



## Letting Information Flow: Distributing Farmer Training Videos Through Existing Networks

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**Abstract:** Most projects can distribute videos and other farmer learning material easily by paying to have it done. But organisations that do not have projects need to identify actors who can distribute learning videos for free. The authors and colleagues engaged with actors in various countries, from radio stations in Benin to tea stalls in Bangladesh. We gave them free DVDs, with farmer learning videos, and encouraged the actors to find their own ways of sharing the information. Later we went back for follow-up visits. Experiences from five countries show the power of distributing farmer training videos through existing social networks. In Benin, radio stations broadcast sound tracks and distribute DVDs. In Uganda and Bangladesh many private and public agencies show videos. In Mali, farmers and NGOs often screen videos under difficult circumstances. Malawi has a burgeoning rural business with young “DJs” copying videos from a computer onto ordinary cell phones. In all five countries, volunteer service providers helped farmers to access training videos, because the content was relevant, of good quality and the videos were in the enlightened self-interest of the farmer and the agency.

**Key Words:** Farmer learning videos, ICT, DVDs, Rural advisory services, Farmer experiments

Rural telecentres (public places where people can access computers, and the internet to send and receive information) were once seen as the best way to enable communities to access information, but due to lack of funding, weak demand, and irrelevant content many have stopped functioning after development projects ended. The need to be self-supporting has often forced the telecentres to drop their initial objective of supporting socio-economic development and social inclusion, in favour of selling goods and services (sometimes unsuccessfully). The failure of many telecentre initiatives is also partly due to Western assumptions that hardware alone would suffice. However, the focus of ICT-based interventions is gradually shifting from hardware (e.g. setting up telecentres) to software (e.g. processes and content management).

Access to ICT must be adaptable and flexible enough to ensure that useful knowledge is made available at the right place and time (Glendenning and Ficarelli, 2012). Unless the ICT content is useful, even the best ICT tools may make little impact. For example, the “Open Knowledge Network,” with nearly 200 telecentres in Africa and South Asia, failed because the content was supply-driven and did not meet demand for local content.

Many continue to believe that it is sufficient to use outside knowledge while ignoring local knowledge and social dynamics. Indeed, knowledge from the industrialized world may do little to trigger appropriate change in the South. As Charlotte Scarf says digital content initiatives are founded on

the understanding that connectivity will be meaningless for the world's poorest people who will find very little information of relevance to their lives and almost nothing in their own language in the absence of a complementary investment in digital content creation.

Agricultural extensionists broker information between mainly Western-based and local knowledge systems, but the quality of their interactions is highly variable. The more extension is driven by demand, the more extensionists need to widen their own expertise and search for new information. One in six extension agents in developing countries uses YouTube or Google to find agricultural videos, but cannot find what they are looking for or are distracted by the overload of irrelevant videos (this 2013 scoping study is available at [www.agroinsight.com](http://www.agroinsight.com)). Most of the videos that extensionists are exposed to are based on Western knowledge and in the languages of Western Europe.

Farmers more readily accept ideas from other farmers, yet more complex knowledge is less easily communicated between farmers and often does not spread beyond the village where the training was held. Farmer-to-farmer videos can be made according to the zooming-in, zooming-out method, which identifies problems that have a broad geographical relevance, then zooms in on solutions which are scientifically sound and which have been used by real farmers (who show their innovations and explain them on the video). The innovations are then “zoomed out” to a large

audience via videos competently translated into various languages. Zooming-in, zooming out can help to communicate complex ideas in easy-to-understand ways and overcome the challenge of scale, because they stimulate the learning and adapting of ideas to local contexts.

Organisations have used different models to produce and use videos, often blinded by a false assumption that farmers will only learn from videos that are made locally. This is especially prevalent among people trying out with participatory video models. It is too often assumed that “provision of content for farmers is more useful if it is location and context specific”. That can be true, but it is often taken to absurd extremes, such as suggesting that each speech community or each cluster of villages must have its own videos on its own variations of a theme. In fact, a video (like any extension message) is often relevant to a very wide area, e.g., the problems a poor household faces when storing rice seed are similar in Bangladesh or West Africa (Van Mele *et al.*, 2013).

