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CASE STUDY

Lessons from working with the Technical Centre for Agricultural and Rural Cooperation: the case of the Ghana-Question and Answer Service

Joel Sam

In Ghana from 2000 to 2011, the Council for Scientific and Industrial Research-Institute for Scientific and Technological Information (CSIR-INSTI) with technical and financial support from the ACP-EU Technical Centre for Agricultural and Rural Cooperation (CTA), implemented the Question and Answer Service (QAS) to contribute towards the country's developmental goal of achieving national food security and sustainable livelihoods. The overall objective of the QAS was to contribute towards improved agricultural productivity, food security and rural livelihoods through effective management and dissemination of agricultural information. The service impacted positively by way of timely, relevant and current information provision leading to the adoption of improved technologies by farmers and fisherfolks, improved teaching and learning, and better research outcomes by the scientists and the embedding of QAS in the activities of CSIR-INSTI. Formal partnerships with local and international organizations were formed. As a result of the Ghana-QAS, CSIR-INSTI had the opportunity to work with development agencies in the management of agricultural information products and services. The study concludes with CTA's lasting legacy in terms of value propositions with respect to its unique approach in supporting partnership building and organizational learning/adapting strategies to address new challenges which ensured the success of the project.

Keywords: information and communication technologies; agricultural development; question and answer services; agricultural information; information services; Ghana

Introduction

The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention by African, Caribbean and Pacific (ACP) states and the European Union states. From June 2000, CTA operated under the Cotonou Agreement and its mission as

described in Article 3 of Annex III of the agreement was 'to strengthen policy and institutional capacity development and information and communication management capacities of ACP agricultural and rural development organizations'. The Centre was therefore expected to 'develop and provide information services as well as ensure better access to research, training and innovations, and develop and reinforce ACP capacities…' (Mukhebi-Barasa, Niang and Traore, 2001). A major issue for CTA was how to ensure effectiveness of its operations as required in its new mission.

Origin of the Question and Answer Service (QAS)

Following the establishment of the CTA in 1983, a meeting of delegates was held in Wageningen in 1984 to develop CTA's framework of operation. The meeting recommended that CTA collect, collate and distribute information to satisfy information needs. A follow-up meeting in Montpellier, France, further recommended that CTA offer various documentation services, including bibliographic searches, retrospective studies and selective dissemination of information, to ACP partners. Consequently, CTA established a question-and-answer service (QAS) in 1985 to provide information and documentation services to ACP partners on demand. This service operated from Wageningen in the Netherlands and relied on in-house library resources and expertise, other major online databases and CD-ROMs, and contact with external specialized European information services. Initially the purpose of QAS was to serve as a conduit between the European community and the ACP countries, so that the extensive information of European countries could become freely available to ACP users. By 1997 the average annual number of requests was approximately 1500 enquiries from researchers, farmers, planners, factory workers and others on a wide range of topics in agriculture and related fields (Mukhebi-Barasa, Niang and Traore, 2001). A 1997 CTA evaluation of QAS recognized the increasing competence of ACP information managers and the need to switch resources from general improvement of access to information to more specific strengthening of ACP capacity in information and communication management. The evaluation also established that although QAS was useful, there were problems with cost-effectiveness, timeliness and completeness of answers. The main conclusion was that the QAS function of CTA should be substantially devolved to appropriate sites in ACP countries over a two- to three-year period (Mukhebi-Barasa, Niang and Traore, 2001).

Devolution of QAS

Subsequent to the evaluation, CTA developed a strategy for devolving QAS, which began in 1997 and favoured developing regional QAS, and the need to promote regional networking activities and regional and linguistic considerations (Mukhebi-Barasa, Niang and Traore, 2001). During March 1997, CTA scrutinized various institutions in southern Africa to find a suitable

location for the service in the region. The University of the Free State was selected as the leading institution, with the South African Agricultural Research Council and the South African Bibliographical and Information Network (SABINET) as back up sites (van Dyk and van Tonder, 2001). Following the success of the pilot project in southern Africa, CTA set up QAS centres in other ACP regions: eastern Africa (to cover Ethiopia, Kenya, Tanzania and Uganda), Mauritius (Indian Ocean countries), the Caribbean and the Pacific. In Central and West Africa, QAS centres were established in Benin, Cameroon, Chad, Cote d'Ivoire, Gabon, Ghana, Mali, Niger and Nigeria. The centres in Samoa covered all the Pacific ACP countries (Sam and Verster, 2006).

QAS in Ghana, called the Ghana Agricultural Information Service (GAINS), was established following a study commissioned by CTA in June 1999 to identify an agriculturally-based institution with an information facility that had the potential to provide such a service. In accordance with the recommendations of the study, the Institute for Scientific and Technological Information (INSTI) was selected as the focal point for delivering the service to Ghanaian agricultural actors. The service was launched in February 2000; and it was followed by the signing of a formal contract in March 2000. The service aimed at improving the networking activities, developing partnerships, providing advisory services, and offering training in information handling skills (Sam, 2001).

