## *Final Draft*

# Appropriate ICT and the Farming Community in Developing Countries:

## Wider implications drawn from the Ugandan experience

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# Contents

# **Introduction**

Farmers in wealthy countries have access to a plethora of specialised information sources to assist them with all the technical aspects of farming and with the necessary market information they need to maximise their income. In order to compete globally and regionally, the agricultural sectors of developing countries also need to improve their access to such appropriate information.

Isolated rural communities in developing countries also have poor access to education and health advice. Modern communication systems could enable this significant proportion of the world's population to close the welfare gap with their counterparts in the industrialised world. Such systems need to not only to provide information but also to allow rural people to communicate their needs and experiences to each other and to those institutions and private sector organisations that can assist them in their commercial and social development.

Such innovations cannot, in themselves, provide the sources and processing of the information required by these communities. These systems must, therefore, be linked to other networks and information-providing organisations at the regional, national and international level. In addition, information provision can only take place in a legal and regulatory framework that allows the system to flourish and where it is sustained with adequate resources.

Many studies have concluded that radio still represents the most effective means of disseminating information to thinly dispersed farming communities in developing countries. Radio receivers are relatively inexpensive. Modern FM radio transmitters are also inexpensive enough to be financially viable even in poor countries. Radio broadcasts can be made in the local vernacular in areas where only one local language is spoken and radio broadcasting overcomes the difficulties presented by written media in areas with low rates of literacy.

Although access to modern electronic information and communication equipment has accelerating all over the world in the last few decades, hundreds of millions of people in rural areas of developing countries are too poor to acquire such equipment for themselves. Such communities can, however, benefit from the application of ICT either by gaining access to telephone networks or internet and e-mail-linked computers placed in a location within an accessible distance from their homes or, indirectly, by the use of ICT to enhance programming for radio broadcasts.

There are several important reasons why the need for agricultural communication systems has increased significantly over recent years.

● The liberalisation of agricultural markets in developing countries. State-controlled marketing boards, which once fixed commodity prices for extended periods of time, have

ceased to operate. The farmer, therefore, has to operate in more rapidly moving market conditions.

● In many countries, including Uganda, the market liberalisation process is far from complete. Market signals are distorted by lack of transparency and competition among traders.

● The implementation of agricultural development strategies designed to encourage subsistence farmers to generate income.

● Demand characteristics are changing rapidly as consumers seek a greater variety of higher quality agricultural commodities. The agricultural communities of these countries must adapt to these changing circumstances if they are to compete regionally and internationally. They cannot do this without being properly informed about which commodities are in demand, and how to produce them and market them.

● Modern ICT systems are widely utilised by trading companies thus widening the information gap between them and farmers who have no access to such technology. This puts farmers at a bargaining disadvantage with the traders, which reduces their share of the market value of their goods.

The task of establishing an effective and relevant means of allowing rural people to communicate with locations outside their immediate area and a means of providing them with the information that they need to thrive is very daunting. 1.6 billion people in developing countries make their living from the land. Most are too poor to afford communication devices other than a simple radio receiver. Few have the means to travel regularly more than a few miles. Most postal systems in these countries are poorly developed and literacy rates are low. The purchasing power of most agriculturists is so low that commercial sponsors and advertisers have little incentive to fund radio programming.

This report attempts to describe the nature and use of the various ICT and radio communication networks and systems in Uganda. Using this information, this report draws some conclusions about how the provision of information, which is of use to the rural community, could be improved by finding ways to integrate more closely these existing communication systems, establishing innovations in ICT/radio linkages and by providing a regulatory, administrative and institutional framework which encourages and sustains such systems.

A large number of agencies around the world offer many types of support for rural radio and other rural communication programmes. This report, therefore, gives a brief synopsis of the types of support on offer. The assistance of these organisations may well represent another method of improving these programmes in Uganda and in other parts of the world.

Many other developing countries are grappling with this problem and, although Uganda is in advance of many countries in Africa in this respect, it may be possible for Uganda to learn from the experience of other developing countries. For that reason, this report contains a short description of two recent projects in which a different approach has been taken towards the opportunities presented by modern ICT systems.

**Evidence for this report was collected in Uganda between 11th and 17th October 2004.**

# The Uganda experience

**Rural communication systems in Uganda - background**

Uganda presents particularly difficult challenges to those who wish to establish communication systems for and within its farming communities. Some 88% of the total population of 24 million live in rural areas dispersed fairly evenly over 240,000 square kilometres. (Some northern areas are thinly populated, however, due to conflict and climate conditions.) 30 different languages are spoken in the country and most languages have several dialects. Many Ugandans are proficient in only one language and although the average literacy rate is about 70%, the highest literacy rates are confined to urban areas. The *lingua franca*, English, is poorly understood by the majority of rural Ugandans.

The bulk of agricultural activity is carried out by small-scale farmers but some large farms and plantations (notably for sugar, cotton and tea) operate on a commercial scale.

The typical Ugandan farmer is too poor to afford modern communications equipment. Like many other benefits of the modern age, the acquisition and utilisation of ICT systems have been confined mainly to the elite sector of the population. In addition, the slow and often convoluted processes of some government and donor agencies make conditions far from ideal for planning and sustaining innovative information provision.

Despite these impediments, opportunities to design communication systems to assist Ugandan farmers and the wider rural community have increased enormously over the last few years. The application of this technology, however, has needed to be specially adapted and selected to overcome these problems.

Over the last five years the state broadcasting service (radio and television) has been commercialised and broadcasting licences have been issued to over 50 other radio stations, notably local FM radio stations, which have the option of broadcasting in the local vernacular. Approximately 90% of households own, or have access to, a radio receiver the cheapest of which cost around US$ 5. Radio broadcasts can be received on simple receivers in almost all parts of the country from one or more local stations.

Three companies have established mobile telephone networks in the country although reception is only available in more densely populated rural areas and in the main towns. At least 80% of the rural areas of the country are not covered by mobile telephone networks although the extent of coverage is expanding. Approximately 50,000 mobile phones are owned in Uganda. A mobile phone can be purchased for about US$ 50 and peak-time calls in urban areas cost about 1.5 US cents per minute rising to about 5 US cents in some rural areas.

Computer ownership is low (about 0.3% of the population or approximately 72,000 computers) but the country has only about 7,000 on-line internet accounts.

ICT systems and radio networks are widely utilised in Uganda by the private sector and by NGOs and government agencies to exchange information and to disseminate information on a wide range of subjects, including health and education, in radio broadcasts. Although many regional and international agencies provide various relevant sources of information, including radio programming, through audio, internet and other digital systems, utilising satellite transmission in some cases, little use is made of them in Ugandan rural radio programming.

Following government recommendations in its Plan for Modernisation of Agriculture (1999) - based partly on surveys carried out and reported on in the 1999 case study, Community Access to Marketing Opportunities – pilot projects were established by development agencies for the provision of agricultural market information in several districts of Uganda which utilise local FM radio broadcasting, the mobile phone networks and many forms of ICT, as part of the FOODNET programme. (FOODNET is a division of the International Institute of Tropical Agriculture operating in Uganda.) This service was integrated with a national and, later, a regional market information service (MIS).

In 2003 local agricultural market information provision was expanded, in accordance with the Plan for Modernisation of Agriculture (PMA). A new government agency, the National Agricultural Advisory Services (NAADS), was allocated the task by the government to establish this provision and this agency sub-contracted the task, on a six monthly renewable contract, to FOODNET. Under this arrangement local MIS coverage has been expanded to six more districts of the country – Arua, Kabale, Kibale, Mukono, Soroti and Tororo.

Despite these positive trends, most Ugandans are still very poorly informed about issues which are of vital importance to them. Some observers have attributed this shortcoming to the lack of proper integration and efficient utilisation of these existing information systems but inefficiencies in budgetary and administrative processes associated with these programmes continue to inhibit progress and to threaten their sustainability.

Local agricultural market information services

The provision of cost effective agricultural market information services requires the use of a wide range of ICT systems. These systems are an integral part of the design of agricultural market information systems in Uganda.

Briefly, MIS provides farmers and other stakeholders with a range of information which they need to maximise their income. Up-to-date prices and market conditions in both the markets most accessible to the target group and in larger wholesale markets represent the core component of MIS. (Although training on the use of MIS and other aspects of marketing are contained in the package.)

Local agents have to be employed to travel around these markets collecting price and other market data. These agents then have to report this data to an information processing centre (IPC). In Uganda, this is done by e-mail, fax or by Short Message Service (SMS) and voice via mobile telephone. Prices need to be compared day by day and season by season to determine price trends, all this data must be recorded in data banks where it can be processed. Price and other market information is disseminated by radio (although some other means, including written reports, are used). Price and other information bulletins then need to be prepared in a programming form which can be used by local or national radio stations.

In addition, the markets of many products produced in rural areas of Uganda are affected by demand and supply factors outside the immediate areas of local stakeholders. The sesame seed market is affected, for instance, by changes in supply in many producing countries and by changes in demand in consuming countries, notably in the Middle East and Japan. For this reason, sesame seed farmers in Uganda need to be aware of global price trends and other market factors. The IPC, therefore, needs to collect market information from many sources using various media and information transmission systems.

Relatively sophisticated, as this project appears, it still displays some important weaknesses.

● Radio broadcasts offering information at the local level do not cover the whole of the country.

● Broadcasts are not frequent enough - which affects the accuracy of price information especially for commodities with quickly moving market prices. Cost is the key constraint to making more frequent broadcasts.

● No proper feedback loop has been incorporated into the system which means that most stakeholders are unable to comment regularly on the service as to its accuracy or appropriateness. Opinion surveys are carried out but not on a thorough, methodical basis. Shortcomings in this area are mainly due to cost.

● Stakeholders lack participation in, and 'ownership' of, the system. This is partly due to the lack of appropriate skills in the countryside but also to the nature of the funding stream in which donors and government play the only significant role.

● The current service only provides spot price information for 28 of the major staple food crops and some livestock commodities. The service does not provide information on many cash crops, perishable crops, fish and certain niche market products such as herbs and spices.

● There are constant doubts over the sustainability of the project. Long term funding is the key constraint. Although lack of MIS has been identified as a key constraint to agricultural development by expert studies, the government and donor agencies, the long-

term funding problem has not yet been solved. Reliance on funding from commercial sponsors (many of whom are likely to be actors in agriculture) carries serious implications of possible editorial bias. Farmers are too poor to pay for the service themselves and an audience of poor farmers does not attract a great deal of radio programme advertising.

It is hoped that this examination of the successes and constraints of the cases outlined in this report will not only assist designers of rural communication provision in Uganda but also in other developing countries where similar challenges are found.

## Radio stations in Uganda serving the Rural Community

There are approximately 50 privately owned radio stations in Uganda broadcasting on FM wavebands. Some of them have only limited broadcasting schedules. Some of these stations broadcast almost exclusively religious material. Other stations cater for only the urban population but many are based in provincial towns and cities and cover most rural areas. The state-owned channel, Radio Uganda, has some FM broadcasting capacity but relies mainly on expensive and increasingly obsolete short and medium wave bands.

There is a limited range of programming. Music introduced by disc jockeys represents a high proportion of content. Messages about births marriages and deaths are very popular. Discussion group formats and interviews with experts or experienced individuals are used for both serious and entertainment subjects. A limited number of 'phone-in' and 'chat shows' are broadcast and many programmes include feed-back comments from listeners who communicate with the station by phone or by post. Although all stations have some form of pre-recording facilities, very few programmes made by non-station organisations are broadcast. The main exception is pre-recorded programmes used to support the anti-HIV/AIDS campaign.

