

Videos Bridging Asia and Africa: Overcoming Cultural and Institutional Barriers in Technology-Mediated Rural Learning

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ABSTRACT *Will African farmers watch and learn from videos featuring farmers in Bangladesh? Learning videos on rice seed management were made with rural women in Bangladesh. By using a new approach, called zooming-in zooming-out, the videos were of regional relevance and locally appropriate. When the Africa Rice Center (AfricaRice) introduced them to Africa in 2005, many scientists and civil servants thought that the videos would be culturally inappropriate and hence irrelevant to African smallholder farmers. However, African farmers who watched the videos did not experience cultural barriers. In fact, they enjoyed seeing another part of the world where farmers faced similar problems as theirs, and were able to solve these problems by themselves. To promote wider uptake of the videos a key challenge was to overcome the institutional barriers. Public sector agencies especially had to be convinced that African smallholders appreciated Asian videos. By watching the videos with farmers and listening to their feedback, the skeptical scientists and service providers changed their minds. By 2009, the Bangladeshi rice seed videos had been translated into 20 African languages and so became national products. Videos made according to the zooming-in zooming-out approach can bring farmer-to-farmer extension to a higher level of social aggregation.*

KEY WORDS: Technology-mediated learning, Video, Language, Agricultural advisory services, Communication, Africa, Asia

Introduction

Since the articulation of the multiple sources of innovation model (Biggs, 1990), science is no longer seen as the only source of valuable knowledge nor are

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agricultural extension services considered as the only mechanism to trigger technological change among farming communities. The concept of pluralism in advisory services has largely replaced the linear model of top-down national extension delivery. However, it would be simplistic to assume that actors such as NGOs, consultants, private sector and farmer organizations are better equipped with facilitation skills, learning tools and approaches than staff from the governmental agricultural advisory services. In reality, many lack basic notions of constructivist learning, a theory that recognizes that people learn by building on their own knowledge and experiences, and continue to consider farmers as passive recipients rather than as co-learners (Röling and Wagemakers, 1998; Van Mele et al., 2005a).

Strengthening national agricultural research systems is of little use if at the same time learning and linkages within the agricultural innovation system are neglected. To ensure this is taken into consideration, the Africa Rice Center (AfricaRice) and partners developed a series of radio and video programs. Topics cover rice seed management, sustainable soil and crop management, rice post-harvest and processing.

In Africa, as in most developing countries, rural radio is still the most popular mass media, with video more often playing a role in informing decision-makers—see also Ramírez & Quarry (2004); Rivera (2006). Farmer-to-farmer videos are an innovation in itself. Presenting subjects of regional relevance, the rice programs triggered the interest of many research and development (R&D) actors. By 2009, the rice videos produced in Bangladesh and Africa had been translated into more than 30 African languages. They strengthened the capacities of more than 500 organizations and 2,500 trainers, and benefited hundreds of thousands of farmers across Africa (Van Mele et al., 2010).

However, the introduction of the idea to strengthen the African rice sector through video-mediated learning did not happen without hurdles. In 2005, many perceived video as inappropriate for Africa. As the first videos introduced by AfricaRice were made with Bangladeshi rice farmers, this affected initial acceptance. That these videos had won an international award for effective communication (Van Mele et al., 2005c), was no guarantee that it would work (or even that it should be tested) in Africa. Various key actors (scientists, advisory services and other intermediaries) imagined barriers before even trying to promote mediated cross-cultural learning.

In this paper, we distinguish between cultural and institutional barriers. We then present some case studies describing how these barriers were perceived and (partly) overcome by different actors. We use the concepts of innovation systems and transformative learning along with Bennett's (1993) developmental model of intercultural sensitivity to reflect on our experiences. The paper concludes by presenting some stepping stones to overcome these barriers.

Language and Cultural Barriers

Agricultural systems in sub-Saharan Africa are highly diverse and predominantly rain-fed. Only 4% of the agricultural land is under irrigation. Increasing agricultural performance requires an improvement in productivity on the 80% of farms that are smaller than two hectares (Markwei et al., 2008). The study by Markwei et al., which was conducted as part of the International Assessment of Agricultural Knowledge,

Science and Technology for Development (IAASTD), reported that scaling-up sustainable technologies is difficult ‘because successful innovations tend to incorporate local knowledge and to be specific to the particular agro-climatic conditions’. In his review paper on sustainable agriculture, the American economist Lee (2005) had come to the same, at first sight, discouraging conclusion.