Development of Ghana-Question and Answer Service: 2000-2005

It was recognized from the outset that the design of a system for providing information should be based directly on the needs of the identified potential clients. To gather basic information on client needs, a questionnaire was administered to actual and potential users of GAINS from mid-March to end of April 2000. The survey results were analyzed to determine the format and medium of communication that users preferred to ensure that the future of GAINS reflected those needs. The questionnaire was also used in the pilot as a promotional tool to stimulate potential users to think about the service and to direct their expectations. It also enabled the service to register users and include them on the mailing list. The GAINS study clearly demonstrated that the need for information was critical to users and that they preferred journal articles that were timely and relevant. Respondents also indicated a willingness to pay a modest fee for the services. The result of the information needs study formed the basis for developing the service (Sam and Verster, 2006). The results of the information needs study formed the basis for developing the Ghana-QAS and was expected to be a regular feature for new users, but that

was not the case in actual practice due to lack of capacity of the librarians of the partner institutions and financial difficulties to carry out the regular needs assessment.

Implementation of Ghana-Question and Answer Service

As part of the implementation strategy of the Ghana-QAS, the GAINS Coordinating Centre interacted with the partners at the various levels to explain to them the objectives and operation of QAS, particularly:

- the expected role of the partners
  the work processes and flows
- the type of questions answered or considered appropriate for QAS
- the commitment to provide an efficient and effective time-bound service
- the goal to provide up-to-date information
- the goal of reducing the cost of information (Sam, 2001).

The Ghana-QAS project involved a large network of partner organizations. Each partner was responsible for promoting the QAS within their locality, encouraging people to use the service, receiving and documenting questions and responding to them. In situations where questions received could not be answered based on the resources at any of the partner institutions, they were forwarded to the relevant partner institutions depending on the topic/theme of the question. Questions were transferred between partners mainly by email and post as some partner organizations did not have telephones in their libraries.

Summary time path

The provision of the CTA supported Question and Answer Service (QAS) in Ghana begun in March 2000 and ended in July 2011 after the seventh phase of the project. Each phase ran between 4 months to 12 months during which period, GAINS responded to 5471 requests for information from 3070 users (researchers, farmers, lecturers/teachers and students). During the first phase of the project (2000-2001), GAINS provided answers to 748 questions which was higher than the set target of 150 questions. The second phase (2001-2002) responded to 698 questions against a projected figure of 750. It was during this phase that the service was extended to extension workers, farmers and fisher folks. In the course of the third phase (2003-2004), emphasis was once more put on meeting the information needs of farmers and fisher folks as well as extension agents through radio and the Agriculture Information Centres (AICs). Research scientists and academia were served through the Coordinating Centre and other partner institutions using databases provided by CTA as well as local databases. In all CSIR-INSTI responded to 734 questions during this phase. Under the fourth phase (2004-2005) which started

in April 2004, the Ghana-QAS project answered 714 questions. In implementing the fifth phase (August 2006 to July 2007) of the project, a total of one thousand three hundred and forty-one (1341) users made use of the service. One thousand seven hundred and fifty-eight (1758) requests were received and responded to against the projected figure of eight hundred (800) from researchers, farmers, lecturers/teachers and students. Majority of the users were farmers (801), an indication of the success of the outreach programmes of the agricultural information centres and the radio programmes.

The 6th phase (2008) of the Ghana-QAS project was undertaken within 4 months. The short project duration made it difficult to efficiently mobilize QAS partner organizations. 120 questions were answered from 80 users against the projected 200 questions for this phase of the project. Between November 2010 and July 2011 when the seventh phase of the project was implemented, a total of three hundred and thirty-one (331) users made use of the service. Six hundred and sixty-nine (669) requests were received and responded to against the projected figure of eight hundred (800).

Information provision

The Question and Answer Service was intended to allow stakeholders in agricultural development to access information services on demand in the form of responses from researchers, bibliographic references, and full text documents. The partner institutions were also to have the necessary information resources (books, journals, online databases, computers, internet connectivity) to be able to provide current information in a timely manner. The concept of information provision used in the implementation of the project relates to the type of information requests considered appropriate for QAS, the efficient, effective time-bound service and current information provided, how the information provided is documented for future use. It also involves the challenges and issues that evolved and how they were addressed through diversification of service, addressing diversity, partnership building, capacity building, change of implementation strategy, evaluations, needs assessment. This approach is demonstrated in the case study presented which describes the actions, interventions and strategies adopted with the active support and encouragement of CTA to have a successful project. The paper concludes with a presentation of lessons learned, other benefits of Ghana-QAS implementation and CTA's lasting legacy in terms of value propositions with respect to its unique approach in supporting partnership building and organizational learning/adapting strategies to address new challenges which ensured the success of the project.

Change in implementation strategy and addressing diversity: 2005 onwards

Towards the end of 2005, it was realized that requests from the research community were gradually reducing. Therefore, GAINS embarked on an outreach programme in the research community, interacting on a one-on-one basis, to assess their information needs. The study revealed that researchers preferred a more regular flow of information on specific topics. However, most of them did not know where to obtain information. It was suggested that GAINS take a more proactive approach in information delivery rather than expect the scientists to ask questions. This suggestion was counter to the demand-driven QAS approach but was taken into consideration towards the development of the service. The service from then on moved from its demand-driven nature to a supply-driven one which required additional human and material resources. The CTA supported the service by providing the material resources for the partner institutes. This is a case of willingness to learn and adapt resulting in strategy refresh by the partners.