Radio Uganda broadcasts in 24 different languages. Most privately-owned stations offer programming in only the one or two languages spoken in their coverage areas.

Most stations carry some form of public broadcasting material such as news, official messages, health and educational material, business advice and farm radio programmes but this type of programming represents only a tiny proportion of the output of most stations.

All private stations are financed by advertising and although the 'commercialisation' of Radio Uganda allows the organisation to raise income from advertising, it is still heavily subsidised by the state.

The Uganda Broadcasting Council (UBC), a body that regulates radio content, is about to submit a new broadcasting policy to the Office of the President. This policy document includes the proposal that all radio stations will be required to make sure that at least 20% of their output consists of public broadcasting. Failure to comply with this policy, which will be closely monitored, could result in the failure to renew the annual broadcasting

licence. UBC officials were confident that these regulations would come into effect at about the end of the year (2004).

In interviews many experts close to this industry expressed the view that, as in other countries where similar commitments were sought, most stations will find loopholes to avoid these regulations, however. This might be achieved by reinterpreting the meaning of public broadcasting or airing such programming in the middle of the night.

Recent International Labour Organisation (ILO) and NRI surveys of radio listeners throughout the country has shown, however, that 50% of listeners thought that there were too few radio programmes on agricultural and health issues. It maybe, therefore, that, using this information, programmers could receive more advertising sponsorship for this type of programming.

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**ILO survey on radio broadcasting**


The International Labour Organisation has recently conducted a survey on radio programming in Uganda as a channel to reach informal and micro-businesses. The survey was part of a project funded by the Swedish International Development Co-operation Agency (SIDA). The objectives of the project were to increase the number of programmes focusing on this topic, to improve the quality of such programmes and to expand the range of these services. In the Ugandan context micro and small enterprises are closely related to agriculture as so many of these enterprises are engaged in micro retailing, processing and farming itself. The survey found that 94% of the population listen to more than half an hour a week of radio programmes and that 50% of listeners thought that there were too few programmes about agriculture a similar percentage thought that there were too many music programmes.

In a meeting with over 30 radio station owners the ILO found that the owners were not aware of these findings.


**NRI and ODI reports on market information services and communication strategies**

The Natural Resources Institute carried out a survey (see References) covering the needs and sources of market information in Lira District, Uganda. Appreciation of agricultural programming was found to be very much in line with the above ILO findings. The report of the survey offers a detailed analysis of farmers' and traders' preferences for various local radio stations and the reasons for these preferences. It makes many observations and recommendations about how these services can be improved in terms of content, timing of radio broadcasts and sensitivity to gender preferences.

Building on case studies in Uganda and Mozambique, the report by the Overseas Development Institute (see References) explains the opportunities and difficulties

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presented by the decentralisation and privatisation for communication strategies including the building of the necessary institutional framework to deliver agricultural information in an appropriate and effective manner.

Summary of rural radio broadcasting in Uganda

It may be that the sample of radio stations interviewed was too small to make an accurate judgement about the state of rural broadcasting in Uganda. Some conclusions can be drawn, however, from this sample.

Not surprisingly, perhaps, in some respects Ugandan broadcasting is limited both in quality and output compared with the broadcasting services in more developed countries. Demand for more and better radio services is apparent, especially for programming on topics (including agriculture) that affect the daily lives of rural communities. The very recent advent of FM radio broadcasting has provided an excellent opportunity to provide these services in the many languages spoken in Uganda. There is also ample evidence that the necessary cost-effective technical apparatus, telephone networks and satellite coverage, and skills are available within the country to utilise the most up-to-date technology to improve these services.

Although radio broadcasting was given a prominent priority in the government's Plan for Modernisation of Agriculture, to disseminate market information and other forms of farm radio, very little of such programming is provided either by the state radio broadcasting organisation or the commercial stations.

The main restriction appears to be funding. The target audience of poor farmers do not attract sufficient interest from advertisers and state funding is too meagre to finance a comprehensive broadcasting programme. Commercial stations may also be missing an opportunity by not responding to the level of demand for such programming, preferring to retain too many programmes based on music and announcements – programming that they are familiar with but which may not be attracting the maximum audience appreciation. Changing the mix of available programming may increase listenership and, therefore, increase advertising revenue.

Unfortunately, there is no reliable data on listenership figures for Uganda's radio stations. An organisation called Steadman and Associates produce such data but all the radio station operators and relevant government agencies interviewed expressed some doubt about the methodology employed by the organisation in obtaining this data. Many advertisers, apparently, prefer to do their own very informal surveys which they believe to be more reliable. The absence of accurate listenership figures may inhibit the ability of stations to tailor-make programming to the preference of listeners and may inhibit advertisers from using radio as a means of marketing.

Radio station operators appear to have a very limited knowledge of the support programmes available from the very many agencies that work to improve rural broadcasting in developing countries. On the other hand, it may be that these agencies are not sufficiently sensitive to the special cultural characteristics of these stations and their

audiences. In addition, they may not fully understand the specific needs of Ugandan broadcasting and may not be flexible enough to tailor their assistance to those needs.

More importantly, perhaps, the linkages between radio broadcasters, government, donors, aid and developmental agencies are very poorly co-ordinated. Many of these agencies appreciate the power of radio broadcasting to assist them to achieve their objectives but lack the regulatory, administrative and institutional framework capacity to deliver the required output. This shortcoming has a very profound impact on Uganda's ability to sustain and develop an appropriate rural communication service.


## ICT systems in Uganda


Three companies have established mobile telephone networks in the country – Mobile Telephone Networks (MTN), Celtel and Uganda Telecom (Mango). Of these MTN, a South African company, is easily the largest. Contrary to popular opinion, the mobile telephone network still only covers about 20% of the land area of the country – mainly large urban areas, provincial towns and the main trunk roads. Most rural areas have no signal reception although some people in some rural areas can obtain reception by various devices including placing aerials in tall trees. Coverage has, however, expanded rapidly over the last few years. Further expansion will depend on commercial considerations including the number of rural people who can afford the handsets and services – which is very low. Where reception is available, the telecoms companies have provided adequate access by placing public phones in villages and markets, etc.

Approximately 50,000 mobile phones are owned in Uganda. A mobile phone can be purchased for about US$ 50 and peak-time calls in urban areas cost about 1.5 US cents per minute rising to about 5 US cents in some rural areas.

Telephone landlines are available from all three companies but installation is slow and comparatively expensive.

Wherever the mobile phone network extends it can be utilised to gain online access to Internet, e-mail and other computer-linked communication systems. Again, however, computer ownership in rural areas is very low. Most of the 72,000 computers (and only about 7,000 on-line internet accounts) in Uganda are owned by businesses, development agencies and government departments and are mostly located in the largest cities.

Some radio stations make use of these forms of ICT, however, to exchange programming and to receive information (including the FOODNET MIS reports). Since few rural areas have access to these communication systems, feedback from radio listeners using these systems is very limited. The initiative taken by the Rural Communication Fund (see below) may improve this situation somewhat.

# Summary of Radio/ICT linkages in Uganda

An accelerating rate of technical innovation has caused the cost of ICT systems to fall relative to the average cost of other goods. This trend has offered Uganda, and other developing countries, the opportunity to utilise these systems more widely in the task of communication provision for even its poorest citizens.

At present, and for the foreseeable future, the only electronic communication system accessible to almost all Uganda's population is radio. Computers, satellite technology, television and even telephone equipment are beyond the means of most Ugandans. Radio, then, represents the core utility for any rural communications system.

Most of Uganda's radio stations are able to function even on a limited budget, derived from advertising revenue, by utilising sophisticated ICT systems for their own use and, potentially, to establish links with other sources of broadcasting support using such ICT systems.

Probably the greatest technical advance in ICT over recent years has been the adoption of digital, as opposed to analogue, systems. Digital technology offers the opportunity to provide an interface between radio and the many other types of communications equipment – computers, telephony, on-line communication services and satellite technology.

The most technologically advanced radio stations in Uganda are already making use of this innovation.

The functions achieved by these radio stations are as follows:-

| Function | ICT Equipment |
|---|---|
|  |  |
| FM radio transmission | transmitter – aerial - mast |
| Script-writing and editing | computer |
| Programme editing | computer – wave-editing, sequencing and mixing software – mixing desk |
| Pre-recording/storage | minidisk recorder or computer and CD or hard-drive |
| Satellite reception (in audio or written form) | microwave receiver – aerial - computer |
| E-mail and fax | landline – computer |
| Internet access (in audio or written form) | landline broadband internet connection – computer |

| Small message service (SMS) | mobile phone |
| Two-way communication | mobile or landline phone |

(Two significant omissions from this list are outside broadcast equipment and the equipment needed to transmit via satellite, as opposed to receiving satellite signals.)

Although these radio stations possess this equipment, they do not use it to its maximum potential. Almost all programming is produced by the station and broadcast live. Pre-recorded material is used mainly for advertisements, HIV/AIDs messages and the FOODNET market information output. Very little programming is received and downloaded either through the internet or via satellite.

Although programming on Uganda's radio network is popular and culturally appropriate, many insiders believe that it could be greatly improved. Very few types of programme formats are used – music, interviews, studio discussions, announcements and 'chat-shows' make up the bulk of programming. Very little use is made of dramatic presentation, pre-recorded (properly edited) programmes, documentary programmes, investigative journalism, current affairs, historical features, etc., in which issues affecting agriculture, for instance, could be aired. Although many agencies offer ready-made agricultural programming (see Annex 1) little use is made of this material. Technical support and training is also on offer from such agencies but, again, few such offers are taken up.

The ability of Uganda's radio network to provide high quality, informative, useful and entertaining public broadcasting (including agricultural programming) is, therefore, limited.

There are several reasons for these shortcomings.

Inertia and lack of confidence

Radio stations feel comfortable making programmes with their present limited range of formats and see little need to innovate. They may not be aware that an improvement in programming would be likely to increase audience numbers and, therefore, advertising revenue. They appear to lack the confidence to experiment with new and more imaginative formats.

Cost

Hiring actors and subject experts, writing scripts, carrying out research and editing programmes is expensive and, without a guarantee that revenues will increase if better programming is provided, radio stations may not be prepared to make the necessary investment. Cost is certainly a factor in the making of agricultural programmes. Here, outside broadcasts and pre-recorded programming would be useful as a means of hearing

the experiences of farmers and communicating their perceived needs and details of their successful strategies to a wider audience.

### Lack of skills and experience

The skills-base for most forms of media and entertainment (with the notable exception of music) is low in Uganda. Almost all training in radio stations is carried out in-house. Many working in the industry are young and have not travelled to other countries where more imaginative radio programming can be heard. It may also be that only a few radio station staff are familiar with the more sophisticated ICT equipment. Many junior staff members may not have access to such equipment and may not have the time or skills to use it.

### Lack of knowledge

There is some evidence that some radio station managers have, in the past, taken up offers of ready-made pre-recorded programming or scripts on agricultural topics that can be translated into local languages. This has been very much the exception rather than the rule, however. Those interviewed for this survey had very little knowledge of the types of support available nor of the institutions that provide it.

### Inappropriate support from outside agencies

Many of those in the industry that were interviewed expressed the view that the agricultural programming and other assistance offered by the outside agencies, that they had heard of, was inappropriate for their needs.

Clearly, language is a problem. Very little, if any, pre-recorded programming is likely to be in any of Uganda's 30 languages. Translation, at least from English, is not a problem, but it is time-consuming and local presenters may not feel they have the skills to reproduce the quality of the work of the professional presenters of programmes used by international agencies. Some interviewees also said that such programming was not culturally appropriate. It maybe, for instance, that the language of these programmes is too didactic and may seem boring or even insulting to local farmers.