African cultures are very diverse, and distinct from Asian cultures. For example, whereas one single language is spoken among the 130 million Bangladeshi people, in Benin, a small West-African country, more than 70 languages are spoken by the 7 million inhabitants. In one and the same village, four or more different languages may be spoken. This obviously poses particular challenges for enhancing rural learning systems and developing impact pathways for research.

Zooming-In Zooming-Out

To support the scaling-up of sustainable technologies, the AfricaRice developed an approach called *zooming-in zooming-out* (Van Mele, 2006). The approach integrates participatory learning and action research with the development of technology-mediated learning tools, such as radio and video programs, whereby the empowered farmers feature as key actors (see Figure 1). Local and scientific knowledge form the building blocks, and a few practical examples are to illustrate the diversity of solutions. Radio and video programs produced according to the *zooming-in zooming-out* approach are regionally relevant and locally appropriate. The video programs in particular can be used by a wide range of service providers and address a major challenge in extension, namely the loss of quality in facilitating learning when going to scale (van de Fliert et al., 1995).

To facilitate cross-cultural learning, the technologies have to be regionally relevant and at all times the emphasis must be placed on the principles underlying the technology rather than only the technology as such. Compared with traditional training videos, the emphasis in learner-centered videos has shifted from *how* to *why* combined with a range of options of *how* a technology is applied in various contexts. This didactic insight dates back from the early 1980s when the anthropologist Robert Rhoades, at the time working at the International Potato Center (CIP), stressed that

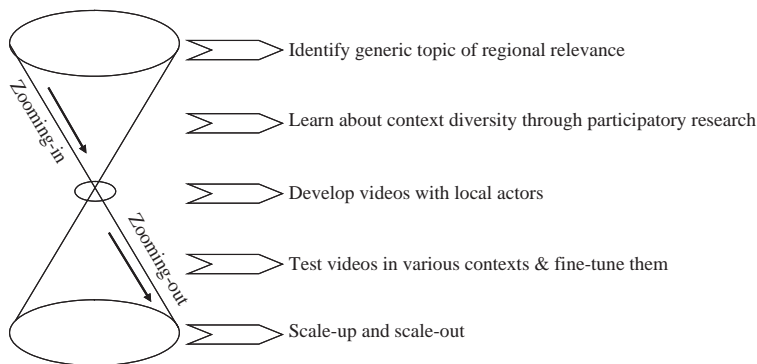


Figure 1. Zooming-in zooming-out: a new approach for developing farmer-to-farmer videos.
Source: Modified from Van Mele (2006).

to promote improved potato storage the emphasis had to be placed on the effects of diffused light on stored potatoes, rather than on a single ingeniously designed storage device (Rhoades, 1984). Farmers can then add their own creativity to develop a technology that suits their context. This crucial insight to trigger farmer experimentation is embedded in the *zooming-in zooming-out* approach.

By applying the *zooming-in zooming-out* approach, four videos were made in Bangladesh dealing with rice seed management (see Table 1). The basic motivation to produce these videos was that across the developing world more than 90% of the smallholder rice farmers rely on seed originating from the informal seed sector. So significant productivity gains can be obtained by improving farmers' seed management practices. An increased awareness of the importance of the quality of seed could also create local demand for improved varieties and encourage the emergence of a private seed sector.

Local knowledge and practices are diverse, but when taking a closer look many revolve around a set of very sound, basic principles. For example, although Bangladeshi women who feature in the video talk about the use of *bishkatali* leaves (*Polygonum hydropiper*) to repel insects in seed storage, women across Africa who watched the videos never complained that they lacked access to this plant. Instead, they realized that many of their native plants have insect-repelling properties and started to include them when storing their rice seed.

The *zooming-in zooming-out* approach helped to bridge cultural barriers. The videos were dubbed into African languages, and the African farmers were not distracted by cultural forms of expression, such as the scarves Bangladeshi women wear. African farmers did pay attention to the subject covered. For instance, farmers in Guinea were surprised that 'those foreigners [Bangladeshi farmers] are as poor as we are and they face similar problems'. Seeing how farmers at the other end of the world had come up with simple and practical solutions proved an important source of motivation for African farmers to start experimenting themselves.