During the same period (2005), targeted marketing was carried out to user groups with low usage statistics such as female scientists. The service also realized that whenever there was any training in information management and related issues, male scientists were more often than not nominated to attend to the neglect of female scientists. In this regard, with the technical and financial support of CTA, a sensitization seminar was organized for seventeen female research scientists of the CSIR to encourage them make full use of the information facilities at the Coordinating Centre. This is an example of CTA's support for organizational learning /adapting strategy to address new challenges observed during project implementation.

The project undertook a needs assessment survey for extension officers in 2003 in order to provide them with the requisite information to enable them undertake their role as intermediaries between the research scientists and farmers. Again, it was realized that the information needs of the various stakeholders were changing due to changes in the way agriculture is practiced and changing demands. It was therefore necessary to assess the information needs of extension agents and provide them with the requisite information so that they could more appropriately meet the information needs of the numerous smallholder farmers they served. It was also a strategy used to reach out to the farmers and fisherfolks in a timely manner with information in appropriate formats. The Ghana-QAS undertook a further information needs assessment with the technical and financial support of CTA in 2005 to determine the best ways to support linkages between research and extension agents, and held a stakeholder workshop in November 2006 to discuss how to reposition itself in order to increase its usefulness to non-research stakeholders and to increase participation. The workshop allowed stakeholders to contribute their views on the

need to create a coordinating centre in each of the agro-ecological zones in the country as a way of reaching non-research stakeholders. The effort to become a resource for non-research research stakeholders tie into Government efforts to improve linkages between agricultural research and extension, in response to concerns that Ghanaian agricultural research was not contributing effectively to Ghana's agricultural development.

In early 2006 there was an internal review of the project from March 2000 to March 2005 and this revealed that report writing and provision of usage statistics remained an issue for partner institutes. Following discussions with the partner institutes and CTA to develop the next phase of the project in 2006, a number of issues were taken into consideration, activities undertaken and decisions taken, among which were the following:

- CTA undertook missions to Ghana to provide technical support in the submission of reports and developed reporting templates
- CTA held a major capacity building workshop for QAS partners in ACP countries in the Netherlands in March 2006. CSIR-INSTI was represented by 3 staff members including the accountant responsible for the management of QAS funds.

As a result of these discussions and interventions, the proposal for the fifth phase reflected the lessons learnt at the March 2006 project review workshop such as the need for properly reporting and documenting activities, regular needs assessment, the gathering of impact data and the need to contribute to the sustainability of the project by integrating it into the national agricultural information project, GAINS.

A significant achievement of the fifth phase (2006-2007) was that some of the partners (Radio Peace, University for Development Studies (UDS), Oil Palm Research Institute (OPRI) and the Agricultural Information Centre (AIC) at Agona Swedru reported on their activities. Radio Peace reported on development of programme content through community consultation at the local level, how the findings at the community consultation are analyzed and synthesized to form the basis for the topic/issue to be discussed and the recruitment of resource persons. The topics/issues discussed were reported on, the questions and the responses during the phone-in segment of the programme were included in the report. They also reported on how the phone-in facility from listeners provide a good feedback mechanism to evaluate the programme and also receive follow-up of related questions. Additionally, it was reported that prior to working on the project, the radio station was not keeping track of issues discussed and recording them for future use. However, with their involvement in the project, they now keep record of questions and responses for future use. With respect to the UDS and OPRI, they reported on the increasing use

of their facilities by lecturers, students and research scientists for teaching, learning, research and grant proposal writing. This was attributed to the fact that they received direct support from the project in terms of resource acquisition, short training on report writing and maintenance of library statistics.

An Information Outreach and Impact Review (INFOIR) of CTA products and services, including the QAS conducted in 2008 and revealed goodwill and interest in the QAS by users and partners. Case studies were carried out in 10 countries, Ghana being one of them. The feedback workshop held at CTA ranked the QAS as an area of high impact with growth potential. Some issues, however, needed to be taken into consideration such as the limited capacity of some partners to manage the service and/or implement a significant level of activity and the inappropriate location of some QAS centres, taking into account the revised objective of reaching farmers and extension agents as the direct beneficiaries of the service. In line with INFOIR findings, 2 main approaches were applied to QAS projects that were receiving support from CTA prior to the external evaluation of the project: strengthening of QAS activities of partners that were performing well; and experimenting with some of these partners on the use of methods that increase the outreach of Questions and Answers, such as the use of mass communication channels, including radio.

The Ghana-QAS project fitted into both categories. It was on the basis of this that the 7th phase (2010-2011) of the Ghana-QAS project was developed and implemented. This phase of the project sought to contribute towards the country's developmental goal of achieving national food security and sustainable livelihoods. The challenge was how to improve accessibility to information to support the activities of farmers, fisherfolks and extension agents in the country through the timely provision of information and the use of appropriate communication tools and channels. More specifically, the 7th phase of the project aimed to: increase the number of people using and benefitting from the service particularly farmers and fisherfolks; and improve the quality of responses and better respond to questions that interest the masses.

A significant activity of the final phase of the service in 2011 was the conduct of a kick-off workshop and training programme for twenty-five partners on QAS Management and Report Writing to sharpen the knowledge and skills of partners in QAS methodologies and proper presentation of reports. Although some of the institutions had been with the project since its inception, high rate of staff attrition informed the decision to conduct the training programme in order for the new staff managing the service to fully understand the purpose of the project and what was expected of them in terms of proper documentation and reporting of project activities. A database developed to document questions and responses for re-use to save time and resources

was made available to all the partners during the kick-off workshop to assist them in keeping record of their QAS.

