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### Forging New Partnerships: Lessons from the Dissemination of Agricultural Training Videos in Benin

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# Forging New Partnerships: Lessons from the Dissemination of Agricultural Training Videos in Benin

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**ABSTRACT** Purpose: *This article evaluates the dissemination and use of rice training videos by radio stations, farmers, farmer associations and extension services in Benin. It pays attention to positive deviants and process innovation within a 'hands-off experiment'.*

Design/methodology/approach: *Using questionnaires and checklists we interviewed leaders of radio stations, extension services of nine municipalities and organized focus discussions with 13 farmer associations. Interviews focused on the processes of video dissemination/acquirement and the use and usefulness of the video.*

Findings: *The commercial radio of Glazoué developed persuasive adverts and sold most of the 240 VCDs to farmers and extension services, whereas the community radios distributed most VCDs free of charge. About 20% of all the VCDs were sold, suggesting that farmers are eager to invest in acquiring knowledge. Extension services acquired the rice videos in various ways, indicating the need to inject videos via multiple pathways into the agricultural innovation system. Watching the farmer-to-farmer videos during staff meetings gave extension agents more confidence to interact with farmers.*

Practical implications: *Videos do not need to be distributed to all farmer associations in the same village, as dissemination may take place between different associations. Farmers appreciate watching videos with their families if they are available in their local language. When suitable language versions are not available, group viewing is more appropriate.*

Originality/value: *The farmer-to-farmer rice videos have created a momentum in Benin and across Africa, especially in the current context of rapid changes in the agricultural systems. The newly established non-governmental organization Access Agriculture aims at further supporting video-mediated learning in developing countries.*

**KEY WORDS:** Video-mediated learning, Rural radio, Agricultural advisory services, Farmer organization, Rice, Africa

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## **Introduction**

Rice is gaining importance in Benin Republic. However, local rice production cannot keep pace with the increasing demand for consumption. To increase local rice production the government and the national research institute together with the Africa Rice Center (AfricaRice) engage in supporting farmer training through the dissemination of adapted technologies. Recently video-mediated learning has gained importance across Africa (Van Mele et al. 2010b). Good quality videos merge theoretical notions contained in books, booklets, research notes and local practices by having farmers show and explain how the concerned technology works. Farmer-to-farmer videos can be made in such a way that they allow for cross-cultural learning (Van Mele et al. 2010a; Bentley and Van Mele 2011). Various studies in Benin have shown the power of quality farmer-to-farmer videos to trigger women rice processors to innovate and to organize as a group (Zossou et al. 2009b, 2010). Videos proved more powerful than traditional face-to-face training workshops in triggering change (Zossou et al. 2009a).

To reach as many farmers as possible AfricaRice, in collaboration with several national African research institutes and non-governmental organizations (NGOs), has developed a series of 11 videos dealing with various aspects of rice production, postharvest and processing. These videos have been translated into the main local languages of Benin. In 2009 AfricaRice distributed about 2000 video compact discs (VCDs) to 25 local radio stations in 25 municipalities of Benin. It was expected that farmers, farmers associations and extension services would receive VCDs from the radio stations.

This experience of video dissemination took the form of a ‘hands-off experiment’ whereby AfricaRice as initiator limited its role to mere end delivery of quality learning tools. The local radio stations received as many VCDs as they wanted and were encouraged to use them and to distribute them to farmers, farmer associations and extension services. No formal agreements or written contracts were made. This loose experimental set up offered the possibilities to document and analyse positive deviants within systems: understanding ‘champions’ who emerged in unplanned developments (Biggs 2008). These often yield better insights into how to move ahead in the long term in a sustainable way, such insights may go unnoticed if everything has been properly planned, implemented and monitored in a project mode (Leeuwis 1995).

Three years after AfricaRice started disseminating the VCDs, the current study started to evaluate the ways in which radio stations disseminated the VCDs and used their content to build their agricultural programmes and to analyse how extension services, farmers and farmer associations used these videos.

## **The theory of deviancy and its application in this study**

As a response to the critique that the study of functionalism often fails to address human agency, Merton (1957) and Parsons (1961) posit the theory of deviancy. According to Merton (1957) individuals can deviate from social norms considered to be the standards of the group they live in (Warren 2003). Hence both the positive and the negative deviants coexist in social settings. Following Pant and Hambly Odame (2009) the positive deviants rebel openly and challenge the legitimacy of social norms

through their self-determination and aspiration to achieve social goals. In other words, they challenge the structural means (means that could constrain them) but accept the socially defined goals, while the negative deviants challenge both structural means as well as goals. An individual's aspiration to succeed or a project's aspiration to make changes involves accepting social goals and is often determined by structurally defined means, such as access to physical resources and favourable social and organizational environments (Pant and Hambly Odame 2009). Positive deviants are thus those who accept social goals and values despite having little or no access to structural means to achieve those goals, or they simply deny structural means for a good reason. Positive deviants are therefore powerful agents of change. They believe in innovation and change through self-determination, self-control or self-realization. They initiate change in spite of difficult social and organizational environments (Pant and Hambly Odame 2009).