Farmers in developing countries like to learn from farmers in other developing countries. Farmers in south-western and northern Nigeria reacted positively to videos on rice seed health (made in Bangladesh), on parboiling (filmed in Benin) and rice cultivation (from Mali). The farmers criticized the videos freely, but had no preference for watching videos featuring West African or Bangladeshi farmers. The Nigerian smallholders only cared about the technical content of the film. However, a key question remains: how best to reach out to millions of smallholder farmers without having to make videos in every single village, or expecting farmers themselves to access videos directly from the internet? To draw a parallel to the entertainment industry, part of the success of Nollywood (Nigerian) films is that people can easily relate to the content and that the visuals are attractive. Although initially developed in major Nigerian languages only, English and French versions of Nollywood movies can now be found across sub-Saharan Africa.

The entertainment industry can also help to shed light on how best to reach large audiences. Unlike Hollywood movies, Nollywood and Bollywood mainly distribute by packaging many movies onto a single DVD (digital video disc), and selling these with very low margins through informal networks of local outlets and a dispersed body of mobile vendors. Nollywood videos have spread widely because of the flexibility of distribution through VCD and DVD (Bentley and Van Mele, 2011; Bentley *et al.*, 2007).

To support agricultural extension in developing countries, a new knowledge broker called “Access Agriculture” was created in 2012, based in Nairobi, with an

office in Cotonou, with over 200 professional collaborators. The international NGO Access Agriculture facilitates local language translations and distribution of videos through DVD and other formats via existing social networks. Drawing on examples from five countries, this paper explores the challenges and opportunities of an open system, non-project approach to scaling-up farmer training (for more details, see [www.accessagriculture.org](http://www.accessagriculture.org)).

## MATERIAL AND METHODS

Five experiences with video distribution are presented: one from East Africa, one from Southern Africa, two from West Africa and another from South Asia. The case studies share some similarities. The video discs contained multiple farmer-to-farmer training videos on rice cultivation, integrated striga and soil fertility management and conservation agriculture. The videos were high quality, locally appropriate and regionally relevant. All videos were made without subtitles and voiced in the farmers' own languages. The organisations that distributed the videos at the national level used public funds from development projects, whereas those further distributing and using the video discs at the grassroots level did this on their own initiative, without being paid to do so. Each group mobilized its own resources and social networks, resulting in different approaches (Table 1).

## RESULTS AND DISCUSSION

**Benin: mobilising entrepreneurship of local radio stations:** Although the situation has changed over the past five years in West Africa, in 2009 video compact discs (VCDs) were far more widespread than DVDs. The growing popularity of Bollywood and Nollywood movies has triggered villagers to buy DVD players. In 2009, as a way to learn about distribution channels, the Africa Rice Center (AfricaRice) distributed about two thousand VCDs to 25 local radio stations across Benin. Some copies went to farmer organisations and extension services. This experience is one of the reasons Access Agriculture was started in 2012 (Dalohoun *et al.*, 2009; Okry *et al.*, 2014).

The videos were translated into five important local languages of Benin; Fon, Mina, Yoruba, Dendi and Bariba. Each VCD contained five or six rice videos in a local language. The videos were distributed according to the major local languages spoken in the area. When the language of a particular area was not available (Benin has over 70 languages and multi-lingualism is common), videos of a similar language were given to the radio stations.

Radio stations distributed VCDs in different ways as they felt that the videos were perfectly relevant to their area,

**Table 1.** Video distribution mechanisms tested in East Africa, West Africa and South Asia

Country	Number of video discs distributed	Organisation distributing videos at national level	Organisations distributing and using videos at local level	Key lessons learned
Benin	2500 VCDs	AfricaRice, an international research organisation	25 local radio stations	Radio stations use video to strengthen the agricultural knowledge of their staff and use the videos creatively to strengthen links with their communities Commercial radio stations sell videos to farmers and extension agents, whereas community radio stations distribute them for free, but could also sell video as a future source of income generation
Uganda	7500 DVDs	Farmers Media, a communication company	18 public and private sector service providers	Depositing boxes with hundreds of DVDs to an organisation may be ineffective without proper planning and monitoring Private sector value chain actors who see a direct benefit in strengthening farmers' skills play an important role in distribution and use of video
Bangladesh	1250 DVDs	The Agricultural Advisory Society, a national NGO in collaboration with CIMMYT	Over 300 tea stalls, NGOs, extensionists, community-based organisations, local government, local village shops and many others	Giving a few copies to many service providers creates a lot of local initiative to view and further share videos
Mali	10,000 DVDs	ICRISAT, an international research organisation	Over 300 NGOs, ministry of agriculture, local government and extension, radio stations, cooperatives, farmer field schools and many others	Carefully planning and following up helps to ensure that organisations use the DVDs. Farmer clubs and cooperatives find ways to watch quality training videos that are relevant, even if there is no electricity

