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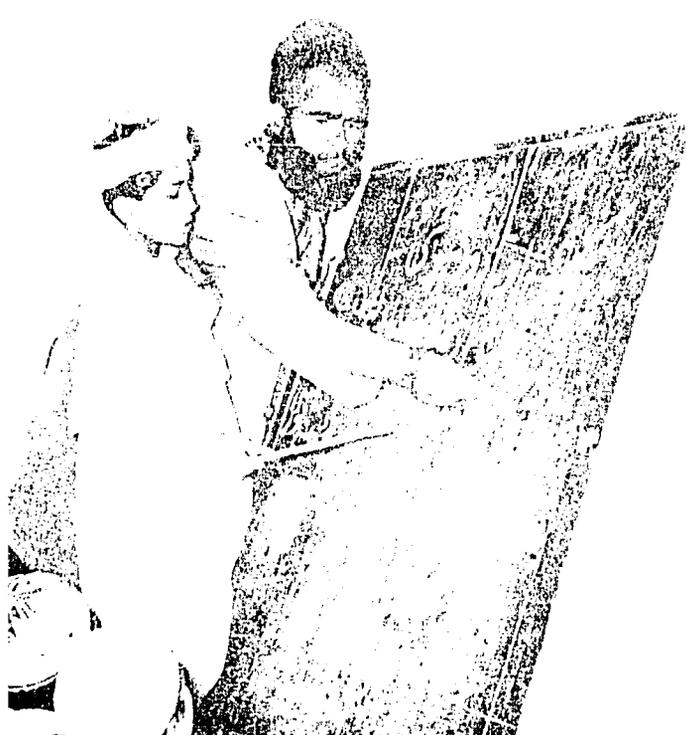
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EDUCATION FOR ALL



PRIMARY EDUCATION IN THE THIRD
WORLD. TOP OF THE PAGE: PRIMARY SCHOOL STUDENTS
IN TOGO, WEST AFRICA. (PHOTO: ILO)
LOWER LEFT: A VILLAGE SCHOOL IN AFGHANISTAN
(PHOTO: UNITED NATIONS)
LOWER RIGHT: A RURAL CLASSROOM IN
CHILE. (PHOTO: U.S.I.S. CHILE)

Education and Development

World Bank Staff

[Experience of the past decade has indicated the value of education for development, and especially primary education. Some of the problems of extending education to the poor are discussed.]

Every individual is born with a collection of abilities and talents. Education, in its many forms, has the potential to help fulfill and apply them. In some societies the economic function of schooling is regarded as minor--since the cultivation of the mind and the spirit, curiosity, contemplation and reasoning have more than economic purposes and justifications. But in the context of this article, it is the role of education in overcoming poverty--increasing incomes, improving health and nutrition, reducing family size--that receives most attention.

A decade or two ago, there was a widespread view that trained people were the key to development. Universal literacy was a political objective in many countries, but money spent on primary schooling was often regarded as diverted from activities that would have contributed more to economic growth. Planners favored the kinds of secondary and higher education that directly met the "manpower requirements" of the modern sector. People who worked with their hands were thought not to have much need of formal education.

Over the past decade, views have changed substantially. Adequate provision of secondary and higher

This is an extract from the World Development Report, 1980 prepared by a team led by Paul Isenman and comprising Nicholas Hope, Timothy King, Peter Knight, Akbar Noman, Rupert Pennant-Rea and Adrian Wood of the World Bank.

education and training remains an important priority. But the value of general education at the primary level is now more widely recognized. We now consider some of the evidence that lies behind this change in views, and its implications for development strategy.

Recent progress. The major educational progress of the past two decades reflects heavy investment by developing countries. Their total public expenditure on education rose in real terms (in 1976 dollars) from about \$9 billion in 1960 (2.4 percent of their collective GNP) to \$38 billion in 1976 (4.0 percent of GNP). Costs per student vary widely by region--and by type of education (see Table 1). The potential for continued enrollment growth at different levels will, of course, be strongly affected by these costs.

Table 1

PUBLIC EXPENDITURES PER STUDENT ON ELEMENTARY
AND HIGHER EDUCATION, 1976
(U.S. Dollars)

<i>Region</i>	<i>Higher (post- secondary) education</i>	<i>Elementary education</i>	<i>Ratio of higher to elementary education</i>
Sub-Saharan Africa	3,819	38	100.5
South Asia	117	13	9.0
East Asia	471	54	8.7
Middle East and North Africa	3,106	181	17.2
Latin America and Caribbean	733	91	8.1
Industrialized	2,278	1,157	2.0
USSR and Eastern Europe	957	539	1.8

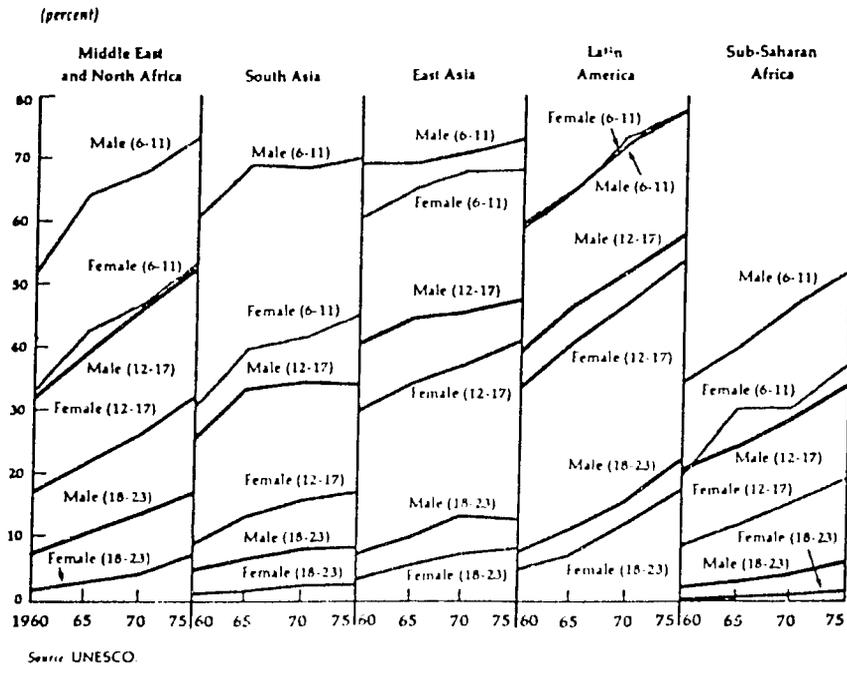
Note: Figures shown are averages (weighted by enrollment) of costs (in 1976 dollars) in the countries in each region for which data were available.