In the context of this study, the concept of positive deviancy refers to the creative ways managers of radio stations used the videos in spite of their structural constraints, namely the lack of resources to properly cover operational costs to sustain the existence of the radio. Here the standard (norm) is that any services the radios offer should be paid. The positive deviants would go beyond this norm, find creative ways (strategies that use fewer or no resources) to broadcast the contents of the videos, advertise and distribute the videos to farmers for the sake of the commonly shared goals of improving rural livelihoods. Furthermore, the concept of positive deviancy has only recently been introduced into development. Here deviancy could be seen as emerging properties; the unexpected outcomes that emerge from the interaction between the innovation actors and their environments (Klerkx, Aarts and Leeuwis 2010). Hence paying attention to positive deviancy when evaluating a project allows documenting spontaneous behaviour that has led to unpredicted good output.

## **Methodology**

The study took place in Benin Republic from February–September 2012. Data were collected in nine municipalities selected to represent different zones of rice production in the country and to reflect various socio-economic realities. The selection started with the list of 25 radio stations (each of which belongs to one municipality) that had received VCDs from AfricaRice from 2009–2011. From this list the nine studied municipalities were selected: Kétou, Covè, Comé, Dassa, Glazoué, Bassila, Djougou, Ouaké and Tanguiéta. In each municipality we collected data from the radio stations, the extension services and rice growing farmer associations.

We used a questionnaire to collect data from the nine selected radio stations. The questionnaire addressed issues related to the type of radio (community and commercial radio) nature of the funding sources of the radios (community funds, project or international partnership, private funds, governmental subsidies, and so on), the broadcast focus of the radio, existing programmes on agriculture, frequency of broadcast, languages of broadcast, sources of technical information to build agricultural programmes, process of VCD dissemination, including related success stories and difficulties of fully distributing the VCDs, suggestions for improvement and so on. At each radio station we interviewed the director, his delegate and radio programmers who had received a stock of VCDs from AfricaRice.

At the extension service of the selected municipalities we used checklists to interview the office managers and technicians in charge of crop production or food processing. Interviews were organized in groups of two–six people. Issues discussed related to the contribution of the video content to their training agenda, the ways the videos have been used, the number and types of training events organized, the number of staff who viewed the video, the number of group viewings organized using the videos, equipment used to organize group viewings and recommendations for further improvement of video content.

We organized focus group discussions with 13 farmer associations. Each discussion lasted about an hour and included on average 11 farmers. In focus groups, we discussed the relevance of the technical information contained in the videos, the number of group viewings organized, the ways the video content contributed to improve farmer's technical knowledge and so on.

Data gathered were stored and managed with ACCESS. Relevant data used for this paper were extracted, coded and analysed with Excel and SPSS using a range of descriptive statistics and tables to display and describe tendencies and contrasts among radios, extension services and farmer organizations. We used quotes to bring informants' views into the analysis either as testimonies or as concluding statements. We used perception analysis to appreciate the relevance of the contents of the video to radio managers, extension services and farmers. This helped open the floor to discussions of factors that prevent the use of the videos by radio, extension and farmers and to appreciate how some stakeholders innovated to deal with them. Such innovations termed 'below-the-radar' innovation by Klerkx, Aarts and Leeuwis (2010) are not induced by policy or research. They emerge from the bottom up and are sources of change (Hall and Clark 2009).

### **Definition of concepts**

*Community radio* refers to not-for-profit radio, funded by donors (local or international), with or without contribution from the community. These radios obtained additional funds from advertisements and contractual programmes with development organizations. Their broadcast primarily targets their community.

*Commercial radio* refers to for-profit radio, funded and led by the private sector. They often target a larger audience that goes beyond the community where the radio is located.

Both commercial and community radios aim to serve their community by informing, educating and improving the socio-economic conditions of the radio listeners.

### **Results and discussion**

#### *Profile of the studied radio stations*

The visited radio stations had on average 13 years of experience. This relatively limited experience reflects the fact that non-governmental radio stations have only been allowed in Benin since the early 1990s. About 78% of them were community radio stations (Table 1). This means they operate primarily at the local level, although most of them own equipment that could easily allow them to enlarge their coverage