even though they were filmed in Bangladesh, Burkina Faso and Mali, as well as Benin). The commercial radio station of Glazoué used persuasive advertisements to sell most of the 240 VCDs to farmers and extension agents, whereas the community radio stations distributed most VCDs free of charge. About 20% of all the VCDs were sold, suggesting that some farmers are willing to pay for information.

None of the nine radio stations surveyed organised village video shows, because they lacked equipment and travel money. But one third of the stations invited farmers to their stations to watch the videos. The video shows organised at three of the nine radio stations grouped on average 200 farmers.

Seventy eight per cent of the radio stations organized video sessions for their staff. During these sessions, which often coincided with the weekly planning meetings, radio staff selected several topics from the videos that reflected the interests and priorities of the rice producers of their area. They extracted parts from the videos as audio files, and aired them as such or used them to organise interactive thematic discussions, roundtables or quizzes.

The radio stations of Tanguiéta and Ouaké decided to play the audio tracks of the videos in slots dedicated to agricultural programmes and even in open slots. At the end of

each session they announced that copies of the videos could be collected from their radio station. Staff of the radio stations of Tanguiéta even made the extra effort of visiting farmer organisations to hand over VCDs, distributing 100 copies free of cost. The training videos contributed to a better positioning of radio stations as partners in agricultural knowledge dissemination.

Local radio stations are under-studied, especially in Africa, where their audience, financing, sponsorship, and mandates are not yet fully understood and differ from one place to the next. All of the stations need money to cover their operational costs and when approached by an outside agency many think that there is money to be made. As this was the first time that local radio stations were approached with video content for farmers, many may not yet have realised that they could sell DVDs to earn income. Yet all of the radio stations were able to do something worthwhile with the videos.

In Benin, as in many countries, the producers of the DVDs were just getting to know some of the potential distributors. The challenge is to make the DVDs seem important enough that an organization will distribute them. In Benin, the video producers did not at first realize how crucial it was for the stations to make money, and the radio stations did

not all understand that they could sell the DVDs (besides using the videos to generate content to broadcast). Simply telling the broadcasters during initial negotiations that it is OK to sell videos can be helpful.

**Uganda: Value chain actors are more effective distributors than large development agencies:** In Benin, Access Agriculture learned that radio stations alone would not reach all farmers. So in Uganda, they explored how effective different kinds of public and private-sector agricultural service providers were in showing and distributing videos to farmers. Eleven farmer-to-farmer learning videos made in Bangladesh and West Africa about growing rice, from seed to post-harvest, were dubbed into five major languages of Uganda (plus English, Swahili and French). These "Rice Advice" videos were copied onto a single DVD and in 2011 some 7,500 copies were distributed to 18 public and private-sector organisations in Uganda. Most of them received between 100 and 1000 DVDs.

As organisations are often rewarded for conducting projects, not for distributing information, some failed to properly distribute the videos. Some of the larger organisations did not give DVDs to their grassroots extension workers, or to farmers' associations. Instead, they handed out the DVDs as freebies at conferences and trade fairs. At least one organisation sold some DVDs, like the radio station in Benin, which suggests that encouraging a distributor to sell DVDs may be an opportunity to get the videos to people who want them enough to pay for them.