But school attendance in some parts of the world remains low, especially among the poor, in rural areas, and by girls (see Figure 1). This is not simply because schools are unavailable--not everyone who has an opportunity for education accepts it. Moreover, among those who do enroll in developing countries, an average of 40 percent drop out before the fourth year. In Brazil's poor rural Northeast region in 1974, despite an enrollment rate of 46 percent (less than half the national urban average), nearly two-thirds of the students dropped out before the second year--and it is estimated that at most 4 percent completed four years. And the completion statistics conceal the very low quality of some of the schooling provided.

Nonetheless, the very substantial growth in enrollment (Figure 1) is a sign of great educational advance. There are several mechanisms through which this has contributed to growth in incomes.

Figure 1

ENROLLMENT RATIOS, BY REGION, 1960-75



Effects of Education on Earning Power

Schooling imparts specific knowledge and develops general reasoning skills (its "cognitive" effects); it also induces changes in beliefs and values, and in attitudes toward work and society ("non-cognitive" effects). The relative importance of these is much debated, and poorly understood; both are extremely important.

In the cognitive area, developing a generalized capacity for thinking and learning has been found to be more important than the specific subjects learned. On-the-job training, informal education and vocational training all build on learning abilities acquired earlier. Although literacy and numeracy deteriorate if left unused, the educational experience still generally provides an improved foundation for subsequent learning.

Many of the noncognitive effects of schooling--receptivity to new ideas, competitiveness, and willingness to accept discipline--are directly relevant to productive economic activity. Others--tolerance, self-confidence, social and civic responsibility--are more personal or political in nature, but may also affect individual economic performance.

Some of the evidence on the effects of education rests on attempts to measure attitudes directly. Studies in several countries have shown that "modernity" of outlook toward activities ranging from voting to family planning, saving, and working is more influenced by the level of the individual's schooling than by any other factor. But there are also many studies of the direct effect of schooling on individual productivity and earnings, which are examined here under two heads--those relating to the self-employed and those relating to employees.

The self-employed. The hypotheses are straightforward: that primary education helps people to obtain and evaluate information about improved techniques and new opportunities, to keep records, and to estimate the returns of past activities and the risks of future ones. More generally, primary schooling is a training in how to learn, an experience in self-discipline and in working for longer-term goals.

Most of the empirical evidence comes from agriculture--studies comparing the productivity, yields and innovative activity of schooled and unschooled farmers. Not all these studies controlled adequately for other influences, particularly wealth; but many did (for example, by including farm size as a proxy for wealth).

The general weight of the evidence (see Table 2) lends strong and consistent support to these hypotheses--and is particularly compelling because the studies measure productivity directly, not through wages. Where the complementary inputs required for improved farming techniques were available, the annual output of a farmer who had completed four years of primary schooling was on average 13.2 percent more than one who had not been to school. As expected, where complementary inputs were not available, the increase in output resulting from additional schooling was on average smaller--but still substantial.

Whether these increases should be regarded as large or small depends on the cost of achieving them. It is thus significant that studies that went on to compare the increase in production resulting from education with the costs of that education (for example, in Korea, Malaysia and Thailand) found rates of return on primary education comparing very favorably with investment in other sectors. It is, of course, impossible to predict which areas will offer scope for improved farming techniques in 10 years' time, when children leave school. In some, effects on farm productivity may be low. But given past progress in agricultural research, it is probable that some places with stagnant technology now will offer greatly improved possibilities. Thus, on growth as well as equity grounds, it would be short-sighted to leave a large part of the next generation of farmers illiterate.

Table 2

FARMER EDUCATION AND FARMER PRODUCTIVITY

<i>Study</i>	<i>Estimated percentage increase in annual farm output due to four years of primary education rather than none</i>
<i>With complementary inputs^a</i>	
Brazil (Garibaldi), 1970	18.4
Brazil (Resende), 1969	4.0
Brazil (Taquari), 1970	22.1
Brazil (Vicosa), 1969	9.3
Colombia (Chinchina), 1969	-0.8
Colombia (Espinal), 1969	24.4
Kenya, 1971-72	6.9
Malaysia, 1973	20.4
Nepal (wheat), 1968-69	20.4
South Korea, 1973	9.1
Average (unweighted)	13.2
<i>Without complementary inputs</i>	
Brazil (Candelaria), 1970	10.8
Brazil (Conceicao de Castelo), 1969	-3.6
Brazil (Guarani), 1970	6.0
Brazil (Paracatu), 1969	-7.2
Colombia (Malaga), 1969	12.4
Colombia (Moniquira), 1969	12.5
Greece, 1963	25.9
Average (unweighted)	8.1
<i>No information on availability of complementary inputs</i>	
Average of eight studies (unweighted)	6.3

a. Improved seeds, irrigation, transport to markets and so on.

Employees. The second type of study relates the educational levels of individuals to their wages and salaries. If education affects the capacity to learn, innovate and adapt, its effects should be particularly important for employees doing nonroutine or changing tasks. For employees in modern enterprises, primary education also promotes disciplined work habits and responsiveness to further training, as well as offering the advantages of literacy and numeracy.

Studies of the rate of return to education for wage-earners deal mainly with relatively large urban enterprises; but a few have included small businesses and agricultural workers. All find that more schooling leads to higher earnings. And when the extra earnings resulting from primary education are weighed against its costs, high rates of return

are consistently found. Similar studies for secondary and higher education find lower, though nonetheless substantial, returns (see Table 3).

Table 3

RATES OF RETURN TO EDUCATION
(Percentages)

<i>Country group</i>	<i>Primary</i>	<i>Secondary</i>	<i>Higher</i>	<i>Number of countries</i>
All developing countries	24.2	15.4	12.3	30
Low income/adult literacy rate under 50 percent*	27.3	17.2	12.1	11
Middle income/adult literacy rate over 50 percent	22.2	14.3	12.4	19
Industrialized countries	..	10.0	9.1	14

Note: In all cases, the figures are "social" rates of return: the costs include forgone earnings (what the students could have earned had they not been in school) as well as both public and private outlays; the benefits are measured by income before tax. (The "private" returns to individuals exclude public costs and taxes, and are usually larger.) The studies refer to various years between 1957 and 1978, mainly in the latter half of the period.

a. In this sample of 30 developing countries, those countries with low incomes also had literacy rates below 50 percent (at the time the studies were done). All the middle-income countries had literacy rates above 50 percent.