**Table 1.** Description of radio stations surveyed.

Name of radio (location)	Type of radio	Funding sources	Focus of broadcasts	Agriculture-related programmes			
				Name of programme (year of first broadcast)	Language of broadcast	Sources of technical information	Air periodicity (per week)
Alaketu (Kétou)	Community	International partners (e.g. Swiss cooperation), advertisements, contracts for programmes	Agriculture (90%), trade (10%)	<i>Echange thématique agro-pastoral</i> 'Agro pastoral thematic discussion' (1999)	Nagot, Holi, Fon	CeCPA, farmer association of Kétou, progressive farmers	Three times
Tonasse (Covè)	Community	Private, advertisements, contracts for programmes	Agriculture (50%), animal husbandry (25%), fishery (15%), food processing (10%)	<i>Toglé dji</i> 'In the field' (2002)	Fon	CeCPA, NGO (CEBEDES), AfricaRice (video)	Once
Ilèma (Dassa)	Community	Private, advertisements, contracts for programmes	Agriculture (70%), food processing (20%), craft (10%)	<i>La terre ne ment pas</i> 'Land does not lie' (1999)	Idaatcha	CeCPA, farmer association (UNIRIZ), NGO (RAPIDEL), AfricaRice (video), retired staff of CeCPA Farmers and CeCPA	Once
				<i>Glé xo</i> 'Agriculture related business/ issue' (2008)	Mahi		Once

*(continues)*

Table 1 (Continued)

Name of radio (location)	Type of radio	Funding sources	Focus of broadcasts	Agriculture-related programmes			
				Name of programme (year of first broadcast)	Language of broadcast	Sources of technical information	Air periodicity (per week)
				<i>Wakplon nu gnyonin</i> 'Come acquire knowledge' (2009)	Idaatcha, Mahi	CeCPA, projects (e.g. ProCoton) Farmer Association (UNIRIZ), AfricaRice (video)	Twice
Collines FM (Glazoué)	Commercial	Private, advertisements, contracts for programmes	Agriculture (50%), trade (50%)	Interactive thematic debates depending on demand (2004)	Variable <sup>a</sup>	CeCPA, market-oriented farmers	Once or twice
Radio Comé (Comé)	Commercial	Private, advertisements, contracts for programmes	Agriculture (50%), trade (25%), fishery (25%)	Agblédétowo bé gapo 'The time of farmers' (2008)	Watchi	CeCPA	Twice
FM Kouffe (Bassila)	Community	International partners (Swiss cooperation), local community, advertisements, contracts for programmes	Agriculture (50%), animal husbandry (20%), food processing (15%), trade (15%)	<i>Mieux produire</i> 'Increase production' (1999)	Anni, Nagot, Kotokoli, Lokpa, Ditamari,	CeCPA, farmer association (e.g. Rice growers and cashew growers), NGOs (e.g. AGEDREN), projects (e.g. GiZ funded projects)	Four times

(continues)



Table 1 (Continued)

Name of radio (location)	Type of radio	Funding sources	Focus of broadcasts	Agriculture-related programmes			
				Name of programme (year of first broadcast)	Language of broadcast	Sources of technical information	Air periodicity (per week)
Solidarité FM (Djougou)	Community	International partners (Swiss cooperation), advertisements, contracts for programmes	Agriculture (65%), animal husbandry (25%), food processing (10%)	<i>L'heure de l'enseignement agricole</i> 'Agriculture teaching hour' (1998)	Dendi, Yom, Lokpa	Farmer association, projects (e.g. PAFIRIZ) literature search, internet, CeCPA	Three times
Radio Rurale Locale Ouaké (Ouaké)	Community	International partners, advertisements, contracts for programmes	Agriculture (40%), animal husbandry (20%), trade (20%), food processing (20%)	<i>Le paysan au champ</i> 'Farmer in the field' (1999)	Lokpa, Foodo, Peulh	CeCPA, INRAB, Technical notes from PADSA and MAEP, internet, AfricaRice (videos), retired staff of CeCPA	Three times
Radio Rurale Locale Tanguiéta (Tanguiéta)	Community	International partners, advertisements, contracts for programmes	Agriculture (90%), craft (10%)	<i>Techniques agropastorales</i> 'Agro pastoral techniques' (1994)	Biali, Waama, Gourmantché, Naténi, N'Bermè, Dendi	Projects requesting a programme), CeCPA, progressive farmers, IITA (PICS project)	Six times

Notes: a = Language of broadcast depends on the clients and the target groups.  
Source: Fieldwork 2012.

area. The other radios (22%) were profit-driven. However, in practice one hardly sees clear differences between community and commercial radios as far as their operation is concerned. They both look for external support, contract for radio programmes (from projects, NGOs, governmental organizations, private agro dealers, and so on) and advertisements to meet their operational costs. The community rarely pays its financial contribution to the community radios. Da Costa (2012) reports that in many other regions of Africa a strong dependency of local radio stations on external funds may hamper their sustainability. We did not dive into this aspect in this study but for all radio stations studied the common ground was that the radio should be self-funding and as such any activity the radio embarks on should adequately cover related operational costs.

Access to power is fundamental to a proper functioning radio station. In the study area, the radios the national power authority (Société Béninoise d'Énergie Electrique—SBEE) supplied with power said they were able to reduce their operational costs. Radio FM Kouffè and radio Ilèma operated mostly on a generator. All other stations also operated a generator as secondary source of energy.