In addition, the topics of such programmes may not apply to, or address, local needs. The agricultural trading system in Uganda, for instance, is unusual in that small-scale traders and retailers do not compete with each other because it is perceived to be discourteous to attempt to drive a fellow trader out of business. Most Ugandan farmers have no means to communicate with the outside world and no means to bring more of their products to market than can be carried on a bicycle. Any programmes designed to be used to assist in the farming and trading conditions of, say, Mexico, or the Philippines, would be useless in Uganda.

Likewise, the types of training offered by these agencies may be inappropriate or may not be fully funded. Radio station operators may also be reluctant to send a staff member for training, as a fully trained worker might be tempted to look for a better job at a different station.

The availability of modern electronic communication systems does not appear to be a limiting factor in the provision of rural communication systems.

Evidence gathered for this report indicates that a lack of funding and appropriate support represents a more important factor in limiting the development of an improved rural communication system. This weakness can be linked to the delivery of policy objectives in the regulatory, administrative and institutional framework of the country.

For this reason, the following section of this report will attempt to describe and analyse this framework.

## The regulatory, administrative and institutional framework for rural radio

Several Ugandan government agencies have a role in the provision of rural communication systems.

Government ministries

The Ministry of Information and Broadcasting has overall responsibility for formulating policy on communication and is now part of the Office of the President. In effect, however, it functions through several other government institutions. Another ministry, the Ministry of Works, also has a role in some technical aspects of the communication system. The Ministry of Health works closely with specialist heath agencies to provide radio programming on health topics.

The Uganda Communication Commission (UCC)

The eight Commissioners of this institution are appointed by the Minister of Information and Broadcasting. One Commissioner acts as the Executive Director of the Commission. The Commission's functions are to ensure compliance of communication service providers and operators with government policy, to approve all communication equipment and to administrate the licensing system. Licences have to be renewed and paid for each year. Most importantly for rural radio, the Commission has a remit to develop rural communications. This last function is achieved through an entity known as the Rural Communication Fund. The UCC has a staff of 85.

The Rural Communication Fund (RCF) is supposed to be financed by a levy on all Internet service providers, radio stations and mobile telephone operators. In practice this levy has only been collected from the mobile telephone companies.

The main objective of the fund, so far, has been to establish public access points for rural communities in areas that would not normally be profitable to the telecoms companies. This it does by offering contracts on a tender basis to the telephone companies to establish telephony and internet links in, what will eventually be, all the 52 districts of Uganda. In practice, these links are with the major town or city in those districts and not in the countryside proper. Each link has to serve a minimum of 5000 people and, so far, 20 links have been created. The UCC plan to increase this number to 32 by 2005. The output of this project takes the form of internet cafes in town centres where local people can gain access to telephone, e-mail and internet services at local call rates. Each unit costs about US$15,000 to install and all of them employ staff to train local people in the use of these systems.

Since this signalling need not only be used by the internet cafes, local radio stations and businesses can make use of this signalling for their own purposes, including, digital radio programming access, on a commercial basis. Such a development can, therefore, be regarded as the creation of communication nodes which can carry most other forms of modern communication systems.

In addition to this initiative the RCF has funded the creation of a website for each district of Uganda. Unfortunately, at present, the sites are only accessible to government and district officials and cannot be accessed by local people to, for instance, advertise agricultural services.

Broadcasting Council

This body is responsible for monitoring the output of broadcasters in Uganda. Licences can be withheld and/or fines imposed if programming content contravenes the Council's statutory standards on taste and decency and on provision for cultural diversity.

In recent days the Council has produced a new broadcasting policy document – 'A new broadcasting aspiration for Uganda', which has very significant implications for public broadcasting. Until now there has been no obligation on behalf of radio stations to include any public broadcasting programming. The new document, however, includes proposals for a human resources dimension for all broadcasters. The Council were confident that these proposals will become part of broadcasting regulation by the end of 2004.

Under these proposals all radio stations will be obliged to reserve at least 20% of broadcasting time for public broadcasting of which agricultural issues will be a major component – along with education, health, citizenship, etc.

Few radio stations include as much as 20% of this type of broadcasting and, if these recommendations are approved, they will be obliged to acquire completely new skills and knowledge relevant to these human resource topics. On the other hand this change may open the opportunity for stations that already air these topics to make programmes for the other stations or even syndicate the programmes they make.

Insiders in the radio industry interviewed for this study, however, were sceptical about both the Council's optimism in having these proposals approved and about the Council's ability to enforce such changes. In Ghana, apparently, where similar regulations were imposed recently, radio broadcasters aired such programming in the middle of the night or reinterpreted the rules as including, for instance, children's programmes.

National Agricultural Advisory Services (NAADS)

NAADS is the chosen instrument of government to provide agricultural information to stakeholders in the sector.

The NAADS strategy document (February 2003) states:-

*'The Plan for Modernising Agriculture recognises the need for an effective market information service providing different types of stakeholders with different types of information on a timely basis in order for them to make informed decisions crucial for the success of their business operations. Responsibility for the market information component will therefore be channelled through the NAADS programme and will focus on collecting and synthesising information: quality control and promotional activities. Therefore it clearly states in the NAADS core document that 'information and communication will be supported as a tool in the commercialisation process'. Specifically, it will be used in providing market information and identifying market opportunities.'*

The strategy document identifies several forms in which such information could be disseminated with special reference to local FM radio stations as the most effective and appropriate means of communicating information in remote areas to farmers.

Presumably, for this reason NAADS appointed FOODNET to supply this service on a six month renewable contract. This service was to cover six districts (in addition to the districts already covered by FOODNET). It was envisaged that this coverage would be extended to more districts over time and eventually include all the 52 districts of Uganda.

In the intervening period, however, NAADS appears to have suffered a funding difficulty and, partly as a result, have instigated a review of the present NAADS-funded FOODNET market information service. It is not clear what status this review will have within NAADS or within the general guidelines of the PMA. Officers of NAADS, however, maintain that the findings of the review (which is not yet published) suggest that forms of information dissemination, notably the posting of billboards at market places and farmers' meetings at the sub-county level, would be more cost effective than

radio and would comply more directly with the government's decentralisation strategy. The FOODNET contract has not been renewed after the first six month period, presumably awaiting the outcome of this review.

It is not entirely clear how formal this review has been, however. The NAADS strategy document calls for any such review to be carried out by a consultant 'outside the NAADS Secretariat'. The review was, in fact, designed and carried out by NAADS officials and officials of the districts in question. It is not clear whether these district officials are likely to be contracted to organise the non-radio dissemination programme suggested by the review findings. With no independent element involved in this review it may be considered to lack credibility or impartiality and it maybe that a further evaluation of the present strategy would have to be carried out to form the basis of any decision on a change in strategy.

NAADS officials and advisers interviewed were not aware of many of the research findings carried out over the last few years in accordance with the PMA on the relative merit of information dissemination systems. These findings, for instance, concluded that where billboards were used they could not be understood by illiterate stakeholders, were subject to alteration by interested parties and could be destroyed in adverse weather conditions.

NAADS officials were also unaware that the organisation is the only government agency responsible for the provision of agricultural market information. They suggested that other ministries might also share this responsibility.

Although the Ministry of Finance confirmed that adequate provision had been made within the state budget for MIS provision, it appears that the release of funds for delivery of this service depends on the carrying out of certain administrative procedures by the agency responsible for delivering the service in question – in this case NAADS. It maybe, therefore, that the current funding difficulties suffered by NAADS, which are likely to have influenced the proposal to disseminate information by the cheaper medium of billboards and meetings, may be eventually resolved.

The funding difficulties at NAADS have clear and significant implications for the sustainability of the provision of agricultural information, disseminated by local radio, to the rural communities of Uganda.

Decentralisation

International donors provide over half of the Ugandan state budget and have a significant influence on policy. The Plan for Modernisation of Agriculture (PMA) was drawn up by the government with donor support and approval. Agricultural information, including market information represents one of the priorities of the PMA. The section of the PMA entitled 'Strategies for improving marketing access' (P 83) states:- '*The need for effective market information for improving market access is absolutely crucial*.' The section goes

on – *'Local radios could be one of the principle mean(s) of disseminating such information'.*

Neither the PMA nor any subsequent legislation offers the prospect of radio broadcasters, including the state-owned radio stations, being obliged to broadcast agricultural information broadcasting as 'a public good' and, therefore, without charge. The fees charged by radio stations represent a significant component of the cost of information provision to rural areas.

Alongside government policy on agriculture, policy on the delivery system for such development strategies has also been formulated in the last few years. Central to this strategy has been the decentralisation of development assistance. Delivery of agricultural extension services utilising the private sector and development agencies, where appropriate, was also to be decentralised in this way. Some provision was to be delivered, over time, down to the sub-county level.

Clearly, there are no radio or ICT systems operating at this micro level. The smallest radio stations cover an area at least the size of a district. Although market information services are targeted through local radio stations, no such services could usefully operate without gathering data at the national, regional and international level. This is because the market price of agricultural commodities and other market factors are mainly influenced by supply and demand over very wide areas. Market features of many commodities, such a coffee, sesame seeds and spices, are determined at a global level.

In 2000 the Technical Centre for Agriculture (CTA) supported the development of a pilot project to deliver market information to stakeholders in a very small area of Ghana. The project failed because although the local farmers were informed about prices in the local markets, they were offered no information about prices in more distant markets where prices were often higher. This lack of information meant that their bargaining position with traders, especially those from outside their immediate area, was not improved.

It is clear, therefore, that any national farm radio service needs to be organised at the national level even though information provided by the service may be delivered at the local level and made appropriate and relevant to local communities.

The dichotomy in Uganda between the need to provide useful agricultural communication system and the need to decentralise development assistance may also be inhibiting the progress of these services.

Donors

Donors have taken a keen interest in all aspects of the PMA including the delivery of policy objectives. Indeed, many of the preparatory studies were funded by them and donor funds were made available to carry out the plan. Although the execution of the PMA remains entirely the responsibility of the Ugandan Government, the development and monitoring of the plan are discussed in regular meetings of the donors.

<u>The UK Department of International Development (DfID)</u>

In order to ascertain some idea of the donors' impressions of the role of rural communication systems it was decided to interview an officer of DfID – a major donor towards Ugandan development.
It seems that the donors have not yet been prepared to endorse the last government budget for the PMA. Concerns about the capacity of NAADS to deliver PMA objectives are a major donor priority. NAADS has been given several tasks apart from the provision of agricultural information. These include the procurement of items required by districts for agricultural development, the formation of farmers' associations, and post harvest research. Concern over the delivery of PMA policy objectives has prompted the donors to insist on a review of NAADS' work.

## Non-Ugandan projects linking rural radio and ICT systems

The trend towards liberalisation of trade in agricultural commodities, increased international competition and concerns about food security has emphasised the need to increase production and marketing efficiency in the agricultural industry. There is now near universal recognition of the efficacy of radio broadcasting as a tool in this development process.

Most developing countries depend on agriculture for export revenue, employment and the supply of food. Most of these countries have recognised the need to provide farmers and other agriculturists with the necessary information to improve their businesses. Such information needs to cover technical aspects of farming and post-harvest techniques and information about the local and wider markets for the commodities they produce. Many of these countries have, for many years, used radio broadcasts to impart this information but very few of them can boast communication systems that are as comprehensive as those enjoyed by farmers in industrial countries which have a much lower dependency on agriculture.