Investment Priorities in Education

Primary education is of particular importance in overcoming absolute poverty. But secondary and higher education and training also have major roles to play. [*Note:* The original report also covers vocational and nonformal education which are omitted here.]

Primary education. In countries where it is far from universal, the case for increasing the proportion of children who complete primary education is strong. There have been high economic returns in the past. It has been suggested, however, that the rate of return to primary schooling (especially in certain jobs) may decline as the proportion of the labor force with primary education increases. But this may be offset by shifts in the pattern of production toward more skill-intensive goods. In Table 3 the rates of return to primary education in countries with adult literacy rates above 50 percent, while somewhat below those in countries with adult literacy below 50 percent, are still strikingly high. And in the few countries where studies have been done at different periods, rates of return have usually declined, but only mildly.

There are also favorable effects on equity. As primary education becomes more widespread, the additional spending will be increasingly concentrated on backward rural areas, girls, and the poorest urban boys. In general, primary education tends to be redistributive toward the poor (see Table 4). In contrast, public expenditure on secondary

and higher education tends to redistribute income from poor to rich, since children of poor parents have comparatively little opportunity to benefit from it.

Table 4

PUBLIC EDUCATION SPENDING PER HOUSEHOLD, BY INCOME GROUP
(U.S. Dollars)

<i>Income group^a</i>	<i>Malaysia, 1974^b</i>		<i>Colombia, 1974^c</i>	
	<i>Primary</i>	<i>Postsecondary</i>	<i>Primary</i>	<i>University</i>
Poorest 20 percent	135	4	48	1
Richest 20 percent	45	63	9	46

- a. Households ranked by income per person.
- b. Federal costs per household.
- c. Subsidies per household.

Primary education of girls has favorable effects on the next generation:

In health. Studies in Bangladesh, Kenya and Colombia show that children are less likely to die the more educated their mothers, even allowing for differences in family income.

In nutrition. Among households surveyed in Sao Paulo, Brazil, for any given income level families were better fed the higher the mother's education.

In fertility. Education delays marriage for women, partly by increasing their chances for paid employment; and educated women are more likely to know about, and use, contraceptives.

Finally, it enriches peoples' lives. Many would regard this as sufficient justification for universal primary education, independent of its other benefits.

Secondary and Higher Education

Renewed emphasis on the importance of primary education, and on its high returns relative to secondary and higher education, should not start the pendulum swinging too far in the other direction. High levels of knowledge are necessary for many people who serve the poor, both directly as teachers, health workers and agricultural extension workers, and indirectly as researchers, technicians, managers and administrators. While their skills must be developed to a considerable extent through practical experience and in other ways, there is for some purposes no better or cheaper substitute for the formal disciplines of conventional

schooling. Even allowing for doubts about the estimated rates of return to secondary and higher education, and for the existence of some educated unemployment, there are unquestionably severe shortages of skilled people in many developing countries.

More economical ways of producing skilled people need to be found however. Greater reliance on in-career and on-the-job training should be considered, and steps should be taken to reduce the high unit costs of secondary and higher education.

These steps can include reduction in the number of specializations that any one university offers, while there is greater planned differentiation in the specialties offered by universities in a nation, or group of nations. Correspondence courses are another means for decreasing higher educational expenditures. Studies in Kenya, Brazil, South Korea and the Dominican Republic indicate that such courses can effectively teach people in remote areas. Finally, because most post-primary students are from families in a higher than average income bracket, considerably more of the cost could be charged to parents who can pay the charges, while scholarship programs go to students who cannot afford to pay.

The present low cost of secondary and higher education makes it inevitable that in most countries demand for places will exceed supply for the foreseeable future, although some countries, such as South Korea, already have very high enrollment rates. But economic considerations are not the only relevant ones: secondary education often helps in lowering fertility and reducing child mortality (over and above the effects of primary education). All developed countries have found universal free secondary education to be desirable in its own right. The question for developing countries is less "whether" than "when." Higher education clearly also has scientific, cultural and intellectual objectives, as well as economic ones.

Implementing Education for the Poor

The education received by poor children depends on three things. The first is accessibility--are there school places for them within a reasonable distance from home? The second is use--do their parents send them to school, and are they allowed or encouraged to drop out? The third concerns the quality of the education that schools provide.

Accessibility. Financing constraints will often be compounded by difficulties in reaching the poor--distance, low-density populations and poor communications--so that building schools and supplying books, equipment and qualified teachers is a difficult and expensive task. For example, the Nepalese government estimates that it costs more than twice as much to build and equip a school in mountainous regions as it

does in the plains; and attracting qualified teachers to remote areas has proved to be extremely difficult.

There is often much that can be accomplished by administrative action with relatively little capital investment. Repetition of classes and early dropout may be the result of excessively high promotion standards. In these circumstances, the flow of students can be accelerated by more automatic promotion--while maintaining quality by correcting some of the causes of repetition or dropout. In many situations resources can be freed for extending education by raising student-teacher ratios, which are the main determinant of unit costs (given teacher salaries) and are largely determined by class size. Extensive research shows that class size has surprisingly little effect on learning. For example, reducing an elementary-school class from 40 pupils to 15 can be expected to improve average achievement (in a standard test) by only about 5 percentage points. While there may be practical limits to increasing classes much above 50, the research does suggest that, for classes initially below 50, little will be lost if they are increased. It is important to maximize the use of available facilities--by rotating classes, with staggered scheduling and double shifts in areas of high population density. If there are not enough pupils within an acceptable distance from school to fill individual classes, student-teacher ratios and the use of space can be significantly improved by taking new students only in alternate years (as has been done successfully in a project financed by the World Bank in Malaysia) and by teaching more than one grade in a class, as in another World Bank-financed project in El Salvador.

Use. Since most poor parents believe that education would benefit their children--in terms of status and the ability to stand up to officials and merchants, as well as in their incomes--they must have reasons for not sending their children to school where they have the chance. They may question whether they will benefit themselves; they may even regard the school as a threat to their parental authority or traditional way of life; or they may simply believe that social or ethnic barriers are too great, or the quality of the available schooling too low, to make education worth its costs. For poor families, the help of children at home--in animal care, fetching fuel and water, taking care of young children while adults work, and in agricultural work during busy seasons--may conflict with a fixed school schedule. For some families, malnutrition and poor health of children may lead to poor attendance, inattention while in school, repetition of grades and, eventually, dropping out. And there are particular reasons that girls receive less education than boys. Since the mere existence of a school does not automatically mean it is used by all those eligible to attend, special measures may be needed to ensure that the education offered is attractive to the families for whom it is intended.

