Improving Income Generation in Rural India

ICT-trained veterinarians assist small farmers with livestock production

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Evidence Narratives at the Center for Information & Society

This paper is part of a project at the Center for Information and Society to broaden and deepen our understanding of the impact of Information and Communication Technologies and Development (ICTD).

Our intention is to choose examples of ICTD implementations carefully and to write about them in such a way that each one, individually, illustrates important aspects of the featured settings and so that, taken together, the examples describe and reveal larger themes about core aspects of ICTD. It is our hope that by being systematic at every stage in the research process we are able to expedite the accumulation of credible and accessible information about the impact of ICTD on individuals and communities.

The ICTD field is filled with success stories extolling the benefits of access to Information Technology. As these often rhetorically powerful and memorable stories describe what can be achieved under the best of conditions, they may distort our understanding of what is achieved more typically, or may fail to describe aspects of their settings or strategies that were crucial to success.

Each setting in which ICTD projects are implemented is unique, but our experience is that with careful attention to the idiosyncrasies and commonalities across settings, patterns soon emerge which reveal more general themes about the qualities of settings, people, and programs that make a difference.

While tension may exist between an organization's desire to feature certain cases and the critical researcher's commitment to rigor, we believe that a methodology built on intensive questioning and attention to detail can yield stories that uncover and communicate an accumulation of credible evidence about why individual programs and larger strategies succeed and fail.

By crafting exemplary stories, by developing and disseminating useful methodological tools, and by promoting these techniques among NGO managers and grant makers, CIS aims to shape a research framework that can fulfill the needs of NGOs and donors, with stories that accurately represent realities in underserved communities, accumulating evidence that serves the ends of rigorous analysis while publicizing good work.

This paper is an example and an experiment in this methodological landscape. It is supported in large part by a grant from Microsoft Community Affairs. Direction, guidance and leadership has been provided by Andrew Gordon of the Daniel J. Evans School of Public Affairs at the University of Washington. Joe Sullivan, staff researcher at the Center for Information and Society, is the lead editor for this project.

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When the young veterinary fellows gather for lessons at the Pondicherry Village Resource Center in southern India, they encounter teaching methods of both the old school and the new school of veterinary science. The old school is the twenty-five years' experience of white haired Dr. A. R. Thiagarajan, who lectures on the importance of evening cattle inseminations (evening is when the cow is most relaxed). The new school commences when Dr. Thiagarajan turns to his PowerPoint slide show. He explains the insemination process through diagrams and digital photos and then clicks on video of a recent evening insemination in a nearby village.
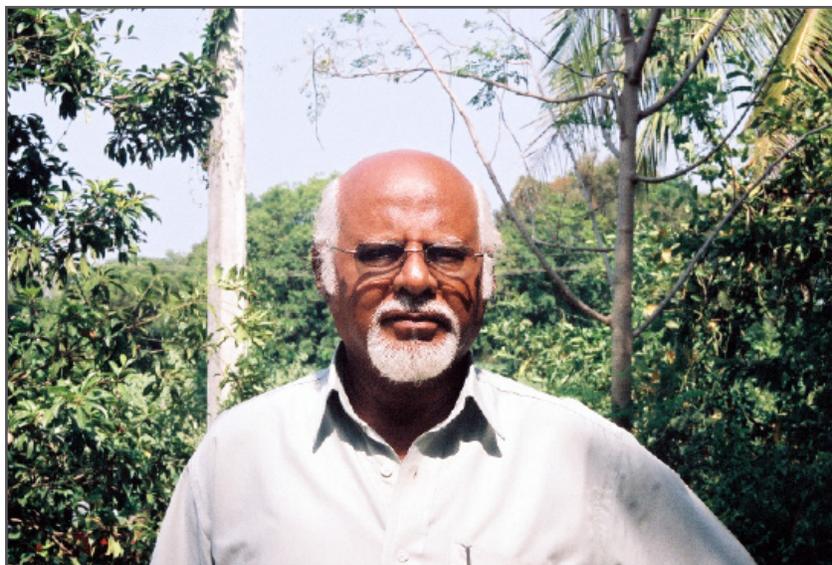
The training of veterinarian fellows in the state of Tamil Nadu is part of a program of the Jamsetji Tata National Virtual Academy which trains rural Indians in a variety of agricultural practices using ICT. These programs take place through a broad network of village knowledge centers managed by the M. S. Swaminathan Research Foundation (MSSRF), an organization formed to improve the livelihoods of farmers and to strengthen the Indian agricultural economy in Tamil Nadu and beyond.

