

Communicating Agricultural and Health-Related Information in Low Literacy Communities: A Case Study of Villagers Served by the Bougoula Commune in Mali

by Assa Kanté, Florence Dunkel (Department of Plant Sciences and Plant Pathology, Montana State University), Ashley Williams (Department of Geography, University of Missoula), Sam Magro (Plant Sciences and Plant Pathology, Montana State University), Haoua Traoré (Peace Corps, Bamako, Mali), and Abdoulaye Camara (Institut D'Economie Rurale, Bamako, Mali)

MEAS HRD Case Study Series, # 11

Abstract

When villagers in Bougoula Commune in Mali were asked to rank their preferred ways for receiving information about problems related to water, new technologies and communication, and mass media channels ranked the lowest. The respondents preferred interpersonal communication channels with the chief of the village followed by meetings, Extension agents and peer farmers, which were rated equally. Both genders seemed equally concerned about disease, ranking malaria as the highest concern. The study showed gender differences, however, in water-related infrastructure issues. Men were more interested in dams, wells and bridges. Women were interested in issues that affected their traditional and daily duties, such as water pumps, access to water and pollution by pesticides. Therefore,, issues may need to be addressed separately according to gender. Careful attention also needs to be paid to the channels through which the educational information is sent. The authors recommend the empowerment of opinion leaders to transmit appropriate information effectively to villagers because of referent power and their influence within their gender groups

Introduction and Conceptual Framework

People living in the United States of America (USA) or any other industrialized nation take safe drinking water for granted. The World Health Organization reports, however, that more than 1.2 billion people lack access to clean water, and that more than 5 million die every year from contaminated water or water-related diseases (Cain and Gleick, 2005). Also, the World Bank estimated in 2004 that 1.5 billion people in the world lacked quality water. This global water crisis poses a serious threat of illness and death from tainted water or from water-borne disease (Cain and Gleick, 2005).

A growing awareness exists that the water crisis undermines economic growth in developing nations, can cause conflicts

over resources and can affect global security by worsening conditions in states already economically weak (Collier, 2007). In developing countries, because millions of people suffer or die from poor drinking water, one of the United Nations' millennium development goals (MDGs) is to ensure clean water for all. Absent that, it is predicted that tens of millions of people will probably perish from tainted water and water-borne diseases by 2020 (Cain and Gleick, 2005; World Bank, 2004).

African researchers reported water contaminated with coliform bacteria, excess salt, atrazine, enteroviruses and pesticides (Du Preez et al., 2004; Ehlers, Grabow and Pavlov, 2005; Faye et al., 2004; Gasana, Morin, Ndikuyeze and Kamoso, 2002; Kusiiluka et al., 2004), including some studies in Mali. In Mali, water-borne intestinal diseases were found to be public health concerns (Plate, Strassmann and Wilson, 2004); therefore, access to potable water has become an urgent issue. The knowledge and technology already exist to access clean water, so what is important currently is to assess and understand the needs of populations lacking these opportunities, and to identify effective communication channels for disseminating appropriate information to those people who suffer from unclean water.

In rural areas of Mali, as in many developing countries, external information to solve local problems is notoriously hard to obtain. The eighth MDG encouraged regions and countries to develop global partnership strategies that included information and communication technologies (ICTs) (World Bank, 2006). Subsequently, ICTs have gained widespread adoption worldwide, including in sub-Saharan Africa (SSA). Meso, Musa and Mbarika (2005) noted the pronounced proliferation of ICTs in SSA. In that trend, Community Learning and Information Centers (CLICs) were established in Mali to promote communication and openness to the world and provide community-based information access as well as learning facilities (USAID, 2003).

Unfortunately, many villagers did not view the CLICs as information centers, and the resources available were often poorly used (Fofana, personal communication, March 2005). Cartmell, Orr, and Kelemen (2006) indicated that the effective use of new information depends on the way the audience prefers to receive that information. In another study, Bardon, Hazel and Miller (2007) found an association between the communication channels and the socio-demographic characteristics of landowners in the United States. Rogers (2003) observed that those who are poor may be more localized in their choice and use of local communication channels. The purpose of this study was to describe villagers' perceptions of water-related issues and their preferences for receiving information, and to determine if villagers' preferences were influenced by their gender.

Purpose and Objectives

The study aimed to achieve the following objectives: rank the water-related problems in order of their importance as perceived by the villagers interviewed; and rank villagers' preferred ways of receiving information about water- and health-related issues.