Changes in school scheduling is one measure. A school calendar may compete unnecessarily with the crop cycle, with important exams held at times when students are most needed by their parents in the fields. Reducing expenditures to the families of poorer students is another measure. Providing free textbooks and uniforms, if required, will reduce the direct costs of school attendance. A further measure is providing information about education so beneficiaries know what to expect. Beyond information and persuasion, compulsory primary education is not uncommon. Using mandatory education laws is sometimes regarded as more unfairly coercive than, say, manipulating costs, since it allows no parental choice at all. However, others argue that compulsory schooling should be viewed more as protecting the rights of children than restricting those of the parents.

Quality of education. This is generally low in developing countries, and has been found (for example, in studies undertaken in Thailand, Malaysia and the Philippines) to be lower still for poor and rural pupils. Poor quality public schools may lead the well-to-do to choose private schools for their children, reinforcing social and economic inequality.

Casual observation and small-scale studies have long suggested that poor training of teachers, lack of textbooks, and inadequate school facilities lead to poor educational results and provide a weak basis for subsequent training. But broad-based evidence to demonstrate the extent of the resulting learning losses has only recently become available--from a large research project, the International Evaluation of Educational Achievement; only four developing countries (Chile, India, Iran and Thailand) were among the 19 countries covered.

While international comparisons of student achievement must be approached gingerly, particularly when different languages or testing styles can affect the results, a clear pattern nonetheless emerges from the study. Differences in average performance of students from the 15 developed countries varied somewhat from subject to subject and country to country; but the differences by and large were small. The developing countries, however, did far less well--in all subjects tested, and at each of the three age levels examined. A typical finding showed the mean score for students in a developing country to be in the bottom 5 to 10 percent of students from a developed country. Some of the handicaps of children in developing countries may be due to lower levels of parental education (which has a substantial impact, particularly in the preschool years) or in some cases to prolonged malnutrition. But the evidence suggests that they are mainly a reflection of low-quality schooling.

There are a number of promising approaches to improving educational quality in developing countries:

- The curriculum should take into account the linguistic and home backgrounds of students. Materials which are inappropriate only exacerbate tendencies to repeat classes or drop out, particularly for those from poor homes. Whenever possible, subjects should be illustrated with examples that draw on the child's experience.

- The selection and training of teachers should be improved through more training facilities, greater use of in-service training, and more teachers' guides, advisory services, mass-media programs and bulletins. This takes more resources as well as time, however.

- The design, production and distribution of learning materials should be upgraded. This applies particularly to textbooks, because research indicates that increasing their numbers and availability is the most consistently effective way of raising educational standards. A nationwide textbook project supported by the World Bank in the Philippines significantly increased student learning while increasing costs per student by only 1 percent. When school budgets are squeezed, it is all too easy to cut or defer spending on learning materials. But this is a costly alternative if costs are considered in terms of the education provided rather than simply the expenditures per student in school.

- Properly designed and supported radio projects have potential for improving learning (and in certain cases reducing costs). To take a well-documented example, in Nicaragua regular radio broadcasts achieved dramatic improvements in mathematics for primary students.

Research into these approaches has indicated important potential, but it remains to be seen how much they can improve quality within the constraints of politically feasible budgets. This underlines the importance of finding cheap ways to improve quality if the educational gaps between rich and poor are to be narrowed.

[Extracted from World Development Report 1980, pp. 46-53. New York: Oxford University Press for the World Bank, 1980. Copyright© The International Bank for Reconstruction and Development, Washington, D.C.]

Note: The World Development Report, 1980 is available without charge from the World Bank in Spanish; it may be purchased in French from: Editions Economica, 49, rue Hericart, 75015 Paris, France.

The Use of Broadcasting in Primary School Classrooms

Robert Hornik, Barbara Searle, Dennis Foote
and Jeanne Moulton

[The access to primary schooling in Third World countries is often hindered by too few schools and teachers, especially in remote areas, and the quality of education received may be limited. Broadcasting in the form of educational radio or television holds promise as a means of countering these obstacles to success in universal primary education.]

Universal primary schooling has become a goal of most developing countries, but in 1970 only about 35% of the school-age children in the world's poorest countries were in school. There are wide differences among developing nations in the proportion of children reached by the primary-school system, and wide differences in the quality of the education they receive, but there is sufficient commonality in the problems of primary school and the attempts being made to solve them to warrant discussion at a general level.

Access to Schooling

The problem of access has two important aspects: the availability of places in school for those who want to come; and the desire for schooling among those who are eligible and for whom there are places. At present, most developing countries cannot support a primary-school system that meets the demand, thus masking the second aspect.

School shortages are more severe in rural than urban areas, and it is difficult to staff even existing

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rural schools adequately. In most countries both the living and working conditions in rural areas are relatively backward and teachers are reluctant to work there. Even teachers who have come from the countryside have often been "spoiled" by their stay in urban areas for training. Further, both repetition by pupils of the same grade and dropping out during the school year result in inefficient use of school places, and therefore aggravate access problems. Dropping out during the school year contributes to underutilization of existing school facilities because places taken at the beginning of the year by students who later drop out are unavailable to others who might remain for the entire year. Students who repeat also occupy places that could be used by others. The repetition problem is likely to be most severe at two levels: the first grade, and the highest grade taught in the school. Repeaters in first grade occupy seats that could be used by new entrants. At the top grade are students who want more schooling but have no secondary school they can go to. Data from El Salvador, for example, suggest that about 50% of the repeaters in rural primary schools had passed the previous grade, and in order to stay in school after completing the highest grade must apparently return to the grade level they have already passed.

The traditional solutions to the access problem are to build more schools and train more teachers. But education budgets are limited, so an essential problem in increasing access is to find ways to expand opportunities for schooling without increasing budgets. One set of solutions would use school facilities and teacher time more efficiently. Running double shifts (of a reduced number of hours) in schools extends the availability of classrooms, and permits more students to be reached by a teacher in a given number of teaching hours. The El Salvador sector analysis by B. Robinson (1977) reports that "in both the rural and urban zones half-day students had overall about the same performance on national achievement exams as the whole day students," which seems a surprising finding but certainly supports the use of double sessions. However, double-shifting may not be a practical solution in sparsely populated areas where demand may not justify more than one class at a grade level. Using community buildings as schools (when not needed) also reduces the need for new buildings, but does not change the requirement for teachers.