The advent of modern electronic communication systems offers the opportunity for these countries to improve the provision of information to agricultural communities. Unfortunately, many stakeholders, including farmers, traders, processors, extension workers and policy-makers are not fully aware of the advantages that such ICT systems can offer.

The two cases outlined in this section of the report offer some insights into how two very different regions are addressing the problem. The first case illustrates how South Africa is taking steps to use radio and ICT to reach their rural communities. The second project was carried out in several Pacific island states, and was designed to increase awareness among all stakeholders of the potential for modern communication systems. The project initiators worked closely with radio broadcasters but also with policy-makers in the hope that the project would stimulate the use of these systems in public broadcasting.

**Community Radio and Farming in South Africa**

www.fao.org/docrep/003/x6721e6721e35.htm
www.ncrf.org.za/sacrin.htm

A project of the National Community Radio Forum (NCRF), and the Centre for Democratic Communications (CDC), Johannesburg, South Africa.

The project outlined below represents an example of rural radio networking using ICT systems at a more sophisticated level than in Uganda. 37 local stations are linked to a 'hub' station produces radio programmes and then distributes them to the other stations in the network via a satellite. The programmes are transmitted in a digital audio format that can be quickly and easily played by the local radio stations.

Farming in South Africa has been historically dominated by the white section of the population in terms of professional participation in the industry. Non-white farming communities still require help, especially in the form of education and information, to start developing technologies of their own. Community radio can play a major role in this process as the most accessible medium of communication to these communities.

Farm radio in South Africa has only been a comparatively recent innovation for several reasons including the delay in granting licences to rural radio stations and the marginalisation of traditional farmers during the apartheid era.

Until recently the majority of radio stations were urban based. In the last decade more rural stations have been granted broadcasting licences. Since 1994, community radio in South Africa has been used as a tool to disseminate a variety of educational and development content (including agricultural information) and to promote participation of disadvantaged rural communities.

The National Community Radio Forum (NCRF) is an association of South African rural radio stations. Since 1998, NCRF has linked 37 of its members to a system called South African Community Radio Information Network (SACRIN). SACRIN produces and distributes radio programming. It maintains its network through a satellite transmission and receiving system that links community radio stations and enables them to share programming facilitated by the SACRIN Hub Studio which is located in NCRF office. It is hoped that as many as 60 radio stations will be linked into the system over the next few years.

The role played by community radio

South African community radio regards the making of high quality programming and its collaboration with the local community as its greatest challenge. The stations wish to create programming that both reflects and supports the community's sustainable development goals.

Community stations have highlighted a number of agricultural and development issues that are included in programming. These include:-

Promotion of low-cost methods of producing high quality food.
Sustainable development.
HIV/AIDS awareness.
Voter education.
Local education improvement.
Human rights.
Refugee rights.
Creating effective communication among the stakeholders in the agricultural and environmental sectors.
Protecting land and labour rights of rural communities and individuals, as set out in South Africa's legislation.
Education on the issues surrounding the production of genetically modified crops and the use of bio-chemical substances.

Although farm radio is a component of rural radio programming, this component has been limited by the lack of relevant training in this field and the pressure to supply programming on other important issues such as health, education water, electricity, crime and unemployment.

Format of programming

Audience research by SACRIN has suggested that radio programmes and communication packages must be tailored to the needs of the various audiences. SACRIN produces and distributes a range of programming accordingly.

The stations use different broadcasting formats to stimulate participation in their programming such as – live talk shows and 'call-in' programmes, documentaries and short promotions and announcements. The setting of contests and offering of prizes to callers also encourages participation.

Live talk shows offer the opportunity for audiences to voice their opinions by telephoning the station during the discussion of a particular topic. This is especially true of programmes that include panel discussions and a studio audience. Listeners can use a national toll-free number to comment and pose questions to the presenters of the programmes and studio guests. Call-ins are multilingual, allowing people from all over the country to use the language they feel most comfortable with.

Community radio's use of ICT

Community radio stations in South Africa broadcast programmes exclusively via traditional analogue radio signals, since newer technologies, such as internet radio and digital radio, remain prohibitively expensive to receive and are, therefore, unsuited to local conditions.
For these South African radio stations in the SACRIN system, the main advantages of recent developments in ICT are the increased ease with which information can be exchanged via e-mail, internet, mobile phones. In addition, entire radio programmes can be transmitted via satellite and internet-based file transfer, and audio footage which once had to be edited by cutting and splicing tape can now be achieved much more easily using a computer and specialist software.

The SACRIN system allows stations to use digital satellite audio to receive SACRIN programming output and to share programming and information with other member stations. Some stations also have access to e-mail, which they can use to communicate with other stations and other stakeholders and to the internet.

Until member stations acquire a satellite transmission capability of their own, information through this media can only be in one direction. Stations have to report back to the SACRIN newsroom via phone fax or by post. If these stations could acquire such capability SACRIN could receive input from member stations and member stations could share programming with each other without going through the hub.

The SACRIN hub has digital satellite broadcasting and digital audio editing capability as well as e-mail and internet connection.

NCRF has access to outside broadcast mobile studio equipment to record programmes linked to national events.

Some SACRIN newsroom staff have received outside training in audio/script transmission.

Other innovations linked to the SACRIN system include a group of stations in KwaZulu-Natal which has started a pilot project in which they share ideas, information, scripts and audio via the internet. This project is being funded by a South African-based donor. The Woman'sNet internet project, based in Johannesburg, has received donor support to set up a pilot Community Radio Clearing House FTP site linked to its web page. This would enable each member of the network to upload audio footage and other information to a shared area which could then be downloaded by all the other members of the group. Such initiatives could be utilised by farm radio if the support became available.

SACRIN is in the process of decentralising by the development of nine NCRF provincial hub stations and nine provincial co-ordinating committees.

SACRIN believes that the main difficulties in sustaining these ICT interventions are the availability of skilled staff and adequate financial support. Most stations are not financially strong and depend too much on donor funding and outside 'expert assistance'.

Other linkages

In addition to programming access through the SACRIN system, some stations receive information and radio scripts from the Canadian-based Developing Countries Farm Radio Network (DCFRN). Some pre-recorded cassette items are also available from the South African Department of Agriculture. SACRIN has created a partnership with the Department to promote farm issues on community radio.

The SACRIN project collaborates with other community radio stations in Africa and around the world to produce global community radio broadcasts. Using various satellite platforms and the internet, these broadcasts feed programming in English, French, Portuguese and Spanish to stations in other continents. These projects have come about as a result of a collaboration between NCRF and the World Association of Community Radio Broadcasters (AMARC).

**Building ICT awareness through radio in the Pacific Islands**

www.bbc.co.uk/worldservice/trust/projectsindepth/story/2004

A project of the BBC World Service, Radio Fiji and the Solomon Islands and Samoan Broadcasting Corporations together with the United Nations Development Programme

Many rural communications projects are designed and implemented by experts and officials with little participation of those the system is intended to benefit.

This project takes a quite different approach to the problem of stimulating demand for, and use of, ICT communication systems.

The overall objective of the project was to demonstrate the use of radio and support for radio stations to promote the role of ICT in Fiji, the Solomon Islands and Samoa to achieve Millennium Development Goals. It was also designed to demonstrate how radio stations across a region can co-operate with each other to produce programming.

The entire project has the title of 'From Canoe to Computer'. The central output of the project was the production of a series of radio programmes broadcast in July and August 2004 about various forms of IT communications systems which could be used to enhance

development across 33 million square kilometres of ocean and five time zones. The production of these programmes involved capacity-building in local broadcasting corporations and the training of local radio broadcasters.

Six 15 minute programmes, entitled 'Digital Pacific', were designed to inform listeners of the role ICT can play in the development process including the use of e-mail to advertise and market indigenously produced goods. Another purpose of the programmes was to support the three governments' ICT development programmes. The project managers were particularly concerned to involve policy-makers in government, development agencies, businesses and broadcasting organisations in the choice of content of the broadcasts and, thereby, stimulate interest in promoting the use of ICT systems.

In each country a BBC producer worked with a reporter from the national broadcaster, providing on-the-job training in journalism and radio production. Each programme was presented by the local reporter in the appropriate local languages.

The programme messages were reinforced by a radio discussion programme, in which government representatives were asked to explain their policies showing where ICT systems could help Pacific islands to achieve their Millennium Goals. Other events and capacity-building projects including a journalist workshop for 30 journalists and a question and answer session with United Nations officials were linked with the project.

The project also promoted 'Go Digital', which is a live webcast produced by the BBC World Service and is the most watched webcast in the world, regularly attracting up to 1000 e-mails a day. The programme looks at how technology is changing our lives.

# Observations and recommendations

General observations

Many studies have been carried out which quantitatively demonstrate how the agricultural sectors of developing countries can be made more efficient and productive if farmers, traders, processors and policy-makers are properly informed about changing demand patterns, market opportunities and successful production techniques. However, some governments are not fully aware of the economic benefits that can be derived from the establishment of rural communication services.

**Development and government agencies should commission studies to provide to governments and donors quantitative and qualitative evidence to demonstrate the value of information provision in the development of agriculture, agricultural markets and to the economy as a whole. Such evidence is likely to demonstrate that benefits far outweigh costs and would help to justify such provision.**

Unless, governments and donors see rural communication systems as a 'public good', they will not be established.

**The first pre-requisite, therefore, for the development of rural radio is for governments and donors to adopt policy frameworks which encourage, support and adequately subsidise public broadcasting designed to benefit small-scale farmers, traders and agro-processors. These policy frameworks must include open and accountable institutional mechanisms to establish and sustain communication systems.**

Many policy-makers and donor agencies have recognised the power of radio to assist in their development programmes. There is still, however, a lack of familiarity in some quarters with the use that can be made by radio broadcasters of ICT systems to improve and extend programming. Pre-recording equipment, programme editing, downloading and even syndication of programming can all be achieved with relatively simple and inexpensive computer-linked equipment and satellite technology. In addition, many radio operators are unaware of the large number of agencies that are able to offer support for rural radio broadcasting including training in the technical, marketing and production aspects of the industry.

**The Canoe to Computer (see above) project in the South Pacific could act as a model for those wishing to raise the level of understanding of the usefulness of ICT systems which, in turn, could increase the demand and application of such systems.**

Modern ICT systems are only able to work in countries in which the necessary communications infrastructure has been established. Commercial companies have the incentive to create telecoms networks in areas where there are sufficient clients to generate a return on their investment. Commercially operated radio stations also appear to be more efficient than many state-controlled broadcasters and are more responsive to the programming interests of their listeners. These private sector operators, however, cannot be expected to subsidise rural communication systems and public broadcasting if such services are not commercially viable.

**Government and development agencies need to develop mutually beneficial relationships with private sector communication systems operators. The Ugandan experience shows that private sector organisations can be supported by government to install equipment needed for rural broadcasting. Government and development agencies may also have a role in drawing the attention of radio broadcasters to the potential popularity of programming designed to assist agricultural communities provided it is presented in a culturally acceptable and entertaining format.**

<u>Observations on the development of rural communication systems in Uganda</u>

Ugandan efforts to establish a relevant, useful and comprehensive communication system for its agricultural community is, clearly, still at the development stage. The government's Plan for Modernisation of Agriculture, however, provides a rational policy framework for the agricultural sector which includes the development of a more efficient market structure for agricultural commodities and a workable and appropriate method of delivering agricultural extension services and relevant information.

The establishment of local FM radio stations, which now cover the entire country, the advent of a mobile telephone network, which can facilitate the use of more sophisticated ICT systems, and the availability of satellite technology, offer Ugandans an excellent opportunity to improve rural communications. In addition, a government policy framework is in place to encourage and support the development of such systems.