For the vet fellows, ICT is both a method of instruction and a method of communicating with other fellows by way of teleconferencing. For the farmers receiving the veterinary care, ICT-assisted demonstrations at their local village knowledge centers build confidence in the vets that will soon visit their farms.

The MSSRF fellows program operates through community technology centers, expanding in number and in activities through the support of Microsoft Unlimited Potential and other partners. Referred to as the network of VKCs, or Village Knowledge Centers, the scores of rural meeting points are connected by central hubs known as Village Resource Centers (VRCs). It is at the VRCs where the major, network-wide trainings take place – trainings such as those which support the vet fellows. Through its Microsoft UP support, MSSRF is adding thirty new centers and creating micro-enterprise modules and income generation content aimed at improving farm livelihoods.

An Alternative to City Veterinarians

The MSSRF network begins its work village-by-village, talking with local leaders – members of the governing council referred to as the panchayat – and assessing the situation of the local farmers. Pondicherry VRC manager Girija explains the steps she took reaching out to villages in her region: "We have a meeting with the panchayat and learn what is needed, and they will offer us a building to use for the center. Then we will begin to talk with villagers abut what they need – information, trainings."

The intervention of the MSSRF veterinarian fellows program was envisioned as a specific way to maximize livestock productivity – a key aspect of income generation

Dr. A. R. Thiagarajan has added a new chapter to his twenty-five years experience as a veterinarian in rural India: the use of ICT to teach a team of rural vet fellows, and their farmer clients.

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> *Dr. Thiagarajan, on the hazards of relying on city veterinarians to serve rural communities.*

in rural areas. By addressing a variety of needs at once, the fellows program seeks to have a broad impact. First, city-based veterinarians are prohibitively expensive and face logistical obstacles, according to Dr. Thiagarajan who runs the vet fellows program. The fees of city vets can range from 500 to 800 rupees (12 to 20 dollars) per visit, a rate five times more than the vet fellows who charge 100 to 150 rupees. Second, even if a farmer can afford the fees, the great distances between villages and the difficulties in rural transportation make city vets less reliable in an emergency – they may come late, and they won't come in the evenings. The result of inaccessible city vets, says Dr. Thiagarajan, can be devastating for a farm family: "They come late, or won't come at all." And if the animal needs help and can't get it? "God takes care of it," Dr. Thiagarajan replies.

Through the fellows program, MSSRF has been able to address some animal husbandry needs in rural communities. By providing less expensive and more accessible medical care, the program allows farmers to more safely increase livestock production and address the disease and injuries of its herds. In addition to the farmers they serve, the eighteen fellows themselves also earn an income while gaining valuable employment experience for the future.

ICT and Livestock Production

The small farmers in southern India who raise livestock to support their families are regularly faced with the need for veterinary interventions. The insemination of cows, delivery of newborn goats, and diagnosis and treatment of disease or injury are each a part of the daily work of these farmers. These crossroads in a farm animal's life are opportunities for a healthy and expanded flock, or can present dangers that can bring the loss of livestock and a blow to the family's livelihood.

Dr. Thiagarajan has been a veterinarian in India for twenty-five years, and he has seen any number of animal health problems. But when communicating his experience with rural farmers, he has discovered that the men and women caring for the herds of Tamil Nadu become nervous when words turn to action. Opening a goat's mouth to inspect its teeth, reaching into a cow's uterus to check on the progress of a pregnancy – these are delicate moments for the farmers who rely on the health of their livestock to survive. According to Dr. Thiagarajan, the role of ICT has been indispensable both in building the skills of the young fellows, and in building the confidence and awareness of the farmers they serve.