Increasing class size economizes on both classrooms and teachers, but the rooms must be large enough to accommodate more students. It may also make the teachers' task more difficult, although evidence on the relation between class size and school outcome variables is equivocal. The cost for teachers (per student) can also be reduced by using monitors, aides, or community members who work under the supervision of a teacher, enabling the latter to be responsible for many more children than he or she could teach personally. With the exception of the last, all of these proposed solutions are more suitable for the expansion of an existing school to accommodate more students than for the provision of schooling opportunities in places where no such opportunities cur-

rently exist. All of these access-improvement strategies are likely to make the improvement of the quality of instruction more difficult.

Radio and television broadcasting have been used to attack the access problem in two ways--directly, through the provision of an alternative instructional mechanism; and indirectly, through the maintenance or improvement of quality when one or more of the institutional solutions (double-shifting, increasing class size, employing less well-trained teachers) is implemented. The Radioprimeria program in Mexico provides an example of direct use of mass media to extend primary schools to unserved audiences.

Radioprimeria functions in primary schools and aims to extend schooling within the school setting. The problem Mexico faces is typical: The Mexican Constitution of 1917 promises a primary education to everyone, but in 1973 only 6,500 of the 32,900 primary schools in the country had all six grades. The goal of Radioprimeria, begun in 1970, is to provide instruction at the upper primary grade levels in schools that lack teachers for these grades. The students were supervised, but not taught, by the teacher of another grade level. The hope was to provide adequate education without incurring the cost of an additional teacher. Studies done in the early stages of the Radioprimeria project found that the radio students competed successfully with students in conventional classrooms on achievement tests. P. Spain's study of Radioprimeria in 1977 identified many difficulties with its implementation. He visited radio schools and found fewer than half of them actually using the radio on the day of the visit. Reception was poor, the lessons were difficult to understand and were paced too fast, and some teachers did not think they were useful. Furthermore, many of the schools using radio had six grades and therefore did not qualify as target schools for the program. Spain concluded that while the low level of supervision--essentially none at all--was hindering the success of the program, children were nevertheless able to learn from it.

The Radioprimeria project has remained experimental and is confined to one small area of central Mexico; at present lessons are broadcast only for fifth graders. According to Spain, administrators recognize the need for adequate supervision, and since they lack funds for this function have not expanded the program. Some other difficulties have been corrected. A stronger transmitter allows better reception. Radio programs have been revised so that students participate more in the lessons, and the material is less abstract. However, the Radioprimeria experience indicates that technical difficulties such as maintaining the radios in working condition and lack of supervision may cause the failure of an otherwise promising program.

The radio schools of Australia, which have been in operation since 1933, provide another example of using radio to extend primary schooling. The program uses two-way radio to provide contact between the instructor and children whose homes are in remote areas of the country. The school

lessons are based primarily on correspondence instruction; the radio is used to decrease the sense of isolation of the children and to provide motivation for studying. Although highly successful, this program may not be easily replicable: the two-way network was in place in Australia for other purposes, and its use by students did not represent a large add-on cost. To create such a network for the sole use of schools would take a large and rarely feasible investment.

Quality of Schooling

On the average, schooling in developing countries is of poorer quality than schooling in the developed countries. This contention is supported by the results of the massive International Evaluation of Educational Achievement (IEA) study designed to make cross-national comparisons of achievement in standard school subjects. Our intention here is not to defend the IEA study. One could argue, for example, that the examinations given for the study were inappropriate for developing countries; however, the IEA conclusions are not likely to be disputed by those with experience in the developing world. Low achievement levels are recognized, but we know rather little about the causes. We can, however, propose some explanatory hypotheses.

The quality problem can be examined along three dimensions: what the children bring to school, what the teacher brings to school, and the nature of the classroom itself. The importance of home background as a determinant of success in school has been well established for developed countries and, although not as thoroughly documented, in developing countries (LDCs) as well. Typical LDC children lack many of the cultural supports, such as books in the home, that have been associated with school success in the developed world. Although students may well enjoy a rich cultural life, the character of that culture may not support school achievement. The need for children's labor in the home (as harvester, or as babysitter) may also interfere with successful schooling.

Poor health and malnutrition may also be significant factors in limiting school achievement. For example, children in Uganda who appear to have suffered from malnutrition as infants performed significantly below all others on the Raven's Progressive Matrices test of spatial and perceptual abilities, and scored a full standard deviation below the mean in academic achievement. Those reporting they had hookworm also performed significantly worse. This evidence supports the hypothesis that an average child in an LDC comes to school less able to benefit from schooling than his counterpart in a developed country.

The teacher, when certified, has probably had about 12 years of schooling, four of it at a normal school. Almost invariably normal-school programs focus on subject matter and theory, and provide little practice. The instruction in subject matter may be given at the typical secondary level, so that primary-school teachers know little more about the subjects they teach than is contained in the primary-school curriculum. Thus, typical teachers are likely to be poorly trained and inade-

quately educated, although we have found that many who are highly motivated and dedicated function far more effectively than one might expect.

By developed-country standards, the physical classrooms tend to be inferior, and the material support--textbooks, paper, learning aids--is often minimal. Furthermore, classrooms often do not have places to lock things up, so that it is very difficult to accumulate materials of any value. Other factors may also play significant roles in shaping the learning environment of the classroom, factors such as: the teacher's expectations of the children, the impact of students' expectations on their motivation for learning, tracking (as in the establishment of ability groups), differences in age and in language background, and instability in the student population due to poor attendance, dropouts, or transfers. These factors have been little investigated in developing countries.

One intervention for improving the child's ability to learn is the school feeding program, which has been supported by substantial portions of the food from the U.S. PL-480 operation. Another is the provision of health care in the schools. Either of these strategies might be expected to increase both attendance and achievement; but to date there is little clear evidence on the educational effects of these strategies.

An approach to the problem of increasing "school readiness" is found in pre-school television programs. These programs are designed to be viewed by children in their homes, or in neighborhood centers. These efforts blossomed for a while in the wake of "Sesame Street." In Brazil ("Via Sesamo"), in Mexico ("Plaza Sesamo"), and elsewhere, licensed copies of "Sesame Street" were produced and broadcast on commercial networks. In Peru, the Ministry of Education produced its own readiness program, called "Chiquillines"; in Venezuela, pre-school broadcasting has continued for some time. Recent evaluations from Mexico have been skeptical of "Plaza Sesamo's" effectiveness; and of course, since television is involved, the potential audience is sharply reduced. We know of no radio pre-school programs, although the success of the Nicaragua Radio Mathematics Project in reaching first graders suggests some optimism that such a program could be developed. So we have little evidence that such an effort would lead to better performance in school, and in any case it is likely that only a small audience could be reached.