The radio stations mostly obtain funds from international partners, except for the commercial radios of Comé (Radio Mono FM) and Glazoué (Radio Collines FM) and the community radios of Covè (Radio Tonassé) and Dassa (Radio Ilèma), which are mostly funded by private entrepreneurs. All complemented their operational budget with money from adverts and from contracts with NGOs and projects that occasionally request their services (Table 1). The radio stations operated only part-time to reduce operational costs.

As per their constitution, local radios commit to the development of their community. They all broadcast in local languages with summaries in French (Table 1) and adapt their programmes to local realities and economic activities. They all organize debates, round tables, interactive thematic discussions, magazines and quizzes. Radio Ilèma is located in quite a remote area with a poor telephone network, disrupting interactive thematic discussions.

Agricultural programmes are organized using any of these broadcast formats depending on the objectives and the target groups. The radios focus their broadcasts on six income-generating activities, namely agriculture (62%), followed by trade (13%), animal raising (10%), food processing, fisheries and craft (Table 1).

All the studied radio stations have specific programmes on agriculture, except for the commercial station Collines FM of Glazoué, which only has agricultural programmes when requested by projects, NGOs and farmer associations. From the moment they were created all other radio stations initiated agricultural programmes and permanently included these in their schedules. Consequently, radio programmers continuously look for technical information to build their agricultural programmes. The periodicity of broadcast of agricultural programmes varied. The languages of broadcast depended on the target groups and the major ethnic groups in the area (Table 1). As sources of technical information, radio managers listed first the governmental extension service, the CeCPA (Centre Communal de Promotion Agricole) and retired staff of the extension services, followed by farmers and farmer associations, NGOs and projects. Other sources were the national and international research institutes, for example, AfricaRice through its series of rice videos, the

internet and technical notes from the libraries of the Ministry of Agriculture and project offices.

This section highlights the commitment of rural radio stations to the development of their community. Agriculture emerges as the priority for radio stations but their broadcast efforts on agriculture are constrained by their structural means. The following section examines what radios did with the local language rice VCDs as a source of technical information.

#### *Uses of videos by rural radio stations*

None of the visited radio stations organized public village video shows. The major reason expressed was the lack of equipment and financial resources to cover expenses. Nevertheless, 33% of the radios (radio Ilèma, radio Ouaké and radio Tanguiéta) invited farmers at their stations to watch the videos (Table 2). Radio Ilèma used a laptop to show the videos to a group of ten farmers. Radio Tanguiéta used a TV and DVD player available at their meeting room. Radio Ouaké possesses a large projection room used to accommodate 200 farmers. Clearly infrastructure constrained the radio stations differently in using the videos. They all went through various forms of self-organization to be able to provide the technical information to farmers.

The rice videos were an important source of technical information for radio staff (Table 2). About 78% of the radio stations organized video sessions for their staff. During these sessions, which often coincided with the weekly planning sessions, decisions were made on which topics to air.

Radio staff selected several topics from the videos (see Table 2) that reflected the interests and priorities of the rice producers of their area. Selected parts were extracted from the videos as audio files, and aired as such or used to organize interactive thematic discussions, round tables or quizzes. The most interesting initiatives were observed in areas where the videos were not available in the spoken languages. For instance, in Bassila radio staff summarized the videos and aired translated summaries (audio). Other creative ways of using the content of the videos at no cost consisted in airing audio sections of the videos during slots normally devoted to playing music or when a programme was cancelled. Such innovative initiatives in this hands-off experiment reflect the importance many radios programmers attached to the content of the video, hence they could challenge their structural means and norms to reach their commonly accepted objective of contributing to the agricultural development of their area by making technical information available to farmers. These are positive deviancies within the system (Biggs 2008; Pant and Hambly Odame 2009).

Video viewing sessions with staff did not always result in initiatives to broadcast (parts of) the content of the videos. Although they disseminated the VCDs, radio Alakétu in Kétou did not air any content of the videos because they said that no formal agreement had been signed with AfricaRice at the time they received the VCDs. The same reason was given by Solidarité FM (Djougou) and Mono FM (Comé), who did not make any use of the training videos.