As with many tools of development, however, communication provision is inhibited by a lack of resources and bottlenecks in the institutional apparatus designated to deliver it. Lack of knowledge of the advantages of ICT technology and of the support mechanisms available from many agencies responsible for rural communications represents a lesser but important restriction on development.

Nevertheless, there are a group of measures that could be taken at an institutional and technical level which could improve the prospects of building and sustaining a better rural communication system.

An understanding of the potential role of Information and communications technology is my no means universal in the country. On the other hand, such technology is already used widely and there exists a significant skills-base available to develop these systems. Those interviewed for this study expressed the opinion that the main impediment to such development are the necessary resources to obtain the equipment, train more people in its use and educate the wider population, including policy-makers, in the advantages of these systems for use in rural communication systems.

One major gap in the policy framework is the lack of a communication system that would provide the bulk of the rural population with the means of communicating their needs and opinions and advertising their productive potential to the outside world.

At present, the only ICT system that can reach all Ugandans is radio. A two-way communication system can only be provided by other ICT technology – telephone and computer-based systems. The initiative by the Rural Communications Fund of the Uganda Communications Commission to develop telephone and computer-based communication 'nodes' in all 52 districts of the country represents a significant step in the right direction. Many Ugandans, however, live 100 kilometres or more from these district centres – too far to travel to make a telephone call or to search the internet.

Although Uganda's telecoms companies are expanding their coverage of the country, very large numbers of Ugandans living in rural areas cannot afford telephone handsets or to make calls.

**If the government wishes to provide the necessary communication systems which will enable the agricultural community to respond to market signals and, by so doing, increase farmers' incomes and improve the economy as a whole, its best option is to place a high priority on expanding and accelerating the Rural Communications Fund initiative.**

Satellite technology has the advantage of providing signal coverage without the need to build masts. Satellite linkages can already be made anywhere in Uganda. Although the cost of making these linkages is relatively low the necessary equipment required is still far too expensive for utilisation by farmers' groups or local small-scale traders.

**Government and donor agencies should seriously consider expanding the use of satellite technology (for receiving signals) in the RCF programme.**

The major obstacle in the path of rural radio development is the cost of radio air time. The initiative of the Broadcasting Council to require radio stations to increase public broadcasting significantly is both commercially and developmentally sound. ILO research has shown that there is strong support among the rural community for more agricultural programming. If advertisers are made aware of the popularity of such programming they are likely to provide the necessary revenue, thus reducing air time costs to public broadcasters.

**Radio station operators and advertisers should be made aware of these ILO findings and should be assisted in acquiring the necessary skills and knowledge-base to provide such programming. The Broadcasting Council proposals should be adopted and properly enforced where necessary.**

Advertisers and radio programme sponsors have no reliable data on the audience numbers or the social characteristics of the audience for the many radio stations and the various kinds of programming. Lack of such data is likely to discourage advertising and reduce the potential revenue of radio stations. Public broadcasters also need to know if they are reaching their target audience.

**An appropriate government agency should investigate ways of making listenership data more reliable and ensuring that it is independently assessed.**

Although programming on Uganda's radio network is popular and culturally appropriate, many insiders believe that it could be greatly improved. Very few types of programme formats are used. An expansion and improvement of programming would be likely to increase audience numbers and advertising revenue.

**Radio stations should be encouraged to seek the support services provided by many international agencies in the form of training, technical support and programming provision.**

Agricultural extension services in many African countries, including Uganda, are under great strain to meet their workload. Radio broadcasts could be seen as a way of augmenting the work of these agencies to back up, and to be linked to, field training programmes for farmers groups

Many reports based on research findings in the agricultural sector are only narrowly distributed to government, academic institutions and development agencies. Several manuals have been produced which have been designed to assist farmers to produce and market their output. These reports and manuals are of great use to Uganda's rural communities but the limitation of the resources of extension services and development agencies means that the information contained in these documents can only be slowly and perfunctorily disseminated at farmers' meetings. This information would be ideal subject matter for farm radio programming provided they were interpreted in entertaining, informative and culturally appropriate ways.

**Government and development agencies and extension services should work closely with, and support, local radio stations to make and broadcast programming that conveys the information contained in their training programmes, manuals and research project findings as part of the package of their development assistance.**

Agricultural market information provision is at the heart of the government's Plan for Modernisation of Agriculture. Accordingly, national budget provision was made and the

delivery apparatus was designed to fulfil this objective. Many pieces of research were carried out to assist in this design which found that rural radio services were by far the most efficient means of disseminating market information to Uganda's millions of isolated farmers. Significant progress has been made over the intervening four years since the PMA was published, building on the FOODNET MIS local, national, regional integrated model.

Some confusion now hangs over this development. The National Agricultural Advisory Services (NAADS), the government agency charged with the delivery of this service, appears to be in financial difficulties and is considering a major change in strategy. Although the full details of the status of such internal deliberations are unclear, some senior managers of NAADS appear to be considering a reduction in the use of radio as a means of disseminating information in favour of a much cheaper programme using billboards and group meetings, which can be accessed by comparatively few people. It is also not clear whether these managers are aware of the findings of many authoritative research projects, carried out in Uganda and many other countries, which identify the overwhelming merits of radio in the dissemination of extremely time-sensitive information to very large numbers of poor, partially illiterate farming communities.

Any decision to adopt a strategy which utilise a less effective dissemination method for market information services than radio should be viewed with great concern. To be effective MIS services must reach as many Ugandan farmers as possibly – in this case, many millions. The quality of FOODNET's service, and its capacity to deliver that service, should always be subject to independent evaluation. It is possible that additional or different agencies should be engaged to accelerate and expand MIS provision but to abandon or curtail the radio-based MIS service because of a temporary finding difficulty could put the entire project in jeopardy due to loss of institutional memory among MIS providers.

**The question of funding and project priorities within NAADS urgently needs clarification. A dismantling of the present MIS delivery system may be difficult and time consuming to rebuild.**

The Ugandan government and donors have approved a strategy designed to decentralise development. The merits of this approach include capacity-building at the county and district level, the participation of local people and the design of development strategies to meet differing local needs. In the case of the provision of agricultural information, however, such a strategy cannot function properly. Local markets are intrinsically linked to much wider market forces.

**Government and donors should recognise the need to organise agricultural market information provision at the national level albeit for national and local dissemination and utilisation.**

At present, there seems to be a degree of co-operation between health agencies to co-ordinate their efforts to educate the population in this field.

**Government and development agencies that have an interest in using radio as a means of communicating their message to rural people, including health agencies, should endeavour to co-ordinate their activities.**


# Report on Ugandan Radio stations


<u>RadioWorks</u>

This company owns three rural radio stations in Uganda. The most recent of these stations to be established is situated in the war-torn Karamoja region in the north-west of the country and is entirely funded by aid agencies. Each of these stations employs about 12 people.

RadioWorks have had a strong association with the FOODNET MIS programme almost from its inception. The owner, Gordon Bell, is a dedicated believer in agricultural programming not only from a development point of view, but also because he has gathered evidence that such programmes are popular with his listeners and advertising sponsors. For this reason two of his stations (Karamoja is not covered by the MIS programme) carry the full FOODNET output of one 15 minute programme and three, two minute 'price spots' per week. In addition, one of his radio presenters is also employed by FOODNET as a collector of market data in the Lira District. The Lira station uses this presenter to make their own talk programmes on various aspects of farming. Some farming programmes include interviews with successful farmers and competitions where listeners can win prizes supplied by the sponsors.

The company has all the necessary capacity to translate programming into the local languages but very rarely uses pre-recorded programmes from other agencies. They may not have heard of some of the programming available. Those they have investigated were not thought suitable or relevant to their listeners.

Gordon Bell and his colleagues have a very deep interest in using and adapting modern communication technology not only for their own radio stations but also in the building, refurbishing and repair of such technology owned by other organisations. This includes the utilisation of the mobile phone networks, the internet, television and satellite technology. This work represents another aspect of the firm's business.

RadioWorks have recently developed an inexpensive satellite communication system to increase the capacity of their radio stations. This would allow them to syndicate the programmes they make to other radio stations free of radio interference. The equipment consists of a micro-wave radio receiver costing between US$ 600 AND US$ 1000 an antenna and a computer. Such simple equipment means that no satellite dish is necessary to receive satellite signals.

The company has all the necessary equipment for pre-recording programmes on cassette, CD, and hard-drive some of which they have adapted for their specific conditions. They have all the relevant equipment to utilise the internet, telephone and e-mail systems for on-line communication and for downloading programming.

The station's operators have identified two main restrictions on their ability to increase farm radio broadcasting. Obtaining greater advertising sponsorship is both time-consuming and expensive. Advertising agencies involved in finding advertising accounts charge up to 30% of the revenue. The other major restriction was identified as the lack of funds to make farming programmes.

All training of new staff members is carried out by experienced members of the staff.

The company saw no restrictions represented by the lack of appropriate cutting-edge technology suitably adapted for the environment.

Central Broadcasting Service (CBS)

CBS is considered as the market leader in commercial radio by many others in the industry. It is owned by the Kingdom of Buganda but claims to generate all its revenue through advertising. The range of its two FM stations stretches from Jinja in the south-east to Masaka in the south-west – the most prosperous and densely populated area of the country and the area in which the dominant language group are the Buganda people. Although there are many large towns, including the capital Kampala, in this catchment area, most of the stations' listeners live in rural communities. The stations consider that their target audience is made up mostly of people from social class C. One of the stations broadcasts lighter programming aimed at younger people. The most important advertising comes from beer, detergent and cosmetic manufacturers and from supermarkets.

The company believes strongly in public broadcasting which represents about 20% of its output. Topics included in this programming include the police and law and order, the family, health, business, education and agriculture. Farming output includes specific weekly programmes on cotton, coffee and vanilla each of about 15 minutes and a weekly programme on general farming topics. They also broadcast FOODNET output.

Apart from the FOODNET broadcasts all other farm programmes are made by themselves and usually take the form of interviews with experts. Moderators have no special knowledge of agriculture but are generally well educated people. The format of some programmes include question and answer sessions where listeners can submit questions by post or leave telephone messages. Although all advertisements are pre-recorded, and despite having the necessary pre-recording facilities (cassette, minidiscs and CD), almost all other programmes are broadcast live.

The company has a very limited knowledge of available farming programmes made by outside agencies but had experimented with programmes made by the Technical Centre

for Agriculture (CTA) – Wageningen, in the past. It was found that these programmes had little local appeal as they were felt not to be relevant to local farmers' needs and that their format was not in keeping with the culture of the target listeners.

The company has no outside broadcast equipment but does broadcast some live items from outside the studio using mobile phones to link with the station. Reception, however, is very poor. They once had proper outside broadcast facilities but these have 'broken down'.

CBS has two production studios and two broadcast studios and programmes are aired around the clock.

The company is restricted by the amount of advertising revenue that it can generate which impairs their ability to increase output of edited, pre-recorded programmes and obtain proper outside broadcasting equipment.

CBS seems to be somewhat averse to obtaining outside training. A German broadcasting company once provided technical training to some staff, however.

Simba Radio

Although no interview was carried out with Simba Radio in the course of this investigation, some information gathered about this station offers a different model of farm radio broadcasting.

This small FM station, which operates in the east of the country, is owned by an individual who also owns a chicken feed plant and chicken farm as well as a vanilla processing factory. The station regularly broadcasts 30 minute features on the chicken business' output and encouragement to farmers to grow vanilla for sale to the vanilla plant. The vanilla programmes also offer advice on the growing of vanilla.