Once the technologies, the content and the format of the programs have been fine-tuned by closely interacting with the end-users, the use of the videos by intermediaries becomes the remaining challenge. The increasingly decentralized and fragmented landscape of advisory services makes it harder to plan. The video-maker may or may not know the potential users. Innovation systems are loosely organized and actors may form new links as the system evolves, or new actors may enter the scene. So a better understanding of institutional barriers to mediated cross-cultural learning will facilitate future uptake and linkages.

Institutional Barriers

We refer to institutions as both the structures (such as research institutes, universities, NGOs, advisory services, consulting agencies, formal and informal credit systems) and the rules, norms, laws and habits that shape their actions and relationships. Analyzing institutions is crucial, because they create the environment (enabling or not) for social interactions and learning that lead to innovation (Geels and Kemp, 2007; Biggs, 2008).

In addition to agro-ecological and cultural differences between Africa and Asia, their institutional landscapes differ. For instance, Bangladesh hosts many powerful,

Table 1. Practices presented in four rice video programs made in Bangladesh

	Seed Sorting	Seed Flotation	Drying	Storage
Brief description of technology	Manually remove diseased seed	Add salt or urea to a bucket of water until an egg floats; drop rice seed in the water and remove the bad ones that will float to the surface	Make a bamboo table or bench for drying rice; it can be quickly moved indoors in case of rain	Paint an earthen pot; fill it with rice seed and do not leave a dead air space; add leaves of neem or <i>bishkatali</i> ; seal pot and place it off the ground
Learning messages	Spotted and discolored seeds are unhealthy; these cannot be removed by winnowing or seed flotation; seed sorting improves yield	Winnowing does not remove all insect-damaged and partially-filled seed	Seeds absorb moisture from soil; wind helps in drying seed; a drying table has many other uses than just drying rice seed	Pots absorb moisture, which paint prevents; completely filled pots are dryer than half empty ones; some kinds of leaves repel storage insects
Local knowledge and innovations	Women have little knowledge about seed-borne pathogens	Women already soak seed in water prior to sowing; flotation with salt or urea is a small modification of existing practice	Drying tables were designed with the full participation of local women and men	Traditionally some people sealed pores of earthen pots with used oil; only a few people use botanicals

Source: Van Mele et al. (2005b).

highly organized and well-equipped NGOs that work with over a million members across the country. NGOs in most African countries, on the other hand, work with a few communities and have little or no political clout.

There are large differences also between regions and countries within Africa. Rural development in West Africa is generally slower than in East Africa, partly due to the slower development of institutions, such as input delivery, service provision, credit and marketing mechanisms (Röling et al., 2004). The same authors concluded that time and again successful pilot projects in West Africa artificially created the conditions for a rapid productivity growth, but when they tried to replicate success by scaling-up through existing institutions, the effects collapsed. So how did these insights influence AfricaRice's efforts to promote video-mediated learning in the rice sector?

Faced with limited funds to conduct research on innovative learning mechanisms and pathways, AfricaRice has relied heavily on existing actors and their networks. Based on earlier experiences, we initially assumed that researchers would be less receptive to using cross-cultural learning videos than, for instance, development agencies, but life is never that predictable. Actors that we initially thought would be highly motivated to use the rice videos did not engage at all, whereas others from whom we had little expectations turned out to be real innovators. The response of people to the Bangladeshi videos appeared to be shaped by their intercultural sensitivity and the institutional culture to which they belong.

Intercultural Sensitivity

Bennett's (1993) developmental model of intercultural sensitivity is one of the few theories that bridge the areas of intercultural communication and human development. The model describes people's reactions to cultural difference. The two main levels reflect a particular cognitive orientation that is expressed through culture-related attitudes and behaviors.

Briefly, the ethno-centric level recognizes cultural differences but values this negatively, e.g. with dualistic 'we-they' thinking. We encountered this attitude among most national researchers who believed that what was developed in Bangladesh was irrelevant to their country and that it would be better to develop all future videos in their own country. Initially, the same attitude was apparent among our international AfricaRice colleagues. One African sociologist, after she had watched the Asian videos, said that they would not be accepted by African farmers, because the videos feature Bangladeshi men who wear the traditional *lungi* (a rectangular piece of unstitched cloth, about two metres long, worn around the waist). These, according to her, look like skirts and when African farmers would see this, they would no longer take the videos seriously. Yet, not a single farmer ever raised this issue.