The main strategies now used to improve teacher quality are pre-service and in-service training. Most countries have upgraded the pre-service training of teachers, not only providing schooling to larger numbers of prospective teachers but raising the grade level at which training is provided. More superior normal schools are requiring a high school diploma for entrance. Because pre-service training is a long, expensive process, and only affects new teachers, efforts are being made almost everywhere to provide in-service training. This takes the form either of short workshops, or long-term training usually given while the teacher continues teaching with occasional released time. There is evidence, much of it anecdotal, that short-term in-service training does not produce lasting changes in teacher behavior. A general problem with such

in-service training, whether it be a series of weekend workshops or two months in the summer, is that it sends the retrained teachers back to work in the same classroom with an unchanged learning environment. Facing the frustration inherent in the trial-and-error applications of new methods that will precede their mastery, teachers will find it easy to slip back into customary practices.

Improving teacher ability has been another target of broadcasting projects. The Kenya teacher-education project was basically a correspondence course designed to prepare teachers to pass certification examinations. The program used radio lessons to supplement the printed material and to help teachers pace their work. India, in a project related to the Satellite Instructional Television Experiment (SITE), produced radio and television programs to be used as part of multi-media teacher-training workshops for science education. In perhaps the most ambitious project yet planned, Nepal will establish a year-long in-service teacher-training program using daily radio broadcasts, complementary printed materials, and summer workshops. USAID is providing much of the technical assistance for that project. Most of these programs rest on the assumption that retraining alone, without other reforms, is an effective strategy for improving quality. Our skepticism about that assumption leads us to a discussion of the third aspect of quality improvement, improving what happens in the classroom.

S. P. Heyneman (1978) cites several studies which showed a positive relationship between textbook use and student achievement. Few studies have compared the cost-effectiveness of texts with alternative interventions, however. Also, lack of an adequate distribution system, and the common practice of charging students for texts, are severe obstacles to the use of texts in many situations. There seems to be little argument for using more elaborate instructional materials, such as audiovisual aids, in situations where there are not sufficient textbooks, paper, pencils, rulers, and supplementary reading books. The cost of such materials is likely to be prohibitive, although materials obtained locally (stones for counting and such) may be useful and inexpensive.

There are two somewhat different ways that broadcasting is used in classrooms to improve the quality of instruction: to provide enrichment, or to give direct instruction. Almost all use of radio or television in the developed world is of the first kind. The second use has found favor in the developing countries. Examples include the early Colombia ITV project; the Ivory Coast ITV project; the Thailand project and the El Salvador ITV project.

El Salvador used television as the wedge for a comprehensive reform of its school system. While television is now used to some extent in the first six grades as well as seventh through ninth grades, most of the information available (and the comments here) come from the first

years of ITV when only the latter three grades were included. In 1969 the public seventh through ninth grades were serving only a small part of the existing demand; fewer than 35% of students in sixth grade in 1968 continued into seventh grade the following year. The curriculum included a large number of subjects, and retained the flavor of its colonial origins. Instructional quality, by all accounts, was poor.

As a major component of an extensive curriculum reform, television was introduced to carry the core of the curriculum. Every week from two to four 20-minute programs were broadcast in each of five subjects. Each lesson was designed to be preceded by 10 minutes of motivation and followed by 20 minutes of reinforcement activities conducted by the classroom teacher. To enhance the utilization of the telelessons, production teams prepared printed teacher's guides and student workbooks. By 1976 there were upwards of 90,000 students in public seventh through ninth grades compared to about 22,000 in 1966.

Students who studied with ITV and the other elements of the Educational Reform over three years gained 15-25% more points (above their scores three years earlier) on general ability examinations than did their peers who studied under the traditional system, and those who had studied with all elements of the Educational Reform except ITV. Overall, ITV students also performed better on achievement tests in Mathematics, Social Studies, and Natural Science, and particularly so in seventh grade. Reading capabilities of both ITV and non-ITV students advanced at about the same rate.

The introduction of ITV and the Reform was accompanied by an increase in the number of students per class, and an increase in teacher hours with a less than proportional increase in teacher pay. This effectively lowered the cost per student of the classroom teacher. Thus although ITV was an add-on cost, when enough students were enrolled the total per-student cost of classroom teaching plus television was actually lower than the cost would have been within the traditional system. In a year in which 60,000 students were using ITV, the per-student cost of ITV plus the classroom teacher was \$47. This was lower than the \$52 it would have been if ITV had not been used, class size not increased, and teacher load not changed. Thus, with a four-fold increase in access as well as an improvement in quality, the per-student costs declined.

Another successful experimental example is the Nicaragua Radio Mathematics project, sponsored as a research project by USAID to assess the feasibility of teaching primary-school mathematics by radio in a rural area of a developing country. The project has been working in Nicaragua since mid-1974, producing one grade level of instructional material each calendar year. During 1978, lessons were being broadcast to grades 1 through 4 in selected regions of the country. Project lessons occupy approximately one hour a day, with half the lesson taught

by radio, the remainder by the classroom teacher following a guide prepared by the project staff. In multi-graded classrooms, lessons are used by students at one grade level while the teacher works with students at another grade level (in the same classroom). Radio lessons are characterized by a high rate of student responses; children give answers orally or in writing on the average four or five times a minute. The program also uses physical activities and music to provide breaks between segments of instructional dialogue.

Radio Math uses a carefully structured instructional dialogue, based on an elaborate curriculum design that builds skills sequentially, but uses the radio rather than the classroom teacher to conduct the dialogue. This permits the teacher-training requirements of Radio Math to be very low. This type of project shifts some of the burden of instruction from the teacher; the media, used well, can mean important improvements in school quality. But more often than not that has not occurred, and major failures have been recorded. Although radio reception is relatively inexpensive, preparation of effective instructional programs is not. And ultimately, the success of an instructional program depends on the design of the curriculum and the way the students interact with it.

Considerations in the Use of Broadcasting in the Primary School Classroom

The usual image of TV watching or radio listening, reinforced by our own experiences with commercial broadcasting, is one of passivity. Children sit glued to the set--taking in what is delivered without active involvement. Educational radio and TV have more often than not been used in this fashion. However, as we have seen in the Radio Math project, this need not be a characteristic of media use. It is not only possible but desirable to design broadcast lessons that are highly interactive. And even a small amount of participation may represent a worthy advance over the current standard; in many areas the traditional teacher in a rural classroom neither encourages nor permits active student participation.

Broadcast media deliver a standard message to all members of an audience, and media use is cost-effective only when this audience is large. For instructional programs, this means that both content and pace have to be standardized. We do not consider standardization of the curriculum a drawback. Typically, educational systems are able to agree on the appropriate content for the core primary-school subjects; the difficulty in most systems (even in the United States) comes in assuring that this material actually gets taught in the classroom.