Materials and Methods

To increase participation in educational programs by those for whom the programs are intended, it is imperative to collect their perspectives to develop strategies to meet their needs (Duncan and Marotz-Baden, 1999; Waters and Haskell, 1989). The methodology of data collection for this study was a participatory process (Girara and Abela, 1991; Gueye, 1993) developed by the researchers using focus groups. Focus groups are "small groups of 6-12 participants of similar or varied characteristics" (Duncan and Marotz-Baden, p. 2).

The study was conducted in 13 villages in Mali during 2004 to determine the villagers' preferences regarding available communication channels including interpersonal channels (chief of the village, peer farmer, extension agents and meetings) and mass media (radio, book and CLIC); and a ranking of water-related issues according to their importance. The villages studied in the Commune of Bougoula were araco, Tadianabougou, Tamala, Falan, Safecoro, Kangole, Biron, Koren, Tadianabougou, Nianzan and Bougoula. The villages studied in the neighboring Commune of Dialadoroba were Sanambebe and Dialakoroba.

A set of pictures representing the main issues and various communication channels was laid out for voting by two groups that were divided on the basis of gender. The list of issues was proposed by researchers, and the villagers were invited to add or remove items from the list according to their perceptions of the relevance of the items. Stones were used to indicate a group's vote: the villagers placed more stones in front of the issues about which they were more concerned, fewer stones in front of issues attracting less

concern, and none if the issue was not a concern. Bardon, Hazel and Miller (2007) used a similar method when asking participants to rank their preferences for information delivery methods.

In the water-related issues portion of the study, the female and male groups were interviewed separately. Then the males and females were brought together and given the 23 stones for water-related diseases to vote as a village. For infrastructure questions, 14 stones were used for voting. Males and females negotiated according to the importance of the issues for both genders and decided the number of stones to be assigned to each issue presented. In the negotiation process, each gender group tried to persuade the other group. Regarding villagers' perceptions on communication channels, the villagers were given 20 stones with which to vote.

Findings and Discussions

The study addressed two major issues important to villagers in Mali. Each issue was examined in male, female and mixed-gender consensus groups in each village. The results presented are a composite of the results from the 13 villages studied.

Villagers' water-related problems

The study revealed problems related to water infrastructure, diseases related to water and hunger caused by drought. When researchers examined male and female villagers' responses to water-related problems, they found obvious gender differences. Both groups had the same three primary concerns: the toilet, the pump and the dam. However, females saw the pump, the day-to-day source of water for drinking, cooking and washing, as the primary issue (Figure 1). The males were most concerned with the dam (Figure 2). Regarding health and other water-related problems, the male and female villagers demonstrated the most similar responses in the area of health-related problems. In both groups, the five top-ranking problems were, in descending order, malaria, hunger, diarrhea, cough and eye infections (Figure 3).

Villagers' preferred methods of receiving information

Overall, the response patterns of male and female villagers were relatively similar except with regard to the CLIC, which males ranked second as a preferred method of receiving information (Figure 5). However, it received the fewest votes from the females in the study (Figure 4). Among the villages studied, female villagers showed more consistent patterns of response than male villagers, with the chief of village and meetings being their preferred methods of disseminating information. Males in the villages studied were more variable in their responses.

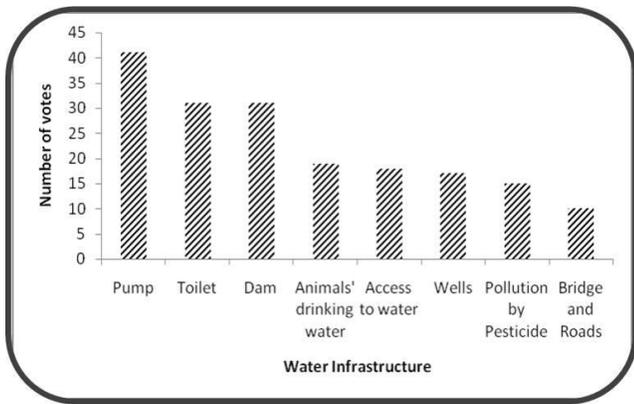


Figure 1. Main problems encountered by female villagers related to water infrastructure.