At the ethno-relative level, the individual recognizes, appreciates and respects cultural differences and may actively learn from the differences between cultures (Bennett, 1993). We encountered this attitude mainly among farmers. Cultural differences between Asian farmers in the video and the African farmers in the audience were less important than the scientists wanted us to believe. Smallholder farmers across the world share similar values, such as respect for hard work, private property and frugality (Netting, 1993).

In what follows, we present some examples to illustrate the diversity of actors and their (re)actions, and how these are shaped by people's intercultural sensitivity and the institutional context in which they work.

Case Studies

Benin

In 2007, after the senior author (Van Mele) attended a public cinema event in Cotonou, he started to engage with *Cinéma Numérique Ambulante* (CAN), an association of young professionals who use mobile cinema vans for social mobilization campaigns in rural and urban areas (e.g. on child trafficking and HIV/AIDS). Their staff is trained in facilitating and documenting the discussions that take place immediately after each open-air show. AfricaRice proposed that they include short, 15-minute rice videos. After having viewed them with her team, the director of CNA, Rosalie N'Dah, responded positively. From the many years of social work in rural areas, she knew that rural folks would welcome these agricultural videos. Upon her request, AfricaRice briefly trained their staff to make them more confident with the content of the rice videos. The fact that some of the videos were produced in Bangladesh was no objection to CNA. Apart from her social engagement with rural communities, Rosalie N'Dah is an international referee for women's soccer who recently took part in the Olympic Games in Beijing. She perceives facilitating sessions of cross-cultural learning in rural villages as like arbitrating a game of soccer between two teams who do not speak the same language. Players of different countries understand the rules of the game. In the same way, growing rice on a small plot of land is a similar game, whether it is in Bangladesh or Benin.

A local enterprise, Top Show Bizz, which distributes video and music CDs in rural areas, did not prove eager to disseminate the Bangladeshi rice videos. Although the CEO knew from experience that villagers love to watch Hindi movies, he was emotionally less involved with rural people and his motivation was purely business-driven.

Cyriaque Akakpo of the National Rice Program at the *Institut National de Recherche Agricole du Bénin* (INRAB), worked for ten years in the extension services, went for training in Germany and continued another five years on research for development with a Dutch project before joining the national research system. Unlike some other scientists, he strongly believes in the value of endogenous knowledge and development. Until recently, rice in Benin was an insignificant crop and all major R&D actors lacked technical competencies in rice and seed production. With 80% of the country's export being cotton, this was not surprising. Since 2006, however, rice has featured on the national plan for agricultural development. When Akakpo obtained a copy of the Bangladeshi videos at the first African Rice Congress in Tanzania in August 2006, he copied them to his hard disc and then did not really watch them for some time. Only when a German rice project asked him to facilitate farmer training sessions and whether he could possibly include video, he remembered he had copied the rice videos on his computer. Hesitant at first because the videos were made with Bangladeshi farmers, he decided to give it a try. After witnessing the farmers' feedback during the first video show, Akakpo understood that the

technologies were applicable by smallholder rice farmers in his country and became convinced of the power of video-mediated learning. Responding to requests from various NGOs and development projects, Akakpo started to train hundreds of trainers and rice seed producers with the Bangladeshi videos, even providing them with copies.

The Gambia

On 30 April 2005, Van Mele organized a video show at the National Agricultural Research Institute (NARI) for three women from Pirang village. Other people in the audience included the President of the National Farmers' Platform and representatives of the research and extension community. Based on the powerful feedback of the village women, that same day the people present in the room took the decision that these videos had to be translated into one of their national languages. Two years later, under the impulse of Mustapha Ceesay, a dynamic scientist at NARO, the Gambian TV started to broadcast the Mandinka version of the rice seed videos. At least 80% of the rice farmers in The Gambia understand Mandinka, amounting to about 300,000 farmers (Baboucarr Manneh, personal communication). Mustapha Ceesay coordinates a large project that focuses on the diffusion of Nerica varieties (New rice for Africa; a range of short-cycle crosses between the Asian *Oryza sativa* and African rice *O. glaberrima*) and works on a daily basis with rice seed producers.

Mali

In April 2006, we showed the Bangladeshi videos—that were translated from English into Mandinka by colleagues in The Gambia—to rural women in Sikasso and San, southern Mali. Mandinka is a language closely related to Bambara, a national language of Mali. The scientists, NGO staff and farmers who together watched the videos all understood most of the Mandinka version. Based on the positive feedback of the rural women, CESPAs was approached to translate the videos into Bambara. The *Centre de Services de Production Audiovisuelle* (CESPA) is a national centre established by the Government of Mali with the assistance of FAO and UNDP that specializes in the production of audiovisual materials.