Partnership building

An important activity of the fifth phase (2006-2007) was a workshop for national stakeholders in November 2006 to "identify mechanisms to best address the information needs of all agricultural stakeholders in Ghana". Specifically, participants wanted to develop a clearer vision and strategy for the 'next generation' GAINS (Ballantyne, 2006). The workshop was supported by the CTA, FAO, and IICD. Each of these organizations was represented and had provided material and intellectual support to GAINS prior to and after the workshop for a number of years. As a result of the workshop CSIR-INSTI signed a letter of agreement with FAO (US$ 240,000) for a 3-year period (2007 – 2010) to develop open access to public domain scientific and technical information on agriculture through interlinked full-text repositories at institutional level as part of a Ghanaian national agricultural science and technology information system.

Promoting the QAS

Promotional activities were an important element in the success of the QAS. From the inception of the service, promotion directed at target groups, namely: researchers, lecturers, students, farmers, fisherfolks and extension agents were considered an important aspect of the service. Initially the service concentrated its efforts on the traditional users of its facilities (researchers, lecturers, and students). Promotional materials developed included brochures, newsletters, posters, newspaper articles, radio broadcasts and websites. The brochures were developed to promote the service to users and potential users. The brochure provided details on the background, goals, users, activities of the service. They were distributed to clients on the mailing list and to participants at meetings, seminars, exhibitions, conferences and workshops.

The service also produced a quarterly newsletter (***GAINSNEWS***) that was distributed to clients on its mailing list and other institutional subscribers. The newsletter contained articles on a variety of issues that reflected the interests of all the user categories as well as major QAS activities. Frequently Asked Questions (FAQs) and their answers were sometimes published in *GAINSNEWS* as a means of sharing questions and answers with a broader audience. The questions submitted to the service and their responses are filed (hardcopy) and it is from the files that FAQs are identified. As the implementation of the project progressed, the partners realized that in order to save time and cost, it was necessary to document the FAQs and their responses and shared with all the partners. In 2010, this activity was started by the coordinating centre so a database was developed to keep record of QAS questions that were filed together with their responses. The database was a valuable tool particularly in identifying FAQs. It was made available to all the partners in 2010 during the kick-off workshop to assist them in keeping

record of their QAS. The service started to analyze the questions on a regular basis to feed into the decision-making process of Ghana's Agriculture Research and Development (ARD). The newsletter included request forms to enable clients to request for information. The effectiveness of the newsletter was borne out of the number of requests based on articles in it. These requests were received via the request form included in the newsletter.

The Ghana-QAS also produced and distributed posters as part of its promotional strategy. During the pilot phase (1st phase) an announcement was placed in the two national dailies (***Daily Graphic and Ghanaian Times***) in Ghana on how to contact and use the service. This was particularly useful in targeting potential users outside the CSIR, the parent organisation of the Coordinating Centre. As part of its continuing efforts to create awareness of the service and encourage the use of the service a dedicated website (http://www.gains.org.gh) was developed. It contained information on the service and its partners, contacts and links to vital agricultural websites, how to use the service, the newsletter and an online request form. Three in-house databases: Ghana Agricultural Research Information (GHAGRI), Ghana Science Abstract (GHASAB) and Agricultural Experts in Ghana (AGRIEX) were uploaded on the website. The website was a good promotional tool for the service, and 8457 people visited the site between November 2010 and July 2011. The breakdown of the usage statistics is shown in the graph below.

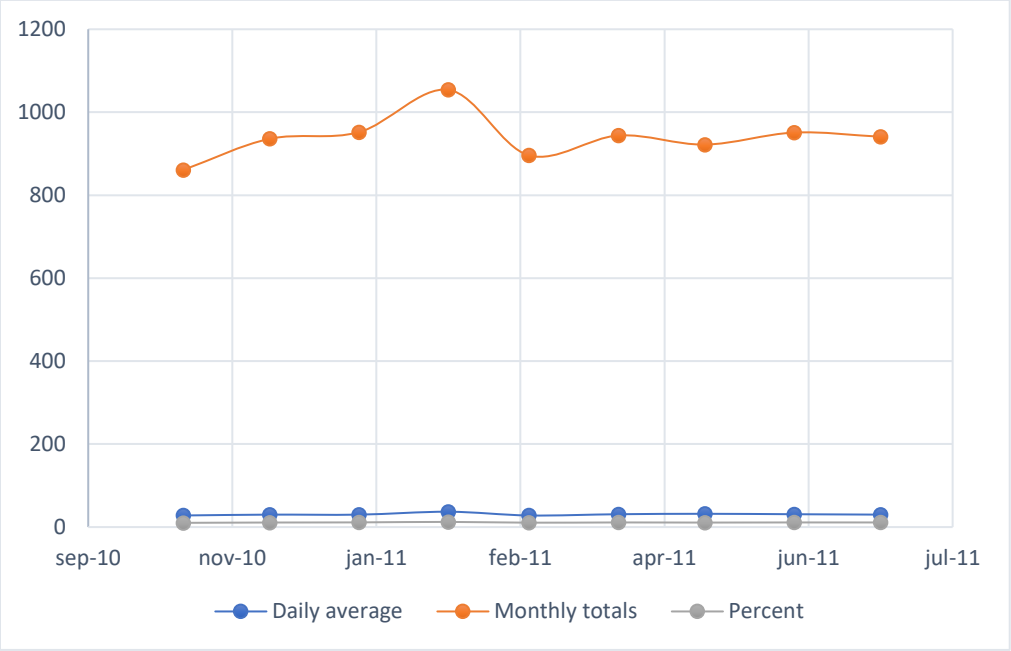

Figure 1: Usage of Ghana-QAS website November 2010-July 2011[1]

The usage statistics as shown in above graph (Figure1) showed how useful the website was as a source of information and how important a role it played in information provision as connectivity and access improved.