Unanimously, radio managers mentioned that by signing contracts with organizations promoting video-mediated learning, better use would be made of videos in their

**Table 2.** Use of video content by radio stations: video viewings, theme selection and use.

Name of radio (location)	Video show to a group of people at radio station	Video show to staff and group discussion	Themes extracted from the videos	Special events around themes extracted	Comments from informants
Alaketu (Kétou)	No	Yes	None <sup>a</sup>	No action taken	A formal contract for VCD dissemination and use will strengthen partnership and yield better.
Tonassé (Covè)	No	Yes	Seed sorting, seed drying, weeding, rice quality, use of herbicides, etc.	Debate, interactive broadcast, quiz	Video shows in villages will require funds. Thorough feedback collection also requires funds (staff trips to farmers). A formal contract will secure investments from both sides (organization supporting video production and the radio investing in their dissemination).
Ilèma (Dassa)	Yes (once) Attendance: 10	Yes	Seed sorting, rice quality (extracted sequences were used as expert views during debates and round table)	Debate, round table with guest speakers, video show on laptop on campus to small group of people, air VCD at some slots normally devoted to music	Staff lacks technical knowledge in rice production to fully participate in programmes. There is no contract to encourage management to invest in staff training in rice production and to use video during well-listened periods (8.00–11.00 pm).
Collines FM (Glazoué)	No	Yes	None	Quiz (questions were extracted from videos)	We mainly sold the VCDs because the need for technical advice is real and rice producers are now market-oriented. We are also a commercial radio and need cash. We therefore emphasize quality adverts to increase demand.
Mono FM (Comé)	No	Yes	None	No action taken	We did not do anything with the VCDs. We did not know that we could sell them to earn money for our radio.

*(continues)*

**Table 2** (Continued)

Name of radio (location)	Video show to a group of people at radio station	Video show to staff and group discussion	Themes extracted from the videos	Special events around themes extracted	Comments from informants
FM Kouffé (Bassila)	No	Yes, and followed by a summary in Anni and Kotokoli	Summary of some themes were made in the local languages Anni and Kotokoli	The entire VCD (in Dendi and French) was aired when there was a lack of content to fill a programme	A formal contract between AfricaRice (promoting video mediated learning) and the radio stations would provide more incentives.
Solidarité FM (Djougou)	No	No	None	No action taken	No action was taken because we did not have a contract with AfricaRice to air audio files extracted from the videos/produce programmes. A 30-minute programme costs 50,000 CFA (US\$100). We can contribute but not pay the bill. VCDs were in Dendi whereas rice growers are Lokpa and Yom. We requested the farmer associations to distribute the VCDs.
Radio Rurale Locale Ouaké (Ouaké)	Yes Twice Attendance: more than 200	Yes	Seed sorting, land preparation	Debate, interaction thematic discussions	Contracting with village video clubs will improve impact. Many farmers used the videos as a technical guide to start their rice field. Interviews (of farmers) in the videos were the most convincing aspects. Farmer associations were very much interested.

(continues)

**Table 2** (*Continued*)

Name of radio (location)	Video show to a group of people at radio station	Video show to staff and group discussion	Themes extracted from the videos	Special events around themes extracted	Comments from informants
Radio Rurale Locale de Tanguiéta (Tanguiéta)	Yes Once Attendance : 9	No	Rice parboiling video was transformed into a short technical note	Play version Dendi of the VCD during Dendi air time (when lacking programme content or to replace agriculture programme in Dendi). Technical notes developed by staff member was aired in all six languages	Rice is not a big business for many people in Tanguiéta. Video in Biali language will reach the major rice growers of the area (Materi).

Notes: a = Prior to the introduction of the VCDs, themes similar to those contained in the videos were proposed by the promoter of Tundé SA in 2009 as his personal initiative to promote the cultivation of NERICA varieties in Kétou. These were aired as a six-month contract between Alakétu and Tundé SA.

Source: Fieldwork 2012.

agricultural programmes. Radio managers said their agreement with AfricaRice is for video dissemination and not content use (public shows, extraction of audio files, debate and interactive discussions) as the latter requires funds. As the director of Solidarité FM puts it: 'The costs to produce videos largely surpass the costs for transforming the videos in audio files, to produce magazines and other interactive programmes and to broadcast them. You better continue the good job for better impacts. We can contribute but not pay the bill.' This statement reveals that, despite the fact that all radio stations are looking for technical information to support their agricultural programmes, there is a general expectation that proactive providers of technical content should at least partly contribute to cover operational costs. The self-determination and self-organization of the managers who initiated change in spite of their difficult social and organizational environments (that is, lack of resources to properly cover operational costs) and made use of the video contents should therefore be acknowledged. The extent to which radio stations use video content should therefore be interpreted within the context of each radio. The following section depicts the processes of video dissemination by radios.

#### *Dissemination of videos by rural radios*

The wide-scale dissemination of the rice training videos was the key objective of AfricaRice, providing stocks of local language VCDs to the rural radio stations, which effectively disseminated more than 80% of the VCDs through two main strategies (Table 3). The seven community radio stations, except for radio Solidarité FM, made public announcements and invited farmers, farmer associations, NGOs and any other interested people to collect VCDs at their stations. Radio Solidarité FM in Djougou did not announce the videos, it simply transferred the stock of VCDs to the chairman of the municipal federation of farmer associations of Djougou who disseminated them to affiliated farmer associations in their villages, individual farmers, extension services and NGO staff. In addition to the public announcement, radio Ouaké also involved the chairman of the municipal federation of farmer associations of Ouaké who further sold copies of the VCDs. The commercial radio Collines FM in Glazoué went beyond public announcements. Through persuasive adverts they were able to sell 63% of the 240 VCDs received. In contrast, and although they also said they needed to cover their operation costs, most community radio stations sold only a few copies of the VCDs (Table 3). Radio Mono FM, contrary to all the other radios did not sell or distribute a single copy of the VCDs. They said they were not aware that the VCDs could be sold.