Rosaline Maiga Dacko, who at the time worked for the NGO Jékassy, played a key role in negotiating with CESPAs and in diffusing the translated videos among 22 intermediaries. As she had been involved in participatory learning and action research for various years, she was well aware of farmers' realities and appreciated this form of video-mediated farmer-to-farmer extension. Once the local language version was available, none of the intermediaries objected to the cultural differences and used the videos to train their staff and clients.

In 2009, when CESPAs was approached a second time to translate a new series of rice videos that AfricaRice had produced with research and development partners and farmers in Mali, their proposed rates had sky-rocketed. We have observed similar excessive demands for translating the rice videos in some other countries, especially by public media houses which prefer to produce and market their own programs. Sadly but true, projects are sometimes considered as milk cows.

Guinea

On 23 November 2005, we showed the English version of the Bangladeshi videos during a capacity building workshop on local knowledge at the agricultural research station of Foulaya. Unlike The Gambia, where English is spoken by most R&D actors, most people in Guinea do not understand English. Although farmers and farmer trainers also attended the video show, we realized that to motivate R&D actors to use cross-cultural learning videos, videos have to be presented in an accessible language. Only after AfricaRice had translated them into French could francophone Africa be sensitized about the videos. Later on, when sufficient interest in the topic had arisen, translations in local languages were also made.

Even before the videos were dubbed in local languages, scientists came up with creative ways to make the content available to a wider audience in the local language and gauge feedback. One week before organizing an open-air video show in Lamikhouré village, Louis Béavogui, from the national research institute (IRAG), sent the French script of the rice seed videos to a journalist of *Radio Guinée Maritime*. The latter studied the scripts, attended the village video show and took notes of the questions that farmers asked after having watched the videos. The journalist returned one week later and interviewed some of the farmers on what they had seen on the videos, what they had learnt and what they were planning to apply. The resulting radio program has since been regularly broadcast, potentially reaching over 800,000 rural people.

The NGO *Association pour la Promotion Économique de Kindia* (APEK) trained thousands of farmers using the Bangladeshi videos. At first, its director Malick Soumah used the French version. Malick had been training farmer seed producers for the past ten years and he welcomed the videos with open arms. As he related closely to national research and extension staff, he probably further motivated colleagues at these governmental institutes to use the videos. Based on the positive feedback from farmers, IRAG and APEK soon translated the videos into Susu and Guerzé. Farmers were highly impressed with the translations and clarity of the videos. After the show, when asked whether there were any questions, they replied with 'no comments'. One of the women suggested making a video on how she produced seed and to send this to Bangladesh as a sign of reciprocity and thanks.

Uganda

During the first African Rice Congress in Tanzania, hundreds of copies of the French and English versions of the Bangladeshi videos were distributed among the participants. Getting feedback from the participants a year after the event proved a real headache. But things had started to happen. In north, east and west Uganda, the USAID-sponsored Agricultural Productivity Enhancement Program (APEP) with the assistance of the office of the Prime Minister showed the English version of the rice seed videos to over 7,000 farmers, including those living in refugee camps, to revive agriculture in war-torn villages. The initiative was taken by Robert Anyang, who had played a pivotal role in introducing upland rice cultivation in Uganda. Supported by favorable donor and political engagement, in less than three years the number of upland rice growers had increased from a few thousand to over 40,000.

Other actors in Uganda had a rather different reaction to the rice seed videos. They thought that farmers, when given the knowledge, would purchase less often from seed companies. In 2007, the NGO Sasakawa Global 2000 (SG2000) translated the rice quality video (made in Benin and not dealing with seed but with general rice post-harvest practices) into four local languages. SG2000 distributed copies to extension services and farmer associations and also engaged policy-makers, a TV station and a farmers' newspaper (*Farmers Media*). SG2000 was less interested in translating the seed videos, as they did not see it supporting the development of a private seed sector. Sometimes the institutional context rather than the intercultural sensitivity determines an actor's response to a particular video.

The appreciation of relevance of content and demand from the rice-growing community may overrule institutional barriers to the use of cross-cultural learning products. The more that Ugandan scientists interacted with farmers and farmer organizations, the more they were asked why only the rice quality video had been translated and not the other videos. In 2009, the National Agricultural Research Organization (NARO) did respond to this demand from the farming community and helped to translate all 11 rice videos. Whether they were made in Bangladesh, Benin, Mali or Burkina Faso was no longer an issue; rather it was seen as a positive attribute.

