



## Mali: Indigenous Knowledge —Blending the New and the Old

**H**ow is indigenous knowledge brought out of the traditional closet, into synergy with new technologies and into application on new development tasks? What are the “pedagogies” by which it is elicited, re-learned and reworked? An experience more than two decades old from the Republic of Mali suggests some valuable lessons.

### Hidden structure, hidden knowledge

In Mali, as in many Sub-Saharan African countries, there has been a strong bifurcation between the customs and knowledge of traditional rural cultures on the one hand and the systems and technologies of official urban society on the other.

In the late 1970s, a team of Malian researchers assisted by the author conducted a thoroughgoing evaluation of functional adult literacy in the Western and peanut-growing regions of the country. The region was then under the agricultural guidance of a parastatal corporation, the *Opération Arachides et Cultures Vivrières* (Peanut and Food Crops Operation or “OACV”), which was charged with developing production and upgrading farm technology. In fact, the literacy program itself was administered under OACV tutelage and concentrated – at least in theory – on the skills that rural residents needed to improve production and take increased responsibility for credit and market operations. In fact, however, OACV had, up to that point, done little to transfer authority and resources for local operations to communities that demonstrated literate competence.

The results of the first year of evaluation demonstrated that, if the literacy program had attained its full quantitative objectives in only a few localities, the vast majority of participating com-

munities had nonetheless managed to produce a “nucleus” of literate people – generally from 5 to 8 young adults. These villagers were then charged by the others with principally shadowing the marketing teams sent out to buy commercial crops by OACV, in order to protect against fraud, and monitoring tax bills and remissions. As the evaluation team remarked after closer inspection, the result seemed the consequence of a very accurate assessment by local people of the nature and magnitude of literacy’s uses in the rural environment. Market and tax monitoring were important, but not frequent enough from an individual point of view to justify each person or family mastering the new skills. Once “collectivized” and assigned to a small team of village residents, however, they made for critical and profitable work.

On the strength of its assessment, the evaluation team succeeded in convincing OACV officials to approve the transfer of marketing functions – and of a portion of the profit margin on commercial crop sales – to villages having a sufficient number of new literates to handle the tasks. And the team was then responsible, during its own trip

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around rural areas at the outset of the following year's literacy campaign, for explaining the policy change and the modalities of its application to village leaders.

An interesting thing then transpired. During colonial times, villages throughout the Malian countryside had adopted the habit of naming a fictitious chief and set of counselors to meet with the French administration whenever it came visiting. Contacts with the colonial administration were considered, for the most part, beneath the dignity of the true traditional authorities and seldom relevant to the village's lasting interests. The same pattern persisted in many areas after "flag" independence in 1960, because representatives of the modern Malian state were felt to be no less foreign to traditional culture and scarcely more supportive of its conservation and well-being. In more than one village, therefore, the evaluation team began presenting the new policy and its implications to a first set of local notables. As soon as the village counterparts realized that a serious transfer of power and resources was under discussion, however, they asked to be excused and then, as if on a revolving stage, a second set of negotiators took their place: the real traditional authorities.

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### Priming a social process

How are traditional culture and its store of knowledge genuinely "engaged" in development projects? A perception of true interest, like the one that intervened in those discussions of the transfer of marketing functions, is obviously a key ingredient. But indigenous science may be trickier to flush out of cover and express than the simple perception of self-interest. As an Ewe proverb puts the matter, "The bird of knowledge – one person alone can never catch it." Knowledge that is social in nature and culturally transmitted typically comes forth in social situations, where groups of people form to resolve what they perceive to be important problems or to communicate wisdom across generations.

Methods for priming this process were developed in Mali by the same group of researchers in connection with an effort undertaken to create other uses for literacy. With World Bank support, the Ministry of Education sponsored in the months to follow a study of new directions for nonformal basic education, premised on the notion that newly acquired literacy should be considered a starting point for new training relevant to rural development as much as a goal achieved. The research team devised three training sequences for newly literate young adults – one on agricultural fertility, one on accounting systems for village enterprise, and one on the diagnosis and prevention of prevalent infectious diseases.

### Methods for eliciting local knowledge

This was training with a difference, however. The researchers wished to blend outside technical knowledge in each domain with the insights of local culture and tradition — and to do so by involving those most aware of the latter: the elders in each community. They therefore worked out a procedure with several distinct steps:

First, the researchers met with village authorities to ask their permission to discuss with the elders current local problems and possible solutions in the area under consideration (declining soil fertility, rampant river blindness, or difficulties in starting local enterprise). Since communities were chosen in localities where one or another of these problems was already particularly acute, agreement was rapidly reached in most cases.

During the session subsequently held with the village elders, the research team took care to dwell on (a) the nature and importance of the problem, as perceived by the community itself; (b) the availability of new technical methods that – if adapted and appropriately applied — might offer hope of effective solutions; and (c) the presence of young people newly literate in Bambara who potentially had the tools and inquisitiveness to learn new approaches and share them with others.

The researchers then proposed the idea of holding in the village a training workshop to analyze the problem and test new solutions. They promised, in this case, to bring study materials, information on the new technologies and some material for trying them out. And they requested that the elders sponsor the initiative and delegate the young people to attend and report back to them on the applicability of the new methods. Three villages ended up accepting the challenge and sponsoring the training, one on each of the topics.