The sight of cattle on the roads of South Asia is commonplace, as farming is a key part of the economy and the livelihood of families.

Training for the vet fellows is an intensive, three-month program made up of four-day weeks and full days of instruction. The process begins with theoretical instruction using textbooks, lectures, and PowerPoint exercises. Then, as the students move on to the practical training, there is a need for hands-on knowledge. "But we can't afford to have a specimen for each student," Dr. Thiagarajan explains, noting the value of using digital cameras to capture still images of medical cases and motion pictures of common procedures. The practical classes demonstrate with digital photography the essential elements of the profession: the dissection of ovaries, the details of the uterus, the location of lymph nodes. Each student is able to learn precise anatomy of the animals they will be working with. Finally, when the students are more comfortable with the photographic representation of animal anatomy, then the course moves on to actual specimens for dissection and analysis.

> *"We can't afford to have a specimen for each student."*
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> *Dr. Thiagarajan, on the benefits of digital tools such as cameras, powerpoint and the Internet for veterinary students.*

In addition to the lectures and practical exercises using ICT, the training hub provides resources for teleconferencing with other fellows, and a central contact point if fellows have questions for their trainer. MSSRF also keeps a database of agricultural and animal husbandry resources, allowing fellows to cross-check the cases they are handling with other past practices.

Virtual Grange Hall for Farmers

A final piece in the process is the ability of the VRCs and VKCs to perform community outreach. According to S. Senthilkumaran, Director of the Education, Communication and Technology division of MSSRF, a critical function of the village centers is to bring farmers together to explain successful farming practices and address problems threatening livelihoods. The Village Resource Center becomes a place to train the fellows as field workers, and also a place to prepare the fellows' hosts for their arrivals. The VRC in Pondicherry, for example, where Dr. Thiagarajan is based, offers a Lay Inseminators Training "which helps the fellows learn how to detect signs of heat," Dr. Thiagarajan explains. At the same time, the VRC also offers regular meetings where the same lessons are conveyed to the farmers themselves. The result is increased acceptance of the young villagers coming to provide assistance, and increased knowledge of the farmers so that they can better time their inseminations.

ICT plays an important role in the process, allowing farmers to see films of actual procedures and images of problems they may be facing themselves. The community meetings allow farmers to discuss the procedures, improving trust between the fellows and the farmers. Beyond its role in communicating information directly among members of the farming community, ICT also acts to increase the prestige of the programs. The veterinary advice – when conveyed through the technological means of computers, projections, and teleconferences – is reported to enhance credibility.

Because the community centers also provide e-skills training and drop-in play for the village children, they get a further boost in the eyes of the farmers. They are familiar places. Together, all these factors converge: the community magnet of technology centers, the skills of the fellows, the cost savings, and the knowledge itself. The result is the health of the herd, and the livelihood of its shepherds.

AUTHOR

Mark West is an ethnographer whose international research and work in the development field is based in South Asia and in Central and Eastern Europe. Mark's fieldwork has centered on the use of critical ethnography to bring a more participatory connection between local communities and international development projects.

In South Asia, Mark's research and work focus on the resistance networks of rural Dalits, or "untouchables," with a particular interest in the grassroots campaigns of barefoot lawyers. In Central and Eastern Europe he has worked to improve the transparency and communications of newly developing court systems. Since 2007, Mark has begun conducting fieldwork with the CIS on the economic and social impact of ICT programs in marginalized communities around the world.

Mark has served as a rule of law consultant with the United States Agency for International Development in Eastern Europe, and as a Human Rights Field Mentor with Stanford LawSchool. He holds a J.D. from the University of Washington, and is a Ph.D. Candidate in the School of Communication and Department of Anthropology at Northwestern University.