Overall, 22% of the 910 VCDs distributed freely to the radio stations were sold to individual farmers, indicating their eagerness to invest in quality agricultural training videos. This will need more follow up, as managers of community radio stations thought that farmers would not be motivated to buy training materials.

The staff of radio stations gathered the impressions of farmers on the content of the videos mostly during interactive thematic discussions and quizzes (Table 3). In Dassa, the radio station has a poor telephone connection and farmers are encouraged to send letters. The survey 'radio trottoir' organized by radio Ilèma and Collines FM was meant to study burning societal issues. During this activity farmers often reported on the videos.

**Table 3.** Methods of VCD distribution and feedback collection by rural radios.

Name of radio (location)	% VCD distributed	Method of awareness raising	Mode of VCD distribution	Method of feedback collection from acquirers
Alaketu (Kétou)	94 (n = 150)	Announcement	Sales: 6 Gift: 135 (120 VCDs to farmer associations, 10 to individual farmers and 5 to staff of the radio)	Farmers call during interactive broadcasts
Tonassé (Covè)	92 (n = 120)	Announcement	Sales: 5 Gift: 105 to winners of quizzes on agriculture and to individual farmers	Farmers witness during interactive broadcasts Quiz
Ilèma (Dassa)	64 (n = 120)	Announcement	Sales: 0 Gift: 77 (farmers, farmer associations and NGOs)	Survey 'radio trottoir' Letters from farmers
Collines FM (Glazoué)	100 (n = 240)	Advertisements in three languages (Mahi, Idaatcha, French) at least three times a day	Sales: 150 Gift: 90 to winners of quizzes and to individual farmers who requested copies after they participated in quiz	Surveys 'radio trottoir' Phone calls from farmers
Mono FM (Comé)	0 (n = 40)	No action taken	na	na
FM Kouffè (Bassila)	100 (n = 20)	Announcement	Sales: 6 Gift: 14 (farmer associations and individual farmers)	No feedback collected
Solidarité FM (Djougou)	100 (n = 20)	Transferred VCD to the chairman of the federation of the farmer associations of Djougou	Sales: 0 Gift: 20 (CeCPA, NGO, farmers and farmer association)	No feedback collected
Radio Rurale Locale de Ouaké (Ouaké)	100 (n = 100)	The chairman of the federation of the farmer association sold most of them	Sales: 30 Gift: 70	Phone calls from farmers
Radio Rurale Locale de Tanguiéta (Tanguiéta)	100 (n = 100)	Announcement Only the president of one farmer group collected a copy from the radio station. Radio staff paid visits to other farmer associations to distribute copies.	Sales: 0 Gift: 100	No feedback collected

Notes: A VCD was sold at 500 FCFA (US\$1). na = not applicable.

Source: Fieldwork 2012.



The managers of the radio stations said that farmers were generally satisfied with the quality of the videos, the usefulness of the technical advice and their adaptation to their specific context. In some cases, such as in Djougou and Bassila, farmers regretted the non-availability of the videos in their own local language. This is a particular challenge for Benin where over 70 local languages are spoken, often by relatively small groups. Although this hampered farmers' understanding of the content to some extent, they said they grasped various aspects by attentively watching the videos.

As the VCDs were handed over to the radio stations without any accompanying action plans and budgets, none of the radio stations had systematically documented farmers' feedback. Most of the radio staff did not know either that they had to keep thorough records of their video dissemination activities. In a way this in-depth study came as a surprise to them as no one had expected any follow up of this nature whereby a social scientist stayed in their area for about three days to discuss with them, farmers and farmer associations and extension services.

None of the radio stations had visited farmers to collect feedback on the videos. The main reason given was that this activity required funding. Managers of the radios would still appreciate a formal contract with AfricaRice to more actively use the videos and collect farmers' feedback. Feedback collected via phone calls is ephemeral and generally does not end up in any written format for later use by research and development agencies.

#### *Acquisition, use of videos and video content by extension services (CeCPA)*

The rice videos reached CeCPAs in several ways. Three out of the nine extension offices visited obtained copies of the videos directly from AfricaRice (see Table 4), one (Djougou) obtained copies from the local farmer association who had obtained them from the radio station, and another (Glazoué) purchased the videos directly from the radio station at its locality. The extension agent of Glazoué who bought copies of the video from the radio did so as a personal initiative. He said the farmers he trains in rice production and postharvest management informed him of the availability of the video at the radio station. He said he purchased copies of the videos to maintain the same level of information as his farmers. The managers of the radio said that they did not receive instructions from AfricaRice to send copies to the CeCPA, and so they targeted the farmers directly and their organizations. This case of Glazoué shows that the radio stations do not always have functional relationships with the extension services.