Use of radio programmes and information repackaging

The use of radio to deliver the service was not envisaged during the project design/conception phase but had to be incorporated during implementation in order to reach out and serve the needs of farmers and fishermen to provide information in formats that suit their needs. Radio was identified as a tool via which the information needs of farmers and fisherfolks could be met. The Frequently Asked Questions (FAQs) that the project received revealed recurring grass root problems in the country. FAQs allowed for the identification of (i) agricultural issues that could be addressed by scientists, policy-makers and other stakeholders, and (ii) priority information needs of the larger farming and fishing community. Once the priority information needs of the farming and fishing community were identified both from Questions received by partners and from community consultation in the catchment areas of the radio stations, topics were selected for the development of radio programmes by CSIR-INSTI in collaboration with the radios based on these findings. Radio programmes thus increased the outreach of responses to FAQs.

The repackaging of information into radio programmes started in 2004 with Radio Peace, a Community-based FM station in Winneba in the Central region of Ghana. Initial studies carried out by the Ghana-QAS project found out that it was better to work with Community-based FM stations as they broadcasted programmes in local languages understood by farmers and fisherfolks. It was also found to be more viable economically to work with community-based FM stations as opposed to the national broadcasting station. There were ten operational community-based FM stations in Ghana in the early 2000s during the implementation of the project. Through discussions with the ten radio stations, it was observed that 4 stations (Radio Peace, Royals FM, Rite FM, Lorlonyo FM) had the capacity to develop and produce tailor-made agricultural radio programmes to empower farmers and fishermen with relevant agricultural best practices. The 4 radio stations were also found to be very committed to agricultural development.

The Ghana-QAS worked closely with four community-based FM radio stations, namely: Radio Peace (Central region), Royals FM (Brong Ahafo region), Lorlonyo FM (Volta Region) and Rite FM (Eastern region). The radio programmes were aired in 4 local languages (Asante-Twi, Ewe, Fante and Krobo). There was a phone-in facility where farmers and fishermen called into the programme and had their questions answered by experts in the studio. Farmers and fishermen who did not have the means or know-how to call into programmes were encouraged to visit the radio stations with their problems or success stories so that it could be shared with a wider community. The phone-in facility was also a good feedback mechanism to evaluate the

programme and also receive follow-up of related questions. It also made the programme more participatory, interesting and widened the listenership.

Experts who assisted in developing and hosting the radio programmes were drawn from the CSIR, universities, and extension agents. In a few instances, farmers and or farmer-based organisations who adopted improved technologies volunteered to share their experiences. For example, the Cashew Farmers Association of Wenchi in the catchment area of Royals FM in 2010 requested to be provided the platform to share their experiences with other farmers who wanted to venture into cashew production. The gesture was deemed to be very good as it was a departure from the widely held view locally that farmers are reluctant to share their rich experience with others. The feedback from listeners to the presentation was overwhelming (CSIR-INSTI, 2011). CTA's Rural Radio Resource Packs were utilised for relevant topics produced for some programmes. The programmes were broadcasted every 2 weeks for one hour with a repeat broadcast the following week. Copies of all the radio programmes were provided to CTA for uploading onto its virtual library "Anancy".

In April 2011, an assessment of Rite FM agricultural programmes was undertaken to determine the impact of agricultural radio programmes on the target audience (farmers and fishermen). The programme was found to be relevant to the agricultural information needs of the respondents and had the desired impact on the listeners. However, the time of broadcast was a constraint to most of the listeners. Earlier in 2009, Radio Peace undertook a similar study and the results indicated improved livelihood of the target audience (farmers and fishermen) by way of improved production practices, adoption of improved technologies and the setting up of new businesses (agro-chemical shops) to supplement their farm income (Dzandu, Osei and Sam, 2012). CSIR-INSTI established contracts with the radio stations and ensured that they submitted reports on: the process of developing the programmes, challenges faced, titles and summary of radio programmes, any feedback they may have received during broadcasts, what additional questions the experts had to respond to during the broadcasts, follow-up undertaken after the programmes, feedback if any of the broadcasts and recommendations.

Through the financial support of CTA, twenty *tongshi radio* receivers were acquired in 2008 and distributed to assist the partners to facilitate access to agricultural research and development information available via digital satellite broadcasts for QAS partners. Personnel of the beneficiary institutions were trained on the installation of the equipment and downloading of information. The information downloaded was then disseminated to the various stakeholders to meet their information needs. The radio programmes assisted in promoting food security in the country, introduced farmers and fishermen to new and improved varieties of crops, improved

fishing practices and fishing resources, marketing skills, financial management, proper storage practices to reduce post-harvest losses, proper and beneficial uses of fertilizers, good agronomic practices, pest and disease control of crops (CSIR-INSTI, 2011).