Some value chain actors are excellent distributors of training videos. For example, the rice millers quickly realized that the videos helped raise farmers' rice production and improve rice quality, so they made efforts to get videos into farmers' hands. As part of building farmers' trust, Upland Rice Millers has a dormitory room where farmers can sleep while they wait for their rice to be milled, and gives them free meals while they wait. Upland Rice Millers is a big operation, the second largest rice mill in Uganda (Katungi *et al.*, 2008). When farmers get good prices and friendly treatment, they respond by telling their friends on their cell phones and by growing more rice. Farmers who used to bring two sacks of rice to Upland now bring in six. The manager of Upland Rice Mills explained that "The Rice Advice videos helped make this possible because the videos help the farmers produce more rice and better rice. When the farmers come to mill their rice, Upland Rice Millers shows them all 11 videos. It really helps that it's multilingual. There are 55 languages in Uganda, but everyone can understand at least one of the five major Ugandan languages on the DVD close parenthesis here.

The agro-input dealers and the Uganda

Development Trust (UDET), a national NGO, also played significant roles in dissemination of technology and distributed 100 and 250 DVDs to paddy growers, respectively. This resulted in higher production of better quality.

In Uganda, as elsewhere, organisations are rewarded for completing projects, not for distributing DVDs, even when the videos fit the agencies' stated mandate. The challenge is to convince the organisation that the farmers need the DVD. There is an opportunity to distribute DVDs through private entrepreneurs, such as rice millers, who benefit as farmers' harvests improve, and through input dealers, who can give DVDs to customers to help build relationships. In the future, with large organisations (public or NGOs) there may be an opportunity for them to sell DVDs, or to help them craft a sound distribution plan.

**Bangladesh: tapping into grassroots organisations and local entrepreneurs:** The distribution of DVDs in Bangladesh was a big improvement, and was based mostly on small-scale, private-sector actors. In 2012, the International Maize and Wheat Improvement Center (CIMMYT) hired the NGO AAS (Agricultural Advisory Society) to show a video on strip tillage and bed planting for wheat and maize to farmers in southern Bangladesh. AAS showed the video on conservation tillage machinery in 332 villages through open air video screenings to over 85,000 farmers. AAS also distributed a DVD with the tillage video, but also with four other videos on rice seed health, which had been made in 2003 in Bangladesh with IRRI (International Rice Research Institute). AAS provided 1250 DVDs covering over 300 tea stalls, NGOs, community-based organisations (CBOs), custom tillage operators, input dealers etc.

A telephone interview by CIMMYT to those who had received a DVD revealed that 70% had shown the videos to farmers and 6% handed them over to others who had a DVD player. An in-depth non-random sample in two out of the four districts revealed a very similar figure: 80% of the community service providers voluntarily showed the videos to on average 100 farmers, so through the DVDs at least 100,000 farmers benefited.

Few of these community members were extensionists and each group showed the videos in its own way. The tea stalls showed the videos many times, but reached far more men than women. Some of the NGOs and CBOs did a better job of sharing the videos with women. Those who did not have DVD players (e.g. some of the shopkeepers, custom tillage providers and farmers' clubs) usually gave their copy of the DVD to someone else who did have a DVD player, who was likely to screen the video to neighbours.

Of the 29 tea stalls interviewed, 27 showed the videos to their clients. Many of the tea stall owners said that they were too busy making tea to watch the videos themselves, but just turned them on for their customers. The tea stalls show the videos, until all the regular customers have seen them or until their clients stop asking to watch them.

In the past few years, Bangladesh has developed small cable TV companies called “dish-lines” that download commercial TV stations with satellite dishes and feed the cables to a few hundred homes and businesses in several villages. They all played the agricultural videos that were given to them either by AAS or by one of the community-based organisations. Bangladesh is not like Africa where radio and TV stations are starved for content in the local language. Bengali is the world's sixth most widely spoken language and in Bangladesh media outlets are overloaded with content. Yet, despite the wealth of entertainment content, all six of the cable owners showed the videos. If there was a large enough supply of attractive learning videos, a dish-line might be able to create an audience, e.g., broadcasting the educational programs as a regular feature, at specific times. Perhaps the best strategy to motivate cable TV in the future is to have CBOs or local authorities give agricultural videos to the local cable operators, so they feel that their clients want them to show the videos, not an outside agency that may have money.

The Union Information Centres (privatised facilitators of paperwork based in local government offices) always showed the videos, sometimes to large audiences. About half of the government extension agents showed the videos to about 250 farmers each; NGOs and CBOs to about 150 farmers (and often reached more women than other actors); and the power tiller operators, local village shops and agro-dealers were less likely to show the videos and reached slightly less than 100 people each.