### Ingredients in the recipe

The key challenge was then organizing the experience so that it was not just an opportunity for the dissemination of technical material and advanced training of the young people involved, but an occasion and stimulus for the expression of related local knowledge. To ensure this outcome, the training sessions, which lasted two weeks each, had five closely-related elements:

- *Technical content.* Researchers served as trainers but made sure that at least one highly skilled technical resource person was associated with each of the sessions. The team developed the initial curriculum, based on the Bambara translation of available dissemination materials.
- *Hands-on developmental work.* Each training included “laboratory” work with some tools and new technologies of relevance to the problem. Researchers responsible for the infectious disease program, for example, came armed with simple microscopes with which trainees could examine samples.
- *Field inquiry or local needs assessment.* Each training also entailed survey of the extent and nature of the problem in the locality by the trainees themselves.
- *Comparison with indigenous knowledge.* Researchers explicitly and systematically created occasions for expressing local knowledge about the problems under study and comparing these insights with the dissemination material.
- *Experimental trial and analysis.* Each training was designed to identify issues regarding the actual trial of new methods and based on the observation of their results.

The critical interaction with indigenous knowledge was handled in two ways. First, during the phase of field inquiry into current practices and needs, the trainees were careful to survey not just the problems people were encountering but also their understandings of root causes and their methods for addressing the issue. Still more importantly, *the evening of each day was devoted to a feedback and discussion session with village elders.* At this time, the young trainees reported

on events that had transpired and lessons learned during the day and sought reactions and suggestions from their elders about what these results meant and where to go next. This collective reflection proved to be the ideal venue for bringing out elements of traditional knowledge, comparing it to the “scientific” notions introduced in the training and bringing both to bear on the resolution of problems.

### Local knowledge of water-borne diseases

Though all three training episodes followed this general model, actual details of the sessions differed from one location to another as a function both of differences in the problem situations and differences in the social context. Each experience, though, shed new light on the methodology itself.

Training on infectious diseases was conducted in the village of Fasa, close to the Baloue River basin, a fertile farming area largely abandoned over the preceding years due to the high incidence of river blindness (onchocerciasis) and schistosomiasis. People in various stages of river blindness were quite evident in the village itself; and the community chose to focus on these two water-borne infections. A full census of those affected throughout the community was carried out by the trainees, who discovered that almost 25% of the population carried the onchocerciasis tumor and more than a third of those were already in at least the incipient stages of sight loss.

The local knowledge of the hosts regarding the parasites and the stages in their life cycle turned out to be considerable. The technical assistant to this training – a doctor from the University of Marseille – was astounded to find that the village elders knew things about the life cycle of the schistosome parasite that he believed only to have been discovered in French laboratories two years previously.

### Understanding soil fertility

The training session focusing on soil fertility was held in the village of Suransan Tumoto, north of the town of Kita in the peanut-growing regions of western Mali. The soils here had been depleted by successive commercial crops and the yields had begun to plummet. After an initial study of soil chemistry, the trainees set about their work by interviewing elders regarding the types of soil found in the village environment and the plants that had traditionally grown on each. They then carefully surveyed the topography and condition of this flora around the village with the help of an agricultural technician from the national research institute and brought back results for discussion with the entire community.

A comparison of agricultural extension themes on soil fertility with local knowledge of soil conditions and associated plant led to the decision to create an experimental farm sta-

tion to test different methods for improving agricultural yields. Unfortunately, this particular initiative was thereafter stopped by a conservative reaction from OACV, which judged it inadmissible to try out with local farmers types of experimentation its own extension agents had not mastered.

### Indigenous accounting systems

The training workshop on accounting and village enterprises was held in the cotton-growing region of the country, where crop marketing by newly literate personnel from local communities had opened the way to a certain amount of economic diversification. The movement, though, had encountered a serious obstacle: lack of Bambara language accounting systems that would allow local staff to assume full control of crop markets and to create other enterprises with the proceeds of this activity.

Here, after studying accounting methods, trainees interviewed elders concerning traditional means for ensuring accountability and carried out a workshop to inventory and create an appropriate Bambara-language terminology for the various steps in the process. The workshop concluded with the production and testing of an entire series of Bambara-language accounting forms and with a presentation to the assembled community of a locally-conducted audit of its financial operations.

### A pedagogy for expressing indigenous knowledge

The common denominator in all the sessions was the systematic attempt to take account of local knowledge and to bring it to bear on the design of new solutions to the development problems in question. This was accomplished by a judicious and creative application of long-standing adult education principles:

- focus on felt needs;
- start with what people already know;
- associate them as teachers in the learning enterprise;
- create a context for collective reflection and recall of relevant experiential data,
- vary modes of instruction; and
- follow through to actual application or resolution of problems.

But the key factors in mobilizing indigenous knowledge in these experiments – or turning the “revolving stage” pictured in the opening anecdote — were the middle ones in the list above. They involved ways of affiliating the “repositories” of that knowledge in commissioning training, then in taking part themselves in the search for solutions, all within a social scenario that lent itself to group reflection. The approach borrowed something from two sources — from the traditional African social structure, which assigns deliberative roles to the elders, management tasks to the householders and technical ones to the young people in a manner meant to be synergistic and complementary; and from participatory action research, which entails organizing learning around the tasks required to solve a problem.

Under these circumstances, the comparison and interaction with “modern science” became a stimulus rather than an inhibition to the expression of indigenous knowledge. Much of traditional knowledge — as of any scientific system — is fundamentally *taxonomic*: accumulated observation and organization of the different types of naturally occurring phenomena and their inter-correlations. The reservoir is rich, but the lack of means to record and compare individual variations or test and analyze planned interventions have left the agenda (sympathetic mastery of natural forces) incomplete. The kind of training organized in Mali and described here creates an opportunity not only to express indigenous knowledge and bring it to bear on development problems, but also to fulfill its own potential for improving the human condition through comparison and collaboration with a tradition that is more systematically based on the analysis of natural and planned variation.

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