A significant achievement of the QAS radio programmes was that the President and the Vice-President of Ghana cut the sod at Mumford and Winneba in the Central region respectively in 2008 for landing sites for the fishing communities as a result of the programmes which strongly highlighted the needs of the fishing communities. The construction of landing sites at the beaches along the southern border of the country from Axim in the Western region to Keta in the Volta region was also given priority attention by successive governments. Fishing issues received greater government attention through resourcing the Ghana Navy and the Marine Guards of the Maritime Authority to police the water bodies against the use of unapproved fishing vessels (pair trawlers), fishing nets, use of dynamites and or chemicals to fish.

Since the inception of Ghana-QAS in March 2000, the Essential Electronic Agricultural Library (TEEAL) database was found to be a very relevant source for providing information to users. In order to expand the base and to serve more clients, a new set of LAN TEEAL was acquired for the Kwame Nkrumah University of Science and Technology (KNUST) to complement that of the University for Development Studies (UDS) to serve clients in the northern part of the country.

The Ghana-QAS Coordinating Centre duplicated more of the agricultural technologies produced by the CSIR 'Technology for Livelihoods' programme and converted them from VHS cassettes to DVD with the financial support of CTA and distributed to some of the functional Agricultural Information Centres (AICs) of the Ministry of Food and Agriculture (MoFA) and community radio stations which broadcast agricultural programmes (Dzandu, Osei and Sam, 2012).

External evaluation of QAS

There was an external evaluation of CTA's QAS in ACP countries in 2011 of which Ghana was part. The evaluation of the QAS was requested by CTA's management for the following reasons:

- The QAS is one of the longest running services at CTA and has not been subject to a detailed evaluation in recent times;
- Rapidly evolving information and communication technologies (ICTs) and changes in the policy environments in ACP countries begs the question regarding the mode of delivery of agriculture-related information;
- Limited budgets and increased demand for CTA's products and services, means that critical decisions needed to be made regarding the most effective and efficient use of funds;

- CTA has embarked upon the planning exercise for the development of the Centre's strategic plan for the 2011–2015 period. The findings from this evaluation will feed into the strategic planning process (Batjes-Sinclair, 2011).

The overall objective of the evaluation was threefold:

- to evaluate the impact and sustainability of CTA's QAS in its classical format;
- to undertake a comparative analysis of the different experimental approaches used for QAS delivery, paying particular attention to cost, consistency, efficiency and up-scaling opportunities;
- to provide insights into how the experimental QAS approaches such as the use of mobile phones, radio, agricultural newspapers and newsletters, and vouchers, could complement the delivery of information through rural advisory services (Batjes-Sinclair, 2011).

The consultant worked with a local advisory committee in Ghana in the course of the evaluation of the Ghana-QAS. Data was obtained through individual Interviews from a range of stakeholders – farmers, extension agents, researchers and a student. Non-users were also interviewed in an effort to capture other perspectives. A feature of the evaluation process was the participation of key stakeholders from the beginning to end of the evaluation visit, thereby offering an opportunity for those intimately involved in the provision of the service to reflect on the future direction of the QAS. A focus group was used to validate the evaluation findings. The key findings, conclusions and recommendations of the field visit to Ghana within the context of the CTA external evaluation of the question-and-answer service are summarized below:

Findings

- QAS management and staff and users interviewed, value information that is easy to access, timely, up-to-date, relevant and appropriate.
- Both the field visit and interviews with QAS staff, 2 partners from the community radio station indicate there is good evidence of impact of the QAS
- There is general satisfaction among those interviewed with QAS answers in terms of the usefulness of the answers, presentation and timeliness.
- E-resources offered by the QAS are appreciated by all of the librarians, researchers and students interviewed. There is evidence that access to these resources has enabled the publication of local content material for use within the farming community, e.g., research done on the grasscutter.

Conclusions

- The evaluation process offered the opportunity for QAS management and staff and key stakeholders to reflect on the QAS, its current operations, develop ways to overcome challenges encountered in the implementation of the QAS as well as develop strategies for future action.
- Although ICT use is growing slowly, the use of mobile phones is steadily increasing, thereby opening up opportunities for the provision of agricultural information.
- CTA plays an enabling role in the provision of rural advisory services in Ghana

Recommendations

- QAS staff should systematically document data on the QAS and the record of impact stories.
- INSTI and radio stations should actively find ways to diversify the funding sources of their QAS and reduce their dependence on CTA funding. Respondents indicated that they would be willing to contribute to the costs of information provision, providing it was not prohibitive. CTA can facilitate the process by way of continuing its support to the QAS and radio stations in the medium-term and facilitate discussions locally and regionally in an effort to set up mechanisms to support the QAS.
- The QAS should make efforts to collaborate with all the eleven district agricultural information centres (AICs) of the MoFA. Such collaboration will assist greatly in reaching a significant number of the farmers and fishermen in a cost-effective manner. Attempts should also be made to work with the Community Information Centres (CICs) scattered around the country, most of which are in the rural areas where majority of the farmers are.
- CTA should use a key partner (e.g. INSTI) to channel all its development assistance in Ghana.
- CTA should provide assistance to QAS partners to enable them to provide practical information to extension agents and farmers from research materials that are of relevance to them- including funding the translation of practical materials into local languages and provide documentation on FAQs.
- CTA should play an important role in facilitating discussions between MoFA and INSTI and other rural advisory services at the policy level to enhance in a coordinated and more efficient way of providing agricultural information to extension agents and farmers.
- CTA in collaboration with other development agencies should support strengthening the capacity of researchers, librarians, extension officers and farmers, and post-graduate students in the storage, management and use of the databases (Batjes-Sinclair, 2011).