This difficulty is particularly acute in developing countries for several reasons. First, a proportion (in some cases, a large

proportion) of the teachers are undertrained in both content and methods. Second, most countries have in the past decade instituted curriculum reforms but have been unable to support these reforms with adequate in-service training. One important outcome of the El Salvador TV project was to create the occasion for massive retraining, but such an effort may be completely impractical in countries that are larger and/or more geographically diverse. Thus, only recently trained teachers can possibly be equipped to teach new curricula--and they might not be. "Standardization," as effected by broadcast lessons, may actually mean that the quality of instruction will, on the average, be raised, as with Radio Math, even though individual differences and local conditions are ignored.

Teaching everyone at the same pace is a good deal more problematic and, if a defense is to be mounted, it must be on practical and not on pedagogic grounds. We think that the gains that accrue from assuring that the specified curriculum is actually taught and that effective teaching methods are used, advantages conferred by using broadcast media, outweigh the losses from not attending to individual differences. The major argument in support of this position is that very little is known about how to individualize teaching effectively. Despite large expenditures for experimental programs in the United States, there is little evidence so far that individualized instruction programs raise achievement scores. It is also possible for well-meaning attempts at individualization to backfire. Tilson found in rural primary classrooms of Nicaragua that teachers who grouped students by ability spent up to 40% more time with the high-ability group than with the low-ability group. In this situation, "individualization" worked against equity. Interestingly, the use of radio lessons reversed this finding; for both the radio-taught and the teacher-taught portion of the mathematics lesson the teachers spent more time with the low- than with the high-ability group.

The major constraints to using broadcast media for classroom teaching are: the resources required, the need for cooperation of teachers, the required support materials, the suitability of subjects being taught, and language standardization. At first glance, the media may appear as cheap solutions to the difficult problem of reaching large numbers of widespread classrooms. On the contrary, the successful use of broadcasting as teaching tools requires a significant financial investment in software as well as hardware, as well as capable personnel in all parts of the system, and a supporting infrastructure within the Ministry of Education and the other government offices and private enterprises needed to maintain media programs.

The research and development effort for new curricula is an important cost item that has too often been undervalued. Curriculum development is a sophisticated skill requiring knowledge and experi-

ence in instructional design as well as understanding of audience (learner) characteristics. And because an important feature of broadcast media in the classroom is their capacity to overcome the limitations of the teaching skill of various individuals, curricula must be designed in order to minimize the dependence on classroom teachers. It is expensive to train curriculum-design specialists, and in order to justify this investment an infrastructure must be provided that guarantees newly trained specialists the opportunity to continue using their skills.

Resources must also be spent on the installation and maintenance of hardware, and the continuous monitoring of the effects of the broadcasting program. Since this entails feedback from the remote locations receiving broadcasts, such monitoring usually has a substantial cost attached to it. In every classroom where broadcast lessons are intended for use, the teacher must tune into the broadcast. This sounds simple enough, but experience has shown that when radio or television receivers break down, teachers sometimes fail to have them repaired; that at the hour of the broadcast, teachers may either forget or choose not to tune in; that poor reception discourages teachers from continuing a lesson or series of lessons; that for various reasons parents or headmasters can pressure individual teachers to ignore broadcast lessons; and that sometimes teachers themselves resist using the media. Any of these circumstances will prevent the best designed lessons from reaching the classroom.

In many cases, broadcast programs are accompanied by printed materials--exercises, supplementary texts, exams, etc. This has been especially true in programs designed originally as correspondence courses. Like the broadcasts themselves, these materials must be skillfully designed. Equally important, they must be distributed as scheduled to every classroom using the broadcast lessons. In geographic regions where the media are being used as a means of overcoming problems of remoteness, difficulties in delivering supporting materials on a regular basis could detract critically from the effectiveness of the lessons. If it is possible to eliminate such materials, or otherwise minimize their cost and the complexity of their distribution, much will be gained in terms of the feasibility of media-based projects.

Furthermore, the subjects that can be taught over radio and television are limited, both by the kinds of equipment required to learn the skills being taught and by the amount and nature of student participation to which the subject lends itself. In regard to equipment, it is clearly difficult to teach woodworking over the radio if students do not have wood and tools. And other mechanical skills--often those very useful to youth in remote rural areas--require materials and tools for effective instruction. In regard to student participation, it is

perhaps less obvious but nonetheless true that the learning process entails active participation by students. The success of the Nicaragua Radio Math Project can be attributed in part to the active participation of students in the lessons. Whereas mathematics and language are subjects that can call on frequent and varied responses from students, others such as history and civics are more abstract and less amenable to closely structured student participation. Yet it seems that without this kind of participation, broadcast lessons may have less advantage over traditional instructional methods.

Lessons must be broadcast in a language understood by the students. This constraint can limit the range of classrooms able to use media-based lessons emanating from a single source. Often the official language of a nation--Spanish, French, English, Arabic, etc.--is not actually used in remote regions, so that students cannot understand a broadcast well enough to learn from it. Broadcasts may be translated into local languages, but there must be a critical minimum of classrooms with students speaking a language to justify the cost of producing and transmitting such programs. Finally, even if students are familiar with a language in a linguistic sense, the content of the discourse may be too strange to them to have meaning. Descriptions and illustrations that fall outside of the students' realm of experience can cripple their ability to comprehend the message.

In summary, mass media has a potentially powerful role in extending primary education. There are many pitfalls to avoid, problems to solve and modifications to make if the results are to be as good as they can be, and it is necessary to be aware of all the indirect costs that will be incurred. But the goal of a more widely educated population makes the attempts to overcome these obstacles well worthwhile.

[Extracted from The Role of Communications in Education, pp. 32-71, a report of the Institute for Communication Research, Stanford University, for the U.S. Agency for International Development, December 1978.]

Note: The Nicaraguan Radio Mathematics Project has been suspended since this report was published due to the Nicaraguan civil war. The future of the program is still awaiting decisions by the new administration.

A Rural Alternative to Primary Schools in Upper Volta

Institut d'Etude du Developpement Economique et Social (IEDES)

[This article describes the experience of a poor African country in establishing low-cost rural-oriented schools for teenagers as an alternative to conventional primary schools for children. The results are inconclusive; the program's low costs and lack of access to higher schooling have made it appear discriminatory.]