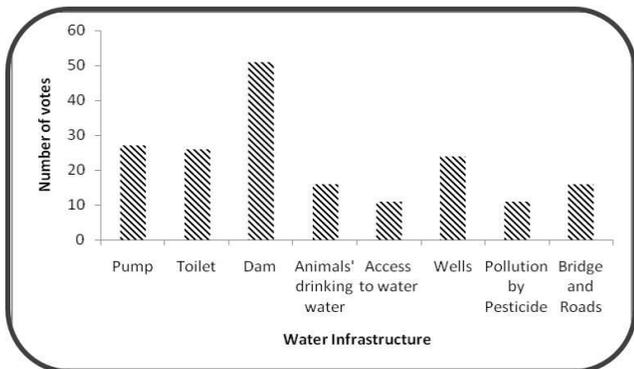


Figure 2. Main problems encountered by male villagers related to water infrastructure.

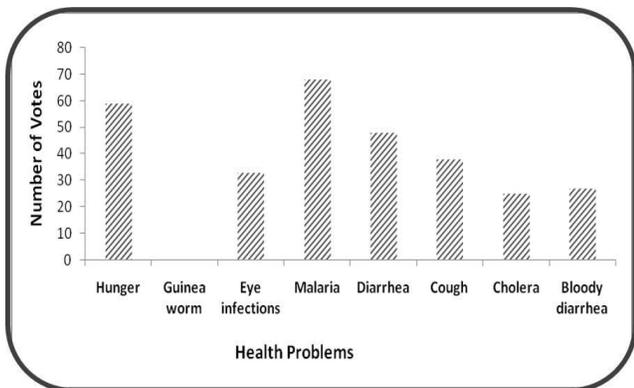


Figure 3. Main health-related problems encountered by male and female villagers as a consensus group.

The female villagers studied, especially those from Tadianabougou, Dialakoroba, Falan and Safekoro, showed more consistent patterns of response than male villagers, with the chief of village and meetings being the preferred

methods for disseminating information. Although the males studied were more variable in their responses, the chief of village and meetings were both among the top three preferred information methods. The findings of the study showed that both males and females preferred interpersonal communications channels over mass media. Although radio is a popular communication channel for receiving news in developing countries (Siemering, 2007), the villagers interviewed preferred to receive information about water-related problems through their chief of village. The CLIC, which is a cluster of ICTs, did not meet the villagers' expectations for the receipt of information.

Because interpersonal communications were preferred, the researchers concluded that the perceived value of oral communication is deeply embedded in the culture of many Malians. This was supported by Kanté (2007) in a case study in Mali, when she collected female groups' perceptions on their preference for training methods. From their responses, Kanté recommended that training programs should use visual aids, with an emphasis on interpersonal methods. She also concluded that the involvement of community leaders in the innovation dissemination process, based on their social position in the community, was very important. Rogers (2003) explained that community leaders are frequently viewed as opinion leaders. Opinion leaders, because of their referent power and informal influence on communities, should be well-informed to provide correct and timely information to their followers.

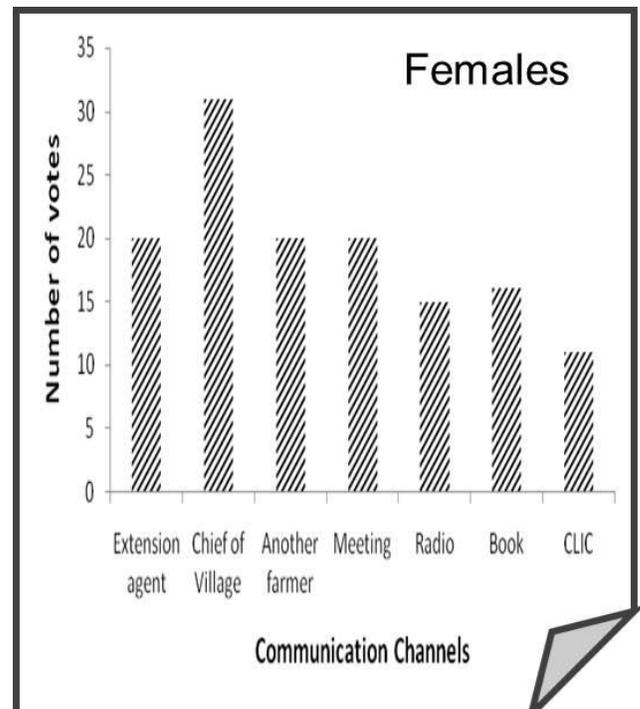


Figure 4. Female villagers' preferred methods of receiving information on their most important problems.