Challenges in the implementation of Ghana-QAS

In the course of the implementation of the Ghana-QAS, the service faced a couple of challenges, namely:

- Lack of adequate staff, information resources and unreliable internet connectivity in some partner institutions hampered the use of e-resources. Staff turnover at some of the partner institutes affected the operations of the service as it took some time for new staff to be employed and trained in QAS methodologies
- Finding staff with core competencies and sufficiently motivated to provide technical support to facilitate the information delivery service at the partner institutions was a major challenge for the service
- Proper documentation of the services provided and writing of reports was very challenging for most of the partner institutions in spite of the fact that a training course on report writing was run for most information professionals engaged in the management of the QAS. This made the consolidation of the reports very difficult for the national QAS centre
- Poor internet connectivity affected communication between partners and also with the users of the service resulting in long delays in retrieving online information
- In most cases partner institutes had limited computers which were used both for administrative and core information retrieval services and this delayed responses to user enquiries. Additionally, disc space of most computers was limited so some of the partner institutes could not upload most of the local databases (GHAGRI, GHASAB).

Lessons learned and other benefits of Ghana-QAS implementation

In implementing the Ghana-QAS, a number of useful lessons were learned and benefits derived, namely:

Formal relationships

Prior to the implementation of Ghana-QAS, the Coordinating Centre of GAINS had informal relationships with several farmer organizations, which generally arose from the heads of organizations contacting GAINS for information requested by their members. With the support of CTA, the Ghana-QAS piloted more formal relationships with district agricultural information centres and community-based radio stations in an attempt to extend its QAS to end user stakeholders. Prior to this, GAINS had almost no formal relationships with communities or local government.

Development of radio programmes

Community radio was a very useful channel and cheaper means for reaching many farmers and fishermen in rural communities. The phone-in facility was a good feedback mechanism to evaluate the programme and also made it more participatory, interesting and widened the listenership. Role of information intermediaries (extension agents) in disseminating research findings to farmers was found to be very critical in the adoption of improved technologies

Commitment and collaboration

Commitment and collaboration of partners are key ingredients for the success of the service. Provision of information to agricultural stakeholders can be effective with the cooperation of various actors. There was, however, general recognition that no one institution or agency could meet the information needs of the numerous stakeholders in the agriculture sector. Collaboration with other development partners, for example, FAO, IICD and KIT in the development and management of agricultural information for stakeholders. Through the implementation of the QAS, CSIR-INSTI had the opportunity to work with these development agencies in the management of agricultural information products and services.

Promotion

Promotion of the service through outreach to the users, continuing education of users and potential users of the service on a regular basis was a key element in the success of the project.

Access to up-to-date information

Access to current and up-to-date electronic and paper information resources in a timely manner encouraged use of the service. There was improvement in Internet connectivity for some of the partner institutes.

Training and staff

Staff turnover at partner institutes affected the operations of the service, as it took more time to employ new staff and for them to grasp the QAS methods. It was therefore useful to train more staff to handle the service. However, very little could be done in situations where the libraries were manned by only one trained librarian. Training of key beneficiaries was crucial to the implementation of the project – *Tongshi* radio receivers and QAS management training. Also training of women scientists, in proposal writing, in report writing, etc. Experience in the management and organization of training programmes. Based on some of the lessons at each stage of the project, a number of collaborative training programmes and seminars were conducted which improved the skills of key project staff and other stakeholders (research scientists, lecturers) with the technical and financial support of CTA, namely:

- CTA/CSIR-INSTI Training Workshop on Web 2.0 for Agricultural and Rural Development (2011);
- Workshop on Information and Communication Management (2010);
- CTA Information and Knowledge for Development Week (2010);
- CTA/CSIR-INSTI Training Course on Scientific Data Management (2008);
- Agricultural Information Production with Satellite Receivers for Anglo-Phone Countries (2008).

Additionally, other very useful skills were learnt, namely: advanced information and knowledge management skills, monitoring and evaluation skills, report writing, proposal writing, writing for a journal and public speaking through formal and informal interactions with various categories of CTA staff during the decade of project implementation.

Evaluation and lessons learned

Evaluation of information services by clients was key to the development of the programme to serve the users better with timely, relevant and current to meet their information needs. Evaluation assisted the service in improving the timeliness of information delivery Monitoring and evaluation of information products and services was very crucial in the smooth implementation of the project. Documentation of the questions and answers for reuse when same questions are asked in future in order to reduce the time lag between questions and responses. The documentation of the questions and responses improved the time lag between request for and receipt of responses and also saved cost. Reluctance on the part of the users to pay for a token fee as administrative charges for the delivery of the service. They were used to receiving information services for free and did not see the reason why they should pay for it. Key lessons learnt at each phase in the implementation of the service was deployed to improve the next phase and imbedding of sustainability plans from the 5th phase of the project.