The CeCPA of Comé obtained copies from the Question and Answer Service of ONASA (Office National d'Appui à la Sécurité Alimentaire). CeCPA staff in Bassila, Ouaké and Tanguiéta did not know about the existence of the videos. In fact, staff who received copies of the VCD often left to serve elsewhere. The massive recruitment the Benin government organized in recent years partly explains the mobility of extension staff. In Djougou, the head of the extension service, who took over his position only a few weeks before our visit, watched the videos the very day of our visit to be able to have an informed discussion with us. He believed they would be of good use to the extension service in Djougou since he was serving in a nearby CeCPA with similar conditions. To ensure extension officers benefit and make good

**Table 4.** Access to videos and their use by farmer associations.

Region	Name (year of creation)	Size (men; women)	Origin of the video (year VCD was obtained)	Use of videos	% of members with video equipment	Most liked/retained/used messages
Kétou	Famer association of Ayétèdjou (1999)	23 (17; 6)	Radio station (2010)	One group viewing. Group member having video equipment either got their own VCD or borrowed it from the chairman	30	Land preparation Line sowing Period of fertilization Postharvest (period of harvest, threshing, drying, sorting)
Covè	Kounsins-Lélé (11 farmer associations including two female groups) (1976)	202	AfricaRice (2010)	One viewing at meeting of leaders (25 farmers) One large group viewing (82 farmers) Four small group viewings with five farmers each	24*	Line transplanting** Sorting by flotation
Dassa	Ifèdé (2008)	14 (1; 13)	AfricaRice (2010)	Two farmers watched the videos	7	Parboiling
Dassa	Itchessan (2009)	10 (1; 9)	No copy received	None	30	Acquired knowledge on improved parboiling by interacting with association Ifèdé of same village
Glazoué	Houala (1997)	20 (1; 19)	Members took part in viewing organized by RABEMAR in 2007, but did not receive VCDs	Four women took part in viewing organized by RABEMAR in 2007	0	Parboiling (cleaning and drying) Women intensively interact with Itchèléré association

*(continues)*

**Table 4** (Continued)

Region	Name (year of creation)	Size (men; women)	Origin of the video (year VCD was obtained)	Use of videos	% of members with video equipment	Most liked/retained/used messages
Glazoué	Itchèléré (1994)	15 (0; 15)	Members took part in viewing organized by RABEMAR in 2007; got VCDs from AfricaRice (2010)	No group viewing since they have received their own VCDs	33	They were closely involved in developing the improved parboiling technique
Comé	Wodou (2009)	11	CeCPA Come (2010)	Four group viewings (five rice growers and 20 other farmers) Four farmers borrowed VCD for private viewings	91	Land preparation Line sowing
Djougou (Toko Toko)	Kokari (2004)	10 (0; 10)	From federation of farmer association of Djougou (2010)	Group viewing (four women)	20	Parboiling, determination of water content when drying parboiled rice
Djougou (Toko Toko)	Alhamdou (2006)	5 (0; 5)	From federation of farmer association of Djougou (2010)	Group viewing (three women)	40	Avoid rice over-drying in the field Importance of putting straw in bundles at harvest Avoid variety mixing to avoid grains breaking at milling

(continues)

**Table 4** (*Continued*)

Region	Name (year of creation)	Size (men; women)	Origin of the video (year VCD was obtained)	Use of videos	% of members with video equipment	Most liked/retained/used messages
Djougou (Pélébina)	Nonyinrinkoun	18 (1; 17)	From federation of farmer association of Djougou (2011)	Group viewing (five women) Individuals borrowed video from the chairlady	56	Use of tarpaulin for drying At harvest, tie and put bundles upright to avoid panicle moisture Rice sorting/cleaning before parboiling Techniques of drying parboiled rice
Ouaké	Kadolassi (2006)	51	Radio station (2010)	Group viewing (group purchased fuel in the generator of the extensionist)	18	Line sowing Drying on tarpaulins or on drying floor
Tanguiéta	Essossina (1995)	18 (1;17)	Radio station (2012)	Group viewing	17	Three years ago, the chairlady of another farmer association who watched the parboiling video trained them in the techniques
Tanguiéta	Gaskia (2006)	25 (25; 0)	Radio station (2009)	Group viewing (eight farmers) Individuals exchange videos amongst themselves	80	Line sowing Seed sorting by flotation Seed threshing

Notes: \* = estimated based on figures from the three farmer associations visited; \*\* = the videos came in at the exact period Programme d'Urgence d'Appui à la Sécurité Alimentaire (PUASA) made line transplanting compulsory for seed producers. The videos helped farmers to master line transplanting.  
Source: Fieldwork 2012.

use of quality training videos, more continuous dissemination and communication strategies around the videos would surely enhance their impact.