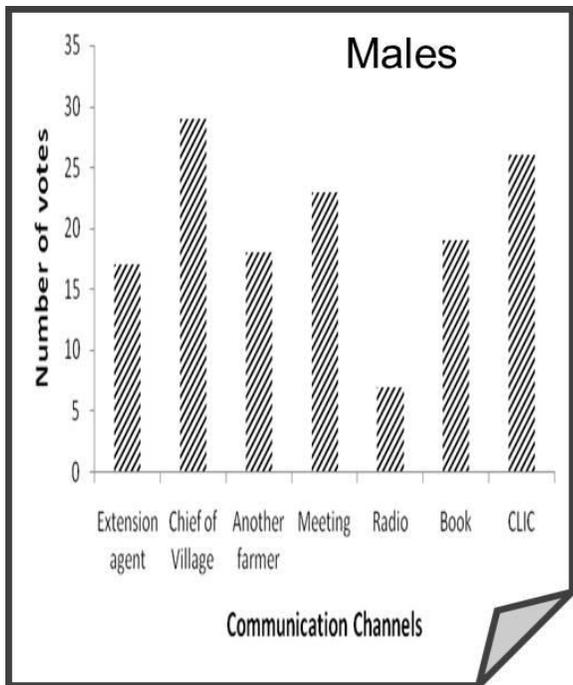


Figure 5. Male villagers' preferred methods of receiving information on their most important problems.

Educational Importance

The issues of major concern for females and of less interest to males—disease, potable water and pesticide pollution (which may occur in both water and food)—were those that affected tasks that traditionally are carried out by females: gathering and preparing food and caring for the sick. Thus, issues seen as problems that affected females more dramatically than males may need to be addressed separately from issues viewed as important by males and females alike. Extension and other development assistance providers should consider gender differences when prioritizing, planning and delivering assistance to the villages studied as well as similar villages in Mali.

Conclusions, Recommendations and Implications

An examination of male and female villagers' responses to water related problems and preferred communication channels revealed obvious gender differences. Some issues may need to be addressed separately, according to gender group. Both genders, however, perceived specific health issues as holding the same level of importance. Villagers preferred interpersonal communication channels for receiving information, except for the CLIC, which male participants ranked second. Overall, the chief of the village was the villagers' traditional communication channel, which can be explained by the cultural obligations of community leaders in Mali.

The authors recommend the empowerment of opinion leaders to transmit appropriate information effectively to villagers because of their referent power and the influence they hold within their gender groups (Rogers, 2003). Careful attention also needs to be paid to the channels through which the educational information is sent. For the CLICs to be more useful to villagers, including small-scale subsistence farmers, it may be necessary to engage the village chief and elders in a discussion of what would be most appropriate, especially culturally. It could be that the CLIC buildings did not provide no opportunities for oral communication, which is traditionally the information venue most valued by rural Malians. If CLICs are to be encouraged as significant information sources, extension services need to explore ways of demonstrating their usefulness to females.

References

- Bardon, R.E., D. Hazel and K. Miller. 2007. Preferred information delivery methods of North Carolina forest landowners. *Journal of Extension* 45(5), 1-12. Retrieved Feb. 15, 2009, from <http://www.joe.org>.
- Cain, N.L., Gleick, P.H. 2005. *The global water crisis*. The Biennial Report on Freshwater Resources . *In Issues in Science and Technology*, 21, p 79 (3). Thompson Gale Document Number: A134258325. Island Press, NW.
- Cartmell, D. D, Orr, C.L, and Kelemen, D.B. (2006. Effectively disseminating information to limited-scale landowners in the urban/rural interface. *Journal of Extension* 44(1), 1-10. Retrieved Feb.15, 2009, from <http://www.joe.org>.
- Collier, P.. 2007.. *The bottom billion: Why the poorest countries are failing and what can be done about it*. Oxford, U.K.: Oxford University Press.
- Duncan, S., and R. Marotz-Baden 1999. Using focus groups to identify rural participant needs in balancing work and family education. *Journal of Extension*, 37(1). Retrieved November 17, 2003, from <http://www.joe.org/joe/>
- Du Preez, L.H., P.J. Jansen van Rensburg, A.M. Jooste, J.A. Carr, J.P. Giesy, T.S. Gross et al. 2004. Seasonal exposure to triazine and other pesticides in water in the western Highveld corn-production region in South Africa. *Environmental Pollution* 135(11), 131-141.
- Ehlers, M.M., W.O.K. Grabow and D.N. Pavlov. 2005. Detection of enteroviruses in untreated and treated drinking water supplies in South Africa. *Water Research* 39(11), 2253-2258.
- Faye, S., P. Maloszewski, W. Stichler, P. Trimborn, S.C. Faye and C.B. Gaye. 2004. Groundwater salinization in the Saloum (Senegal) delta aquifer: Minor elements and isotopic indicators. *Science of the Total Environment* 343(1-3), 243-259.