Conclusions

As noted earlier on, CTA established a QAS in 1985 to provide information and documentation services to ACP partners on demand. After the devolution of the QAS in 1997, CTA signed an initial agreement with Ghana in March 2000 to provide information on demand to agricultural stakeholders and also to improve networking activities, develop partnerships, provide advisory services, and offer training in information management skills. With the success of the pilot phase of the project after its conclusion in 2001, subsequent yearly contracts were signed with

adaptations owing to the service expanding. The service was invaluable and provided timely and up-to-date information to the various agricultural stakeholders.

The implementation of the QAS led to the formation of formal relationships with several farmer organizations, district agricultural information centres and community-based radio stations. Prior to this, GAINS had no formal relationships with communities or local government. Through the project, partnerships were developed with other development agencies (FAO, IICD, KIT) leading to improvement in agricultural information and knowledge management services. These formal linkages with other agricultural stakeholders led to the visibility of GAINS nationally, regionally and globally. A number of useful lessons were learned during the implementation of the service, namely: improved management of information services, proper documentation of questions and responses which led to cost saving, monitoring and evaluation of information products and services, administration of training programmes, proposal and report writing. These useful lessons have impacted positively on the management and administration of information provision to agricultural stakeholders in Ghana.

The enduring legacy of the Ghana-QAS CSIR-INSTI project of CTA is the very positive impact on the information value chain in the Ghanaian national system from information generation and retrieval to dissemination and institutional knowledge management. Years after the formal closure of the project, its impact on the system can still be felt by way of timely, relevant and current information provision leading to the adoption of improved technologies by farmers and fisherfolks, improved teaching and learning, and better research outcomes by the scientists and the embedding of QAS in the activities of CSIR-INSTI. Formal partnerships with local and international organizations were formed which enabled the Ghana-QAS, CSIR-INSTI to work with development agencies in the management of agricultural information products and services.

CTA's catalytic role in these developments will forever be remembered. This was in terms of value propositions with respect to its unique approach in supporting partnership building and organizational learning/adapting strategies to address new challenges which ensured the success of the project. Learning was demonstrated through the strategic changes that were introduced at different stages throughout the life of the project. The Ghana-QAS also benefitted from adopting a number of strategic measures with CTA support and encouragement, which included taking a more proactive approach to information delivery as opposed to being demand-driven; gradual diversification of target beneficiaries based on demand and feedback from needs assessments; adoption/use of channels of mass communication such as radio and the web for upscaling information dissemination. These changes were introduced to respond to challenges that the project was facing. With respect partnerships, CTA embraced multi-stakeholder collaboration,

provided technical and financial support, treated local institution (CSIR-INSTI and its partners) as an equal, no micromanagement of the project and encouraged working with other development partners in the information landscape.

About the author

Joel Sam is the Director of Research of the African Library and Information Associations and Institutions (AfLIA) with over 30 years working experience in research, academic and NGO environments. He previously worked as the Coordinator of the Ghana Agricultural Information Network System (GAINS) and Director of CSIR-Institute for Scientific and Technological Information (CSIR-INSTI). Joel holds a Doctor of Philosophy degree in Information Studies awarded by the University of Ghana, serves on the Management Board of Electronic Information for Libraries (EIFL) and the Immediate Past Chairperson of the Management Board of the Consortium of Academic and Research Libraries in Ghana (CARLIGH).
Email: egy28@yahoo.co.uk

References

Ballantyne, P. (2006). Enhancing the Impact of Agricultural Information Systems and Services in Ghana: Building the Next Generation of GAINS. Unpublished report of a CSIR-INSTI/CTA/FAO/IICD Meeting, 1-2 November 2006

Batjes-Sinclair, K. (2011). External Evaluation of CTA's Question and Answer Service: Ghana Country Report (Draft). Unpublished report presented to the Technical Centre for Agricultural and Rural Cooperation (CTA) of the Netherlands

CSIR-INSTI (2011). First report of phase 7 of Ghana-Question and Answer Service: November 2012-July 2011. Accra: CSIR-INSTI. Unpublished report presented to the Technical Centre for Agricultural and Rural Cooperation (CTA) of the Netherlands

Dzandu, L., SK Osei and J Sam (2012). The use of information and communication technologies (ICTs) in the dissemination of agricultural information to stakeholders: the Ghana Agricultural Information Network System (GAINS) experience, Ghana Library Journal 24(2), 20-31

Mukhebi-Barasa, D, T. Niang and K Troare (2001). CTA question and answer service. In: Adotevi, FJK, C. Entsua-Mensah and G. Caiquo eds., *Managing a question and answer service: lessons learnt*, Workshop proceedings, 23-27 April 2001, Accra, Ghana, 13-28.

Sam, J. (2001). Final report of phase one of Ghana-Question and Answer Service: March 2000-February 2001. Accra: CSIR-INSTI. Unpublished report presented to the Technical Centre for Agricultural and Rural Cooperation (CTA) of the Netherlands

Sam, J. and E. Verster (2006). Developing and managing question and answer services: challenges and lessons from PRAIS and GAINS, IAALD Quarterly Bulletin, LI, ¾, 239-247.

Van Dyk, H. and H. van Tonder (2001). Programme for agricultural information services in the SADC countries. In: Adotevi, FJK, C. Entsua-Mensah and G. Caiquo eds., *Managing a question and answer service: lessons learnt*, Workshop proceedings, 23-27 April 2001, Accra, Ghana, 31-39.

[1] Source: http://www.gains.org.gh.stats/stats.php/index.html