All service providers received one to a few DVDs for free, but none were paid to show the videos to farmers. Some showed the videos out of social motivation, others because it helped raise the profile of their business. One reason for the success in Bangladesh was that AAS had two convincing field agents who told volunteers that if they would show the videos, they would be doing a service for the community and helping the farmers.

**Mali: mobilising farmer field schools and cooperatives:** By 2012, Access Agriculture had learned a lot about effectively distributing farmer training videos, e.g. that villagers will watch the videos again if they have their own copy of the DVD, and that NGOs could effectively show videos, with the right motivation. Ten new videos on

managing striga, a persistent and damaging parasitic weed, had solid technical content from experienced researchers at ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) and their partners and from farmer-experimenters who had studied striga in FFS (farmer field schools). Drawing on past experiences, Access Agriculture advised ICRISAT and other organisations across Africa to distribute some 50,000 DVDs of the “Fighting Striga” series.

In Mali, ICRISAT and partners carefully planned the distribution of about 10,000 DVDs. Most of these went to extension agents, farmer groups, and cooperatives and almost all of these groups watched the videos, which had 8 language soundtracks, so everyone in Mali could understand them. Some radio stations also aired the soundtracks. Many groups gathered in open air public viewings in the village centres, and usually managed to overcome limitations such as lack of electricity or scarce DVD players. Farmers found ways to use solar panels, batteries and various kinds of equipment to watch the videos and several groups took the initiative to copy them further on computers, I-pads, USB sticks or more DVDs. The NGOs did an especially good job of screening the videos in villages, because they realized how much the videos helped farmers control striga and improve their cereal yields.

Farmers in FFS groups were especially good at organising public screenings, so everyone could watch the videos. Before watching the videos, farmers in Mali were not aware of the danger of striga seeds, which are the size of dust particles. So farmers unconsciously let the striga plants flower, and disperse their thousands of seeds. After watching the videos, many viewers realised that they needed to uproot the striga plants before they set seed, but this is a tedious job. Some of the women's work groups were soon busy making money pulling up striga.

Some social changes revolved not around the agricultural technologies, but around the video itself. In the village of Kouna, an NGO (Aga Khan Foundation) showed the 10 striga videos to 40 village residents, who immediately realised the importance of the information. The village leaders organised a “video committee” to screen the videos in the village square every night for two weeks, and to take copies to outlying hamlets, until they were satisfied that everyone in the large village had seen the videos, including women and youth ([www.agroinsight.com](http://www.agroinsight.com)).

In Mali, DVDs were provided to village elders. Like most other countries, the older people are not the most inclined to new digital technology. DVD players and cell phones may be increasingly common over most of Africa, but the young farmers are the most eager adopters. In Mali, elders who received a DVD often gave it to their son or

another young adult who knew how to show it. Elders are the authority in a village, but they need young people to access digital technology.

**Malawi: a job for youth:** Based on insights learned in Mali, in Malawi the new, burgeoning business of making videos available in villages and small towns was explored. Nearly every settlement that is large enough has a cluster of shops. But now they also have a “video show” where village youth can watch an American, Nigerian or Indian movie on someone's TV with DVD player (Esan, 2008).

Villagers off the electrical grid come to town to do their business, and while there they have their cell phone charged up for a small fee, and then go get some new videos. Later the whole family can watch the videos on the phone screen.

The mobilisation of actors in agricultural development beyond project mode resonates with what Dalohoun calls “a self-organising system of innovation”, where entrepreneurs responded to new technologies by promoting them on their own (often in the hopes of creating additional business). Access Agriculture ([www.accessagriculture.org](http://www.accessagriculture.org)) gets training videos into the hands of farmers by combining an innovation systems approach with the goals of entrepreneurs. For example, among private, rural radio stations in Benin the standard is that any services the radio stations offer should be paid, otherwise the stations cannot operate as a business. Out of principle, Access Agriculture does not pay any service provider to distribute or show videos, as it believes that quality and relevance will motivate service providers to reach farmers. Radio staff in Benin realised that their rural audience would appreciate the ideas on the videos, and found creative ways to broadcast the contents, and distribute the videos to farmers. The stations share farmers' goals of improving rural livelihoods.