- Fofana, A. 2005. CLIC project national coordinator, Institut Africain de Gestion et de Formation. Personnal Communication.
- Gasana, J., J. Morin, A. Ndikuyeze and P. Kamoso. 2002. Impact of water supply and sanitation on diarrheal morbidity among young children in the socioeconomic and cultural context of Rwanda (Africa). Environmental Research Section A(90), 76-88.
- Girara, P.A., and P.A. Abela. 1991. Farmer participatory research in North Omo, Ethiopia -- report of a training course in rapid rural appraisal. London: International Institute for Environment and Development Research.
- Gueye, M.B. 1993. Rapport de l'atelier régional de formation des formateurs sur la méthode accélérée de recherche participative (MARP). International Institute for Environment and Development Research Series (1), 48.
- Kanté, A. 2007. Rural women's perceptions of the diffusion of technological innovations that increase quality shea butter in Mali. Unpublished master's thesis, Montana State University, Bozeman.
- Kusiluka, L.J.M., M.R.S. Mlozi, P.K.T. Munishi, E.D. Karimuriko, E.J. Luoga, R.H. Mdegela et al. 2004. Preliminary observations on accessibility and utilization of water in selected villages in Dodoma Rural and Bagamoyo Districts, Tanzania. Physics and Chemistry of the Earth 29, 1275-1280.
- Meso, P., P. Musa and V. Mbarika. 2005. Towards a model of consumer use of mobile information and communication technology in LDCs: The case of Sub-Saharan Africa. Information Systems 15, 119-146.
- Plate, D.K., B.I. Strassmann and M.L. Wilson. 2004. Water sources associated with childhood diarrhea prevalence in rural east-central Mali. Tropical Medicine & International Health 9(3), 416-425.
- Rogers, E.M. 2003. Diffusion of innovations (5th ed.). New York: Free Press.
- Scoones, I.J.T., A. Cornwall, I. Guijt, A. Welbourn, J.N. Pretty and R. Chambers. 1993. Rural people's knowledge, agricultural research and extension practice: Overview papers. International Institute for Environment and Development Research Series (1), 107.
- Siemering, B. 2007. Radio, the appropriate technology. *Appropriate Technology* 34(2), 43-45.
- United States Agency for International Development (USAID). 2003. Community learning and information centers: Program description. USAID, Bamako, Mali.
- Waters, R.G., and L.J. Haskell. 1989. Identifying staff development needs of cooperative extension faculty using a modified Borich needs assessment model. *Journal of Agricultural Education* 30(2), 26-32.
- World Bank. 2004. World development indicators database. Senegal. Retrieved April 10, 2008, from <http://devdata.worldbank.org>.
- World Bank. 2006. World development indicators database. Senegal. Retrieved April 10, 2008, from <http://devdata.worldbank.org>.

Note:

The basic findings of this case study were first presented at the 25th annual conference of the Association for International Agricultural and Extension Education (AIAEE), San Juan, Porto Rico, USA, May 24-27, 2009. At that time the corresponding author worked in the Department of Agricultural Education, Communications and Leadership, College of Agricultural Sciences and Natural Resources, Oklahoma State University, but is now the Sasakawa Africa Fund for Extension Education (SAFE) coordinator for Mali and Burkina Faso.

Disclaimer

This Case Study was made possible by the generous support of the American people through the United States Agency for International Development, USAID. The contents are the responsibility of the MEAS Consortium and do not necessarily reflect the views of USAID or the United States Government.

Technical editing by Leslie Johnson, Michigan State University, and production by Andrea Bohn, University of Illinois at Urbana-Champaign.

Designed to
be Shared



© Copyright MEAS Project.

Licensed: Creative Commons Attribution 3.0 Unported
creativecommons.org/licenses/by/3.0/

Assa Kante et al.

January 2013 - MEAS Case Study Series on
Human Resource Development in
Agricultural Extension

All case studies are available at www.meas-extension.org/meas-offers/case-studies.

