODL course development principles such as:

- preparing course outlines and arranging them in a logical order;
- moving from simple to complex issues, basing content on the learners' experience;
- aiming at active learning by motivating learners through activities to be performed;
- using simple language and explaining new words;
- using the interactive, user friendly and personal style, like the use of "we" and "you" instead of the inactive and impersonal style;
- using illustrations to explain points;
- providing summaries of each section to enable the learner revise.

A pre-test is crucial, and will be carried out in a nearby district, say Sunyani or Kintampo. After the necessary review, the instructional materials will be reproduced and programme delivery will commence.

### **Support System**

In order to minimize the dropout rate, monthly face-to-face support sessions over the six-month delivery period have been incorporated in the project design. It is hoped that such

monthly meetings will increase interaction between the project staff and the AEsAs, and therefore reduce isolation and loneliness the lead to drop out.

The roles of District Directors of Agriculture and the staff of the Crops Research Institute (CRI) are crucial by way of helping the AEsAs to learn effectively. The library at CRI and the Information Support Unit of MOFA should also be seen as important resource centres to be used by the AEsAs. The AEsAs should be advised to seek support from capable people they trust to support them in their localities.

Those involved in the support system need to be given an insight into their responsibilities so that they adopt the right attitude towards the task. Their task will involve professional support as well as counseling the learners on study skills and management of social problems that affect their learning. The field support staff will also be used to monitor programme delivery.

### **Sustainability**

Sustainability is a very important issue that the team considered. It was felt that if good results are achieved during the pilot, we should build on it and perhaps rope in AEsAs other areas. The project is a needs oriented one and not technology driven. A needs assessment will determine what we focus on in other areas. As much effort as possible is to be invested in the project to demonstrate to the Ghana Ministry of Food and Agriculture that it can enhance the professional capacity of its extension officers through ODL methods and materials. This could be a cheaper and more effective means than

conventional approaches to keep staff abreast of information they require for their work in the field.

The ODL idea will be sold to Ministries, Departments and Agencies (MDAs), development partners and non-governmental agencies for collaboration to use ODL on a wider scale to meet various learning needs in the Ghanaian society. It is hoped that agencies using conventional approaches will see the advantage in using ODL for delivering continuing education courses.

### **Conclusion**

We welcome comments from the ODL fraternity to improve the programme design and the work plan to achieve good results. Good results will lead to the use of similar methods to address other pressing issues in agriculture, like food storage and preservation, environmental conservation and the cultivation of all kinds of food to put us on course to achieving the ultimate goal of food security. Ghana has declared to be a highly indebted poor country (HIPC). Without food security, it will be forced to use its scarce resources to import food. This will further push the country into debt and paint an unfavourable picture of the people. All efforts need to be made for the citizens to grow what they eat, reduce imports and ensure food security at all times.

## References

Bates, A, 1995: *Technology, Open Learning and Distance Education*, Routledge, London.

Gachuhi, D. and Matiru, B. (eds.), 1989: *Handbook for Designing and Writing Distance Education Materials*.

Ghana Statistical Service, 2000: *Ghana Living Standards Survey Report 4*, Accra

Harrington, F.H., 1977: *The Future of Adult Education*. Jossey-Bass Limited, London.

Keegan, D., 1996: *Foundations of distance education*, Croom Helm, London.

Rowntree, D., 1992: *Exploring Open and Distance Learning*, Kogan Page, London.

Schramm, W et al, 1967: *The new media: memo to educational planners*, Unesco/IIEP, Paris.

Verduin J.R and Clark, Thomas A, 1991: *Distance Education: The Foundations of Effective Practice*, Jossey-Bass Publishers, Oxford.