The mix of radio station and commercial agricultural activity may not be considered as being in the best interests of farmers. For instance, the vanilla price has collapsed over the past year or so due to overproduction. Encouraging farmers to grow the product could add to the problem and it may be thought that the vanilla factory's owner gains by obtaining cheap input for his plant. This may represent a conflict of interests between the farmer and the radio station's owner.

Spirit FM

This station is said to be typical of a number of stations in Uganda broadcasting religious programmes. It does, however, include public broadcasting content particularly on health issues and education but it also broadcasts the FOODNET MIS reports – one 15 minute programme every week and the two minute price broadcast on four days a week.

Radio Uganda

Radio Uganda is state owned and the same institution also runs the country's only television service. Broadcasting covers almost the entire country and is targeted on rural areas. The organisation went through a structural change five years ago, described by the government as 'commercialisation'. This meant that the radio programming can carry advertisements to raise revenue but must also compete with commercial stations that were created with the issuing of government broadcasting licences. Advertising revenue amounts to about US$ 800,000 a year which is passed directly to the government exchequer. In return, the government pays all the salaries of the approximately 240 Radio Uganda staff (who are civil servants) and about US$ 400,000 for programme-making and equipment. Government subsidy continues to be reduced year by year.

The Controller of Programmes, Charles Byekwaso, described the station's output as development and social programming. This consists mainly of serious programmes, government announcements, news, programmes about official events, coverage of important conferences, etc. as well as programming on health, education, business, farming, etc. Many people interviewed in the course of this study, including commercial radio broadcasters and listeners, described the output as 'boring'. Although no reliable figures are available, expert sources say that the programming is not popular.

The programming in 24 different languages is made and broadcast from Kampala but the organisation runs a station with one studio in Gulu (near the northern conflict zone) which is funded by DfID. The Kamala output is delivered to its several relay stations throughout the country using a satellite link from a very expensive (US$ 1million) dish in the station's Kampala premises. Nearly all transmission is by analogue signal which is very much more expensive in terms of power requirements than that used in FM systems.

The station carries some farming programmes. FOODNET does not use the station as they insist on payment for airtime which is more expensive than for commercial stations. The station's flagship farming programme 'Calling Farmers', a 30 minute weekly programme, is translated and broadcast in 24 languages.

The organisation no longer broadcasts farming programmes made by outside agencies although they used to air some programmes supplied to them by FAO and CTA. In 2001 they also worked briefly with the British specialist developing country radio company, Wren Media.

As a state broadcasting organisation, Radio Uganda is a member of the Commonwealth Broadcasting Association (CBA). This body was established to support such organisations and offers training and bursaries for post-graduate courses to students in the field of broadcasting. Radio Uganda has encouraged a student to take up such an offer in the past on the topic of media marketing but, apparently, the CBA does not cover all the students' costs (travel expenses, for instance) and no further staff members have taken up the opportunity. Senior members of the organisation do, however, attend the annual CBA conference held in various parts of the world.

Some programmes have been made with the assistance of 'partners'. Save the Children Fund assisted them to make a programme about children and a programme about coffee was made with the assistance of the Uganda Coffee Development Association.

The organisation also received some assistance from the Thomson Foundation but no details were available.

The Kampala headquarters has five production studios and four 'on-air' studios. They have an outside broadcast 'van' but its equipment is obsolete and no longer works. Some recordings are made outside the studio on what once were state-of-the-art tape recorders but, again, the recorders need repairs which the station cannot afford. The organisation appears to have very little capacity to repair its own equipment. They are capable of broadcasting from CDs but have no capacity to 'burn' recordings onto blank CDs. The entire organisation has only two computers one of which is used to send and receive e-mails mainly about administration. Radio Uganda also has an extensive audio library.

The controller attributed much of the organisation's difficulties to the legacy of its short and medium wave broadcasting signals which are considerably more expensive than FM systems, especially in their use of electricity. Their remit to broadcast in 24 languages is also expensive as they need at least two staff members who are familiar with each language. The controller believed that the organisation should decentralise and operate from regional stations.

Bushnet

This organisation has no radio stations of its own but it has the capability to assist radio stations to improve their communication capacity. Bushnet has been established with the objective of facilitating communication with the Ugandan countryside. Its chosen method is to utilise the same digital microwave satellite system used by RadioWorks. This facility is sold by the company to NGOs, business and other agencies working in rural areas. Satellite broadcasting capacity is rented from the mobile phone company MTN.

## Report on other ICT networks in Uganda

Mobile Telephone Networks (MTN)

MTN has easily the largest mobile telephone network in the country. The company offers many types of service. These include –

● A high speed digital interface which can be used for voice, fax, data and multi media communications.
● Mobile phone services.
● Internet and e-mail, including broadband.

● A short message service (SMS) which can display up to a 160 digit e-mail message on the mobile phone. (A facility used by FOODNET for market price data which is updated weekly.)
● A public telephone, e-mail and internet service.
● Toll free services.

The company has also initiated a system in which small motorbikes carry a public telephone but, so far, these are only used in urban areas.

<u>Other ICT networks</u>

The other two mobile phone companies offer similar services but are much smaller operations.

Many businesses, NGOs, development agencies, newspapers and government departments have computer-based ICT linkages utilising landlines and the mobile telephone networks. The police and army have their own dedicated, secure ICT systems but they are said to have a limited performance.

Uganda is served by two geo-stationary communication satellites which can be utilised with the right micro-wave equipment (see RadioWorks report above.) Satellite phone providers operating from Uganda, mainly service the most remote industrial sites and the conflict areas of southern Sudan, northern Uganda, DRC and Burundi. Satellite to satellite telephone calls cost US 49 cents per minute and satellite to mobile phone connections cost US $1.49 per minute. A monthly fee of US$ 100 is charged for SMS messaging using satellite systems.

There are at least 4 SMS service providers who offer range of rapid information services to client groups. These services include news, sports updates, horoscopes, bible quotes, foreign exchange rates, and cinema listings. Commodity prices are also available through the mobile phone system (see FOODNET). This same service also allows for two-way communications of text messages of up to 154 characters for approximately 5 US cents. , Many development agencies now believe that mobile phones and SMS provision will offer a more efficient communication system for Africa, compared with computers and the internet.

There are also more than 10 internet companies providing broadband connectivity through V-Sat connections. These service providers offer a range of add-on services, including local area networks, wireless connectivity and encryption services.

ICT systems and radio networks are widely utilised in Uganda by the private sector and by NGOs and government agencies to exchange information and to disseminate information on a wide range of subjects, including health and education, in radio broadcasts. Although many regional and international agencies provide various relevant sources of information, including radio programming, through audio, internet and other digital systems utilising satellite transmission in some cases, little use is made of them in Ugandan rural radio programming.

Uganda railways has a communications system that runs from the Kenya border to the Rwandan border, that could be used to provide a series of low cost relay points for local FM community based radios. Many attempts have been made to revitalise this information highway, but none has succeeded.

There are up to five 5+ metre C-band intel satellite dishes that are not being used by Radio Uganda. These facilities could be recommissioned to provide at least three earth stations that would provide more bandwidth and competition in the internet market. Any one of these could be used to provide a low cost service for development agencies. Similarly, there is a ring of micro-wave masts surrounding Lake Kyoga, which again, could be used to establish a low cost mid-country communications network.

Following the collapse of the Ugandan commercial bank, rural financing ceased to operate in much of Uganda. In 2003, the bank's facilities were purchased by Stanbic Bank, a South African company. Stanbic intends to install V-Sat connectivity or DSTV communications to all of its branches. This would be an ideal platform to link into, to provide additional community based communications, and particularly other service information such as electronic bulletins, e-trading points and marketing information news.

Television

The only terrestrial television station operating in Uganda is state-owned and can only be received in the larger towns and cities. It, therefore, plays no role in rural broadcasting. There is no available information about any plans to extend the service.

## Report on agencies using rural radio

### FOODNET

FOODNET is a project developed by the International Institute of Tropical Agriculture, in association with the regional research association, and supported by USAID. The FOODNET strategy aims to strengthen links between research and the private sector to develop interventions leading towards more efficient national and regional trade in the eastern and central African region. As part of the research portfolio, FOODNET focuses on developing tools and methodology to apply ICT technology to improve the collation, analysis and dissemination of agricultural market information. This is achieved through developing partnerships with ICT service providers to supply market information services that are faster, cheaper and with a wider reach.

An integrated market information service

All agricultural markets are affected by forces of supply and demand over a wide geographical area. For this reason, information about these markets has to be collected at

a local, national, regional and international level to provide relevant and useful data for all stakeholders.

There are various categories of stakeholders – small, medium and large scale farmers, traders and processors; government and development agency policy makers and service providers; famine early warning agencies, transport companies, etc. Information which is relevant to one group may not be relevant to another and information has to be packaged and disseminated differently to each group.

For this reason FOODNET has developed a three-tiered structure which collects and provides relevant information at the local, national and regional level.  The first of these tiers to be established was the National Market Information Service.

National Market Information Service

The national MIS was designed to collect both primary and secondary marketing data and relevant marketing news items and disseminate this information on a weekly basis. The main clients for this service are commercial farmers, traders operating across districts, food relief agencies, NGOs, researchers and policy makers. The service initially aimed to provide a weekly synthesis of the market status across Uganda, for the main staple food crops.

The MIS collects primary data, at the wholesale and retail level for 28 agricultural commodities. This constitutes the major non perishable, staple food crops and some livestock products. In Kampala, the capital city, daily crop prices are collected by a single marketing agent, from three main markets and from the main abattoir. Weekly price data are collected from market centres in 17 districts - Jinja, Iganga, Tororo, Mbale, Gulu, Masindi, Rakai, Masaka, Mbarara, Kabale, Kasese, Luwero, Lira, Soroti, Kampala, Kitgum, Arua and Hoima.

Information is sent from these districts to Kampala via post office fax services. In some cases the market agents once used dedicated email systems, but this method was discontinued due to problems with costs and maintenance of equipment. Since that time, the steady increase in the numbers of provincial cyber-café's has re-opened new possibilities for routine transmission of data. During this time FOODNET has also adopted a communication system using SMS (short message service) for this purpose. Once data is received at the FOODNET office in Kampala, it is entered into an excel spreadsheet for storage and analysis.

Use of ICT to disseminate national market Information

FOODNET found that by utilising multi-media ICT systems it could reduce the cost of providing a timely and accurate market information service to all its stakeholders. These systems include -

● Email

The national MIS is emailed to 38 traders and institutional addresses on a daily basis and to 170 addresses on a weekly basis.

- Internet

National market information is posted on the FOODNET website, www.cgiar.org/foodnet in the form of radio scripts and datasheets. However, this system was recently upgraded onto the Ugandan Tradenet software. Experience over the past five years in developing market information services has made it apparent that there is no effective, off-the-shelf software packages that could be used to address the increasingly complex needs of national market information services.

To overcome this problem IITA and CIAT established a relationship with a Ghanaian-based ICT business incubator company, Busylab, to develop an appropriate web-based MIS platform that could facilitate information flow and also integrate ICT options including, web, mobile phones, SMS, satellite data channels, FM radios and mobile print media services through an automated, online portal.

The beta version of this software http://www.tradenet.biz/ , (see Annex 2), is now being pilot tested with the Ugandan national market information service and if successful, this product will be commercialised through a public:private sector company. Some of the advantages of this system include the holding of data in more than one location, on-line access to data, and the automation of systems for collation, storage and dissemination. For example, using this system, field staff can now SMS their information to the central data office. On approval by the data processing team, this data is automatically uploaded into the database and then an automation engine sends it to clients via email, SMS or fax on demand.