Transformative Learning

Transformative learning goes beyond gaining factual knowledge alone. It triggers individuals to change their frames of reference by critically reflecting on their assumptions and beliefs and consciously making and implementing plans that bring about new ways of defining their worlds. According to Mezirow (1997), this process is fundamentally rational and analytical. However, various scholars state that it goes beyond the rational and also includes political, spiritual or emotional transformation (Boyd and Myers, 1988; Dirkx, 2006). This type of learning requires a willingness to be vulnerable and have ones' attitudes and assumptions challenged.

Our experience of introducing the Bangladeshi videos in Africa confirms the importance of the emotional dimension in learning. In literature, the benefits of farmer-to-farmer extension have mainly been explained in terms of linguistic comprehension. Farmers express themselves in a vernacular language that is easily understood by their peers. When captured on video and translated into other languages, some of the meaning may get lost. However, on video farmers communicate in the visual channel, as well as verbally, which strengthens communication (Hymes, 1977). Crucial to the *zooming-in zooming-out* approach is that farmers who feature in the Bangladeshi videos had helped develop the technologies. Their enthusiasm, self-confidence and emotions are equally communicated alongside the words and images.

If the subject touches on their daily life, peers easily relate to each other across cultures. According to Chris Garforth (1998) from Reading University in the UK, videos in different cultural contexts are more easily shown to intermediate users than to end-users. Our experience shows that for videos made according to the *zooming-in zooming-out* approach this is quite the opposite. We found that the desire to use the Bangladeshi videos in Africa was positively influenced by the emotional

connectedness of the actor to the end-users. We argue that the emotions conveyed by farmer-to-farmer videos strongly complement the technical content. The more the intermediaries relate to the end-users, the more they are sensitive to the affective and other extra-rational aspects and the less they will be inhibited to using cross-cultural learning videos.

Conclusion

Scientists, extensionists and public servants in Africa often imagined that the cultural differences between African and Asian farmers were so great that African villagers would not appreciate agricultural videos made in Bangladesh. However, the African farmers themselves could readily relate to the Bangladesh videos. This may suggest that human-kind has broad similarities (people are people) so that they can understand each other's motives and techniques for solving problems. Or it may suggest that rice-farming imposes a discipline on people which creates cross-cultural similarities among rice societies on different continents.

Farmer-centered learning videos can be used in a cross-cultural setting if they address real concerns and if the farmers featuring in them are real-life farmers rather than actors. Seeing that people in other parts of the world face similar problems, *and* were able to solve these problems by themselves, proved an additional source of motivation.

Public servants work in institutions devoted to nation-building, and hence their initial reaction to videos made outside their country is often one of reservation. The public servants said things like 'the cultural differences would make farmers focus too much on the foreign culture, rather than on the subject, so the videos will not be useful to our farmers' or 'we want to add some images of our own farmers, so that they can better relate', or 'we could have made our own videos if we had had the resources'.

Skeptics changed their minds when watching the videos alongside the farmers. Having a few people in the group who have a high level of intercultural sensitivity also helps. We used this formula in The Gambia and Mali. After hearing the responses of rural women in the audience, research and extension staff became more convinced that the Bangladeshi rice seed videos were truly of value to their country's farmers. Cultures are often open to useful ideas from elsewhere. They are not closed with fixed boundaries but permeable (Barnes, 1971). As our experiences show, cultural affinities can at times be stronger between rural farmers across the globe than between farmers and researchers within the same country who are usually separated by differences in class, education, and so on.

Once the public sector agencies were convinced about the national relevance of the videos they decided to translate them into their own languages (which is also a lot of work). This was perhaps a way of 'naturalizing' the videos. By 2009, the Bangladeshi videos were available in 20 African languages. As with participatory research, where multiple visions are allowed to converge in a constructive way, watching the videos with farmers made the skeptical scientists and service providers more willing to use the cross-cultural learning videos.

Additional mechanisms need to be explored to help overcome the reluctance of R&D actors towards cross-cultural technology-mediated learning and to trigger

unexpected actors to engage in rural learning systems. To enhance sustainable agriculture in Africa, the capacities of end-users and intermediate users need to be strengthened and new linkages between actors established. Cross-cultural learning videos can play a role in supporting these diverse functions.

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