The videos also served different purposes. In Kétou and Comé where rice is a recent crop, the CeCPAs used the training videos as teaching materials to instruct groups of field agents and to train farmers. According to the heads of the respective extension offices, a laptop with a fully charged battery was enough to organize sessions for field agents. At the village level, the fact that farmers could see the application of the techniques and most importantly could listen to witnesses and explications from other colleague farmers made them more open to the techniques presented in the videos and eager to experiment with some of them. The head of the extension service of Kétou said the positive influence of the videos on farmers could be appreciated in the increase of rice growers: from about 10 farmers in 2007 to about 100 farmers in 2012, and the involvement of the rice growers of Kétou in farmer-to-farmer training sessions. For instance, the extension services of Adjohoun invited Kétou farmers to train Adjohoun farmers in line sowing.

In Glazoué, the extension agents who had watched the videos organized training sessions for farmers and showed them the videos using their own laptops. Zodomè G., extension agent in Glazoué said: 'Farmers believe what they see. It is very important that farmers can see in real condition what we teach them'. In Covè the extension service did not organize any staff training, nor did it organize video shows for farmer groups. Rather, it used the content of the videos to build farmer training curricula. Gnancadja A., an extension agent at Covè, expressing his satisfaction with the videos said: 'It is now easy, with these videos, to talk about rice cultivation to farmers, even to the most experienced ones. They welcome me when I visit them and I now feel more appreciated, likely because now I am less theoretical. I can confidently repeat what I have seen in the video in their field'.

Extension services who had watched the videos (Kétou, Comé, Covè, Dassa and Glazoué) extracted 'land preparation', 'line sowing' and 'post-harvest management' either as themes for staff training or for farmer training. These themes are of great relevance to south and central Benin. The improved techniques of rice parboiling captured the attention of the extension service only in central Benin (Dassa and Glazoué). Other themes extracted from the videos depended on the locality.

#### *Acquisition, use of videos and video content by rice growing farmer associations*

One-third of the farmer associations received the rice videos through their local radio station (Table 4). Videos do not need to be distributed to all farmer associations in the same village. Collaboration may also arise between farmer associations of neighbouring villages. As the association of Itchélééré in Magoumi village had taken part in several training sessions on improved rice parboiling organized in the past seven years by VECO (a Belgian NGO), it spontaneously trained the association of Houala in the neighbouring village (as the result of the social networks of the members of these two groups) and at times lend their improved parboiling kits.

The chairman of the farmer association of Covè took the opportunity of a meeting of the leaders of the association and a meeting of the whole group to organize viewings. Quite a few individuals have personal equipment for watching videos (Table 4). Farmers appreciate watching videos with their family if they are available in

their local language. When suitable language versions are not available, group viewing is more appropriate.

The content of the videos entered the agenda of several partner organizations. For example, the local NGO RABEMAR contracted with AfricaRice and organized video shows in several villages of Dassa and Glazoué in 2007. Another local NGO, AGEDREN, used the video to train farmers in Bassila. The VECO, Protos, INRAB and GIZ projects have used the videos to strengthen the rice sector. Some also enabled farmers to acquire equipment, such as parboiling kits and disc seeders, to further stimulate the adoption of improved practices seen in the videos. This multi-level partnership and collective intelligence on rice development, which coupled knowledge with physical inputs, partly explains why certain topics were mentioned more frequently than others.

## Conclusion

Radio stations distributed more than 80% of the 910 VCDs they received, of which they sold about 20%. This implies that farmers are somehow willing to invest in knowledge if it fulfils their needs (Moumouni, Vodouhe and Streiffeler 2009). Community radio stations mainly distributed the videos for free. Rural radio stations often expected contracts from anyone wanting to work with them to help meet operational costs, yet all have agricultural programmes and are looking for technical content. Radio programmers appreciated audio-visual support tools to help them understand agriculture and farmers' realities. They creatively used (sections of) the audio in various programme formats and often in manners that consumed less or no resources. Quality training videos equally helped extension services to train their field extension agents and farmers. This 'hands-off experiment' on rural communication confirms what Biggs and Smith (2003) stated ten years ago, namely that a lot of development takes place outside of planned project interventions, and that careful documentation of institutional processes is needed to truly learn.

The farmer-to-farmer rice videos have created a momentum in Benin and across Africa as previously mentioned, but more work is still needed. The NGO Access Agriculture (<http://www.accessagriculture.org>) aims to further boost video-mediated learning in developing countries. This will require the development of new quality farmer-to-farmer training videos and the injection of local language versions of the videos into the system for large-scale use.

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