- FM radio

As the majority of clients are the many millions of small-scale farmers and traders, scattered across the country, the best means of accessing these communities is through FM radios. Consequently, the main outlet for the national MIS is through a 15 minute radio script broadcast to the nation on a weekly basis through 12 FM radio stations, (see Annex 2.)

In virtually all cases radio scripts are emailed to the FM radio stations. Where this is not possible, a fax is sent. Tests have shown that it is also possible to send pre-recorded scripts as MP3 "voice files" directly to the stations via WorldSpace and/or Internet. However, there are currently insufficient funds to enable this method to be used in Africa.

As Uganda has over 30 local languages, it means that no single language can be used to disseminate the information to the entire farming community. To overcome this problem the scripts are sent to the radio stations in English from were they are translated into the eight local languages (plus English) understood by at least 80% of the population.

The service has recently developed links with a private sector company, RadioWorks, with studio production facilities and this has enabled the FOODNET team to produce audio scripts in Kampala, which can then be sent directly to the stations, for broadcast.

In Uganda, the weekly service gets to an estimated 7-8 million people, regularly. This is a very sizeable proportion of the farming community.

Commercial radio air-time costs can be relatively expensive for a routine broadcast, but due to the public goods nature of the information, the radio operators used by FOODNET have agreed to disseminate this information at subsidised costs. Commercial rates for radio in Uganda are currently in the region of US$ 150-200 per minute, but most stations charge FOODNET in the region of $35-45 for a weekly 15 minute slot.

● Newspapers

FOODNET weekly price data sheets are published in one of the leading newspapers and in a local advertising publication, the "Weekly Ad".

●SMS mobile phone

Recently the FOODNET project has developed a partnership with a local Short Message Service (SMS) company, on the MTN network, so that market information can be disseminated to mobile phones. Information from the Kampala markets are loaded onto the SMS platform on a daily basis and provincial information from the 17 upcountry centres is updated weekly. The development and wide usage of mobile phones, linked to the SMS service, offers the opportunity to develop a near real time commodity price service through the GSM mobile phones across the country. Price data is obtained by the user simply by typing in a keyword, such as MAIZE, and sending this message to the SMS service provider's database. After 3 or 4 seconds the caller will receive a return SMS message with the data attached. The message might appear as follows on the phone screen.

*Maize-UGS/KG-W/SALE:Kla225 Aru350 Glu200 Iga210 Jja210 Kab230 Kse180 Lra220 Lwr300 Msk350 Msi200 Mbl230 Mbr275 Rki180 Sor250 Tro250. FOODNET * RADIO WORKS 7/02/04*

All the market agents have recently been equipped with mobile phones, which has opened up new possibilities for data flow and FOODNET is exploring the opportunities to use this new data platform as a means to establish a trading portal, such that buyers can make offers and traders can enter a website to provide bids and make contact with potential sellers.

The local MIS service

The local market information service was established through funding from CTA in 1999. Using this pilot funding, FOODNET was able to develop a new structure to reflect the ideas and strategies laid out in the government's Plan for Modernisation of Agriculture, (2000). The service hired staff (who worked independently from those employed by the national service) on short term contracts to collate information. A long term working relationship was fostered with private sector radio companies who were able to disseminate this information at the local level. This process of pilot testing lasted for 2 years. The aim was to see if it was possible to develop a low cost service that could provide market information which was relevant to local communities consisting of a total of almost two million people within defined local territories.

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When the service had shown itself to be both effective and popular with farmers groups, FOODNET made a proposal, as part of a competitive bidding process to the Government's National Agricultural Advisory Service (NAADS), to sustain and extend this service. The proposal was accepted.

The localized service developed a website to store information, but uses local FM radio and group meetings to disseminate market information. The biweekly radio bulletins are supplemented with educational s information, in pre-recorded documentary style and theatre programming, to enable the farming community to understand how to use market information effectively. The use of ICT to collate and distribute information technology was also supplemented by group training sessions on how to use market information within a collective marketing situation. This process of supporting face-to-face capacity building with continuous information provision has proven to be extremely popular with the farming communities in the target districts.

In 2003-2004, the localized information service has increased in coverage from 3 initial districts to 6 districts with initial plans to extend the programme to 24 districts in the next 2 years. To encourage competition in the area of service provision for market information, the NAADS programme developed a competitive tendering process to develop their service, such that organizations such as FOODNET, which have a recognized competence in this area, could bid for the contract to deliver such a service over a one to two year period. Although this process has started with encouraging results, the NAADS management group may decide to end or curtail the programme due to funding constraints.

Regional market information service

In addition to the Uganda services, FOODNET also set out to enhance market information services at the regional level in eastern Africa - Kenya, Tanzania, Uganda and Rwanda. In this case new approaches were required. Gathering and disseminating information across several countries incurs many problems as the target audience is of two kinds - a limited number of sophisticated, large, formal traders and a larger number of cross border, informal traders. Information gathering has been achieved through monthly "dialogue groups" and Internet connectivity. Dissemination of information is made through Internet, email and most recently via a Pilot WorldSpace Network. The WorldSpace dissemination was conducted in collaboration with RadioWorks to establish communication networks with clients where Internet was unavailable.

World Space

In Africa, the promise of the Internet has not been realised in most rural areas due to lack of landline telephone connectivity. It is likely that this situation will remain for some time. To address this problem, FOODNET in collaboration with RadioWorks and WorldSpace developed and pilot tested a satellite based digital radio system to transfer data from the Radioworks website http://radioworks.africacentral.net/, to clients via World Space digital radios. This process enabled the regional marketing team to send both data and more complex information - maps, graphics and voice data - to remote non-Internet sites on a regular basis. Ideally, FOODNET would like to implement such a system through V-Sat technology, which would provide two way connectively but at present this is too costly to set up and maintain. See Annex 2 for current coverage area.

Worldspace has two data transfer systems, one automated system and a closed user group. The automated version is low cost and should provide regular transmission but was found to be too unreliable for a commercial service. The closed user group has the advantage that it is fast and can be controlled by the user. Unfortunately, the closed user group too expensive for most uses at 10 Euros per megabyte.

## Health Agencies

Several organisations working in Uganda on issues other than agriculture have developed programmes involving communication with rural communities. Those organisations concerned with health issues probably have the greatest involvement in rural communications.

HIV/AIDS is widespread in Uganda but, among African countries, Uganda is said to have a very successful recent record of combating the disease. Other health priorities are malaria, pre and post natal care and certain water-born diseases.

Population Services International (PSI)

More than a dozen well funded agencies work to combat HIV/AIDS in Uganda and PSI is one of the largest. Their main task is to educate the population in the causes and prevention of the disease. Despite some ideological differences between the agencies on the best form of prevention, PSI co-ordinate their work with the other agencies in regular meetings. They also work closely with the Ministry of Health and the various relevant UN agencies.

These agencies have concluded that radio is a powerful tool in getting their message across. Their messages (or 45 second 'spots', as they are called) are broadcast by every radio station in Uganda and a recent survey concluded that about 66% of the population listen to these programmes. Air time for these messages has to be paid for by the agencies. The cost of air time is a significant component of the cost of the HIV/AIDS campaign.

In addition to the broadcasting of informative messages, the agencies have found more imaginative and effective ways of informing the population about the disease. They sponsor a large number of radio talk shows and question and answer sessions on the topic and have even commissioned a radio soap opera in which the themes of their educational programme are played out by actors in a dramatic form. The 30 minute, 13 part soap opera has cost approximately US$ 30,000 to make and disseminate of which half was taken up with air-time costs. PSI and other agencies have been in discussion with government to persuade them that air time for this important issue should be given free of charge but there has not yet been a conclusion to these discussions.

Some agencies also take advantage of a facility provided by the Ministry of Health. It seems that the Ministry owns two or three mobile van units with film or video projector equipment. These vans tour rural areas and show health education material in villages and towns throughout the countryside. They are, apparently, very popular but the small number of such units is thought to be inadequate to cover a population of 24 million.

Food and Agricultural Organisation (FAO)

Some radio station operators were of the opinion that FAO-produced farm programmes had been aired in the past. The local FAO representative, however, had no knowledge of these programmes and expressed the opinion that the programmes might have been made available to radio stations by their headquarters in Rome. The local FAO office has, apparently, been reorganised recently.

**Annex 1**

Organisations offering support for rural radio in developing countries

<u>Food and Agriculture Organisation of the United Nations</u>  - www.fao.org

The FAO offers a wide range of services to groups wishing to communicate with rural communities.

It has developed a communications network – FarmNet – which brings together rural people and supporting intermediary organisations, such as extension services, using ICTs and rural radio - facilitating, generating, gathering and exchanging knowledge and information. Such information may include agricultural market information when such needs exist.

The organisation makes assessments of local information needs, provides electronic network designs, basic equipment, logistical support, technical training and technical backstopping.

In Egypt the FAO has pioneered a virtual extension and research communication network – VERCON – which aims to harness the potential of the internet and apply it to strengthening and enabling linkages among the research and extension components of the national agricultural knowledge and information system. The overall goal of VERCON is to improve the agricultural advisory services provided to Egyptian farmers and, in particular, to resource-poor farmers with the goal of raising farm incomes. The VERCON linkages are made through on-line computers operated by researchers, extension workers, policy makers and farmers' organisations.

<u>Developing Countries Farm Radio Network</u> – www.farmradio.org

This Canadian based, not-for-profit organisation has been established for 25 years. They support broadcasters in meeting the needs of local small-scale farmers and help broadcasters in over 70 countries to counter poverty and food insecurity.

The organisation's function is to gather information about successful, low cost practices in sustainable agriculture and produce radio scripts adaptable to local conditions for 500 partner radio stations.

They also introduce partner organisations to training providers and link them with organisations offering agricultural support.

Developing Countries Farm Radio Network works with many other development and communications organisations.


Inter World Radio – www.interworldradio.net

This agency is part of Panos International which is going through a funding crisis and may not be able to perform as well in the future.

IR is a free global network for radio stations and journalists – making, exchanging and distributing news and programmes about world issues and 'local contexts'. They specialise in the African region with programmes about HIV/AIDS, development and aid news and culture.

The web site allows journalists to download hardcopy or audio versions of programmes for radio broadcasts or for translation and these programmes can be listened to online.

They employ journalists to interview people on certain topics in various developing countries.

Membership is free.

Oneworld radio – www.oneworld.net

Oneworld radio is an agency which produces a variety of programming and news services of interest to developing countries.

Wren Media and AGFAX www.mdiawren.demon.co.uk and www.agfax.net

Wren Media offers consultancy and training services for broadcasters and radio journalists working in developing countries. Courses are practical and encourage creativity and fresh approaches to making programmes.

AGFAX is part of Wren Media and produces press and broadcast material on agricultural and development issues.

The AGFAX radio service offers the opportunity for regular radio interviews to be broadcast in English and/or local languages by national, regional and community-based

radio stations. The AGFAX website contains the library of radio programmes in audio form which can be recorded free.

The AGFAX press service serves to inform rural and urban readers on a variety of topical agricultural and development subjects. Press articles are distributed, with appropriate photographs from their photo library, to leading Anglophone newspapers and development journals in Africa and Asia and to international development journals published in the UK.

BBC World Service Trust – www.bbcworldservice/trust

The BBC has designated its World Service Trust as the institution to make and distribute rural development and agricultural programmes for a developing country audience. It has a budget of £7 million a year donated by government, UN and NGO organisations and uses core BBC World Service facilities.

Programmes have a wide range of topics and are often linked to development projects.