Professional networks in Uganda distributed the rice videos to millers, who shared them (pro bono) with farmers to strengthen customer relations, and to encourage farmers to harvest more and better quality rice, which would also benefit the mills. In Bangladesh many members of the rural services community relate to farmers well enough to make an effort to show them videos if the topic is of interest and the video is attractive and well made. These actors had many different motives, depending on their business. For example the tea stall owners knew that the videos retained an audience of paying customers. The operators of the UISCs (Union Information Service Centres) wanted to improve client relations and demonstrate some of their ICT equipment (Gurumurthy, 2006).

Some organisations in Uganda and a commercial radio station in Benin sold copies of the training videos to

farmers thereby engaging in monetary entrepreneurship; they received the DVDs for free, from partners of Access Agriculture, but selling the disks defrays the vendors' transaction cost and encourages them to deal in DVDs in the future. Farmers are eager to obtain training videos and are willing to pay for them once they know the content is relevant to them, as in Nigeria where 95% of farmers are willing to pay for improved extension services. Future sales of agricultural DVDs by local entrepreneurs would most likely rely on informal networks and network-generated trust, as in many developing countries markets.

In country where broadcast TV in rural areas is limited (for lack of money, lack of content, or language barriers) farmers are best reached with DVDs through existing local service providers. Entrepreneurs that show soccer and action movies, such as the *kibandas* in Uganda or video shows in Malawi, might sell or show agricultural training videos. In Fiji, where DVD selling has a history of about 30 years, most integrate DVD sales into other activities: car washes, churches, shoe repair stores, bookstores, internet cafes and electronics stores.

Well-planned distribution of DVDs to local service providers (including the DJs) and grassroots organisations will be needed, and then local entrepreneurship and social networks will spontaneously help to distribute and screen the videos in rural communities. Members of farmer associations readily share information between themselves. By targeting farmer associations for the distribution of agricultural DVDs they will become better equipped to also provide advice in response to their members' needs.

Public and commercial TV stations across Africa have approached Access Agriculture to obtain free access to high quality farmer training videos, as they see a growing potential to broadcast videos of relevance to their audience. The growing availability of quality, attractive training videos in multiple languages ([www.accessagriculture.org](http://www.accessagriculture.org)) opens the door to entrepreneurs to play a role in distributing and showing farmer training videos. Contrary to taking part in projects or workshops, which is often motivated by farmers' desire to boost their reputation or to obtain material benefits, paying for copies of training videos or to attend video shows would attract only farmers that are motivated by learning to improve their farming. Providing farmers with attractive and useful services is the most reliable way to promote and foster effective and sustainable farmer financial participation (Moumouni and Streiffeler, 2010),

## CONCLUSION

Many farmers will watch a really good training video, but only if someone in the community gets a copy of it.

Now that so many remote villages have at least one person with a DVD player, many videos can be put on a DVD (in several languages) and distributed as a low-cost, high-quality extension method, as is now being promoted by the NGO Access Agriculture. New digital technology (e.g. DVDs, mobile phones, smart projectors, digital TV) will make it easier for farmers to access agricultural videos, but will require some time to grow and to explore the best ways to distribute and show videos in each context.

### ACKNOWLEDGEMENTS

The studies in Uganda and Bangladesh were generously funded by USAID through the MEAS (Modernizing Extension and Advisory Services) project. CIMMYT kindly supported the video activities in Bangladesh and ICRISAT supported video activities in Mali. AfricaRice and Agro-Insight financed the study on video use by radios in Benin. The research in Mali and Malawi was funded by The Swiss Agency for Development and Cooperation (SDC) through the Videos for Farmers project managed by Access Agriculture. We are grateful to Samuel Guindo, Sidi Touré and Gérard Zjoundi for help with fieldwork in Mali, and to Espérance Zouso in Benin, Ronald Kondwani Udedi in Malawi, Grace Musimami in Uganda, Subrota Kumar Ghosh and Anowar Hossain in Bangladesh, and to Emmanuel Ogundele and Olupomi Ajayi in Nigeria.

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