Topics range from development issues, education, health, security, corruption - sometimes delivered in the form of drama series (soap operas) or discussion programmes. Linkages to development projects incorporate training for development country radio operators.

Programmes can be used by local radio stations and can be broadcast on state radio networks.

See case study – From Canoe to Computer.

CTA (Technical Centre for Agriculture and Rural Co-operation) - www.cta.nl

The CTA Rural Radio Programme is aimed at strengthening the links between extension workers and farmers and promoting knowledge-sharing between farmers. It is designed to encourage the use of rural radio to disseminate scientific and technical information. The beneficiaries of the project include rural radio programme producers and managers, extension workers and farmers.

Distribution is made in the form of a pack which contains a 30 minute cassette and CD, a transcript of the programme, which is in the form of an interview and an introduction page for the presenter.

Some 40 topics are covered by the range of tapes on technical aspects of tropical agriculture and on managing financial aspects of farmers and farmer groups.

Simbani News Agency – www.simbani.amack.org

Simbani is part of the Amarc association of community radio stations.

The organisation has about 20 correspondents attached to member radio stations in Africa. These correspondents have received training and continue to receive back-up from the organisation. This support includes provision of computers, software and internet connectivity.

These correspondents produce content for distribution to 364 other member community radio stations via the organisation's website on a daily basis. Simbani also broadcasts weekly thematic features with audio. The focus topics are – gender, the environment, sustainable development, human rights – democracy, elections and conflict resolution, food security and agriculture and HIV/AIDS.

Programmes are made in English and French for translation into local languages by the correspondents.

The organisation also concerns itself with women's networks, lobbying and advocacy and sustainable radio.

The main donor to the organisation is FAO.

Commonwealth Broadcasting Association – www.cba.org.uk

The CBA is a part of the Commonwealth organisation and is an association of mainly state controlled radio and TV corporations.

The CBA working with the Thomson foundation and many other organisations offers bursaries for courses in broadcast journalism, presentation skills, broadcasting technology, editing and producing. Other bursaries are available for travel costs which can be used by radio journalists in job exchanges and to visit other countries to make programmes about them.

The organisation publicises its work and news about radio developments around the world in its quarterly magazine *Commonwealth Broadcaster*.

Organisations offering bursaries for radio-linked study courses

Knight Science Journalism Fellowships – boyce@mit.edu

Michener-Deacon Fellowship – www.michenerawards.ca

Reuters Foundation Fellowship Program at Oxford University – Foundation@reuters.com
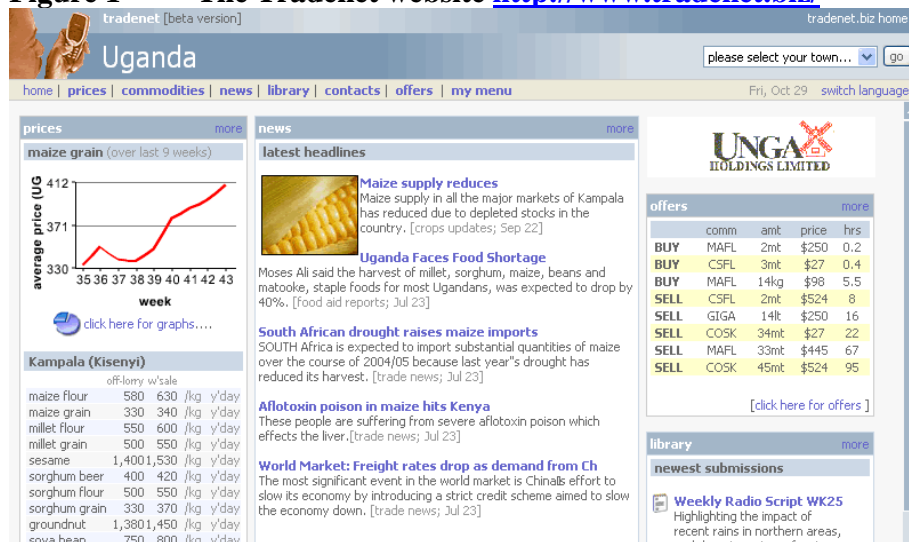
Common Ground Media Fellows Program – gkulick@sfcg.org

Foster Davis Fellowships for African Students – leela@iaj.org.za

**Annex 2**
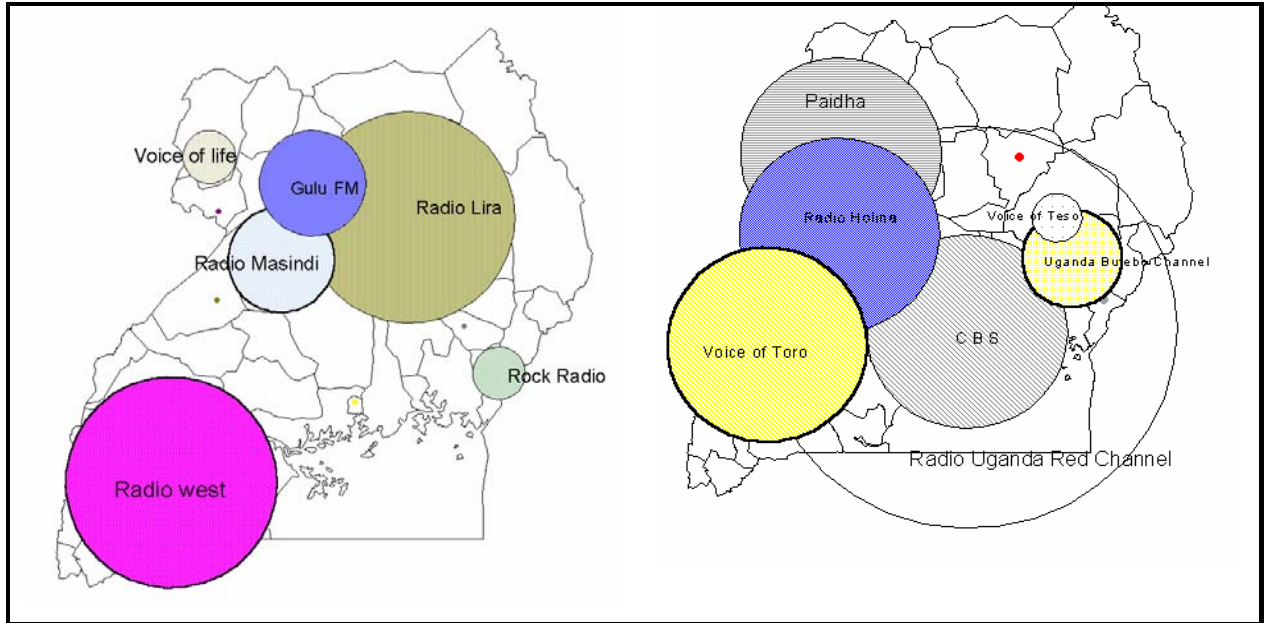
**FOODNET diagrams and charts**

**Figure 1        The Tradenet website http://www.tradenet.biz/**



Foot prints of radio stations that are linked via WorldSpace dissemination.

**Radio coverage for the Market information service in Uganda**

**The list of commodities collected.**

| Daily Prices | | Weekly Prices | |
|---|---|---|---|
| CROP | Markets | Commodity | Market |
| Onions | Markets | Matoke | Arua |
| Maize Flour | Owino | Fresh Cassava | Gulu |
| Maize Grain | Kisenyi | Sweet Potatoes | Iganga |
| Millet Flour | Nakawa | Beans | Jinja |
| Millet Grain | 3 Commercial buyers | Beans Other | Kabale |
| Rice Threshed | | Cassava Chips | Kasese |
| Sim Sim | | Cassava Flour | Kitgum |
| Sorghum Beer | Levels | Groundnuts | Lira |
| Sorghum Flour | Wholesale | Maize Grain | Luwero |
| Sorghum Food | Retail | Maize Flour | Masaka |
| Beans Large | Off Lorry | Millet grain | Masindi |
| Beans Medium | | Millet Flour | Mbale |
| Beans Mixed | | Rice | Mbarara |
| Beans small | | Simsim | Rakai |
| Cowpeas | | Sorghum | Soroti |
| Groundnuts | | Sorghum flour | Tororo |
| Grams | | Soya beans | |
| Soya | | Sunflower | |
| Cocoa | | Cattle steak | Levels |
| Ginger | | Chicken | Wholesale |
| Sunflower | | Goat | Retail |

| | | | |
|---|---|---|---|
| Banana/Matooke | | Fish | Off Lorry |
| Cassava Chips | | Milk (one litre) | |
| Cassava Flour | | | |
| Cassava Fresh | | | |
| Potato Irish | | | |
| Potato sweet | | | |

## Persons interviewed between 11<sup>th</sup> and 16<sup>th</sup> October 2004 for this report

Broadcasting Council – Dennis Lukaaya – Executive Director
Broadcasting Council – Karungi Anne – Head – Research Department
Central Broadcasting Service Ltd. – Joe Burua Stephen – Marketing Executive
Central Broadcasting Service Ltd – Semuddu Daniel – Marketing Executive
DfID – Dr Alan Tollervey – Rural Livelihoods Adviser
Food and Agricultural Organisation – Okoth James Robert – Programme Assistant
FOODNET – Emily Arayo
FOODNET – Geoffrey Okoboi
FOODNET – Kelly Wanda
MTN Business Solutions – Jackson Secomate
Ministry of Finance – Peter Ngategize – National Co-ordinator – Competitive Strategy
National Agricultural Advisory Services – Alyce Nakagwa – Communications Officer
National Agricultural Advisory Services – Francis Byekwaso – Evaluation Manager
National Agricultural Advisory Services – Hugh Bagnall-Oakeley – Technical Adviser
National Agricultural Advisory Services – Sally Bastow – Technical Adviser
Population Services International – Dr Susan Mukassa
Radio Uganda - Charles Byekwaso – Controller of Programmes
RadioWorks – Gordon Bell - owner
Small Enterprise Media in Africa – Gavin  Anderson – Technical Specialist

Uganda Communications Commission - Arthur Muhangi – Project Officer – RCDF

# References

**Plan for Modernisation of Agriculture: Eradicating poverty in Uganda** – Ministry of Agriculture and Finance – Uganda – 2000

**Community access to marketing opportunities: Options for remote areas** – Ulrich Kleih, Willie Odwongo and Clement Ndyashangaki – Natural Resources Institute and the Agricultural Policy Secretariat, Kampala – 1999

**Information for Agricultural and Rural Development in ACP countries: New stakeholders, new media and priority themes –** CTA – Wageningen - 2000

**Rural communications development policy for Uganda -** Uganda Communications Commission - 2001

**Corporate profile -** Uganda Communications Commission **-** 2004

**Draft Broadcasting Policy: A new broadcasting aspiration for Uganda –** The Broadcasting Council - 2004-11-08

**NAADS and marketing: A draft strategy –** NAADS - 2003

**Research project on decentralised market information services in Lira District, Uganda: Baseline study carried out in five sub-counties on farmer livelihoods and**

**needs and sources of information –** Monica Janowski, Ulrich Kleih and Okoboi Geofrey – Natural Resources Institute - 2003

**Communication strategies in the age of decentralisation and privatisation of rural services: Lessons from two African experiences –** Ricardo Ramirez and Wendy Quarry – ODI Agricultural Research and Extension Network - 2004

**Languages of Uganda** – Ethnologue.com

**Market information services: Theory and practice –** Andrew Shepherd – FAO - 1997

**MTN Product Handbook** – MTN -  2004

**Business radio programmes** – (conference paper) - International Labour Organisation - Small enterprise media in Africa project – Uganda - 2004