Upper Volta is one of the poorest countries of the world by whatever measure is applied. Almost 95 percent of the population are engaged in agriculture, most of them in smallholder subsistence farming on lands of communal ownership. Employment opportunities outside agriculture are few, mostly in government services. The formal school system, modeled on the French pattern, is embryonic and spread thinly, though enrollments have been increasing. Primary schooling is available to only 1 in 10 of the age group concerned. There is a heavy urban bias: in towns about 65 percent of the children between 6 and 12 years attend primary school, in rural areas less than 8 percent. Only half of those who begin school are likely to complete the six-year primary cycle.

The educational dilemma facing newly independent Upper Volta in 1960 was seen to be acute. By the time of the 1961 UNESCO Conference which established the regional goal of universal primary education, it was clear to Voltaique authorities that such a goal was not a feasible option in the foreseeable future. In 1961 the government attempted to face up to the

The Institut d'Etude du Developpement Economique et Social of the University of Paris, France, was commissioned to make a study for the International Council for Educational Development (ICED), with headquarters in Essex, Connecticut.

realities and decided to experiment with an alternative approach, embodied in a law that gave birth to the Rural Education Centers.

Rural Education Centers

Origin and purpose. The initiative for launching an experimental scheme of rural education as a basic form of primary education combined with vocational training grew out of discussions in the late 1950s among educational planners in the Ministry of Education, when Upper Volta was still a French colony. The first plan was formulated by Medard and Christol, two Frenchmen working in the Ministry, and approved by the Legislative Assembly in 1959. The "Plan Christol" suggested that, given the low level of economic development of the country, it would be impossible to allocate the funds necessary to provide universal primary schooling for all children and adolescents in Upper Volta for many years. Although more than 500,000 children were of primary school age, the capacity of the school system was only 50,000 pupils at that time, and only a handful of those who entered the first year of primary school could expect to reach secondary and higher levels of education.

The Plan Christol advocated a sharp deviation from previous policies: universal primary schooling should no longer be the first objective to be pursued. Instead, the primary schools should be given the role of providing basic training and education for the few who would be most likely to enter secondary schools and ultimately to form the nation's elite. For the masses of the rural population an education focusing on rural life should be provided, with three years of agricultural vocational training combined with instruction in basic literacy in French and numeracy sufficient for effective work in agriculture and for a literate adult life. This broad, vocationally-oriented education should be geared primarily to the learning needs and capacity of the average youth. The plan proposed that for some time the intake of children in rural areas should normally be once every three years at age 14 or 15 (no longer at age 6) and the school leaving age should be 16 or 17.

A great number of advantages were envisaged. Since the higher age-group for the rural education program is smaller than that of the normal primary school age-group (child mortality is high), it would cost less to provide teaching and facilities for older children than for all children. Older children could be expected to be better motivated, better disciplined, and better able to learn than children at age six. More material could be taught in a shorter period of time than would be needed in a conventional primary school. While learning to work, the students would also be producing. More important still, by using modern methods in the fields, those in the rural education center would set an example for others. Thus rural education would have an immediate impact on the production of the whole village.

The principal aims and assumptions of the project may be summarized:

1. to provide opportunities for all rural youth to receive at least a minimum of literacy and numeracy by attending a full-time school during adolescence;
2. to inject an element of modernization into the villages by training all young people in the basic principles and methods of modern agriculture;
3. to lower the total cost of education for the masses by combining education with practical farm work, and by shortening the total period of education during the first decades of expansion of the educational system;
4. to reduce wastage in education by concentrating the teaching on a more receptive and better motivated age-group than that normally taken into the primary schools.

The Plan Christol envisaged that the expansion of primary education, which had been slow but steady during the 1950s, would be slowed down. Most of the funds anticipated for further development of the total school system could, therefore, be used to expand the rural education system. It was estimated that by 1970 approximately 76 percent of all boys and 24 percent of the girls would have an opportunity to go through a course of rural education. After 1970 the rural education system would be gradually expanded to take in both boys and girls outside the formal school system until, ultimately (before 1985, it was hoped), the whole youth population could be given some kind of elementary education. Only then would further expansion of primary education be permitted, mainly by an extension of the rural education system to lower age-groups.

Implementation of the scheme began in 1961 when the first group of teacher candidates was recruited and trained in a short course of five months. The first centers were constructed in 180 villages, and 8,100 students were selected to participate. Most of these centers were built with local materials, using the same techniques as those employed in building rural homes in the country.

Expansion of the program was rapid after the first years of experimentation and search for a methodology. By the end of the 1970/71 school year, 759 centers were in operation; of these, 680 centers were for boys and 79 centers for girls. They had a total of 21,598 students recorded in attendance at the end of the school year. Students in rural education represented about one-fifth of the total school population in Upper Volta. Between 1965/66 and 1969/70, REC enrollments rose from 21,000 to 26,000, and then dropped by about 20 percent in 1970/71. At the same time, enrollments in primary schools rose from 93,000 to

102,000. However, compared with the primary school, the RECs had lower dropout rates and fewer students per teacher and there were no problems of repeating since individual repeating was barred in the REC. Although completion rates were relatively high, they tended to worsen: in the period 1966-70, for every 1,000 starters, 878 completed the course; during the overall period 1966-72, for every 1,000 starters, 760 completed full courses.

Table 1

ENROLLMENTS

	RURAL EDUCATION CENTERS	PRIMARY SCHOOLS
1959	0	50,000
1966	21,000	93,000
1968	26,000	---
1971	21,598	102,000

The expansion of the REC system fell far short of the original goals. By 1972/73, there was a drop in the number of RECs to 737, although enrollment increased to 24,000 youths (84 of these centers enrolled 2,500 girls), which is no more than one-sixth of what had been projected. Meanwhile, regular primary schools continued to expand steadily and, in fact, to get the lion's share of the education budget.

Assistance was sought for the program from the European Economic Community-sponsored European Development Fund (FED), which agreed, in 1961, to finance 225 centers to be established for 11,250 boys. Smaller contributions were received from UNICEF--mainly tools and equipment; from the Food and Agriculture Organization (FAO)--seeds, fertilizers, and gardening tools; from French bilateral aid--books and documents mainly for language teaching, and resources for printing basic agricultural education manuals used in the schools; and from bilateral and private American sources--various teaching aids and some food to help feed students during the months before the harvest.

Personnel. Teaching staff is trained in three centers, two for boys and one for girls. Candidates for teacher training should be at least 18 years old and have an education corresponding to at least ten years of primary and secondary school. The educational level of the candidates has risen over the years. There are no special requirements relating to practical experience. Teacher training takes 10 months and covers a wide range of subjects including:

General education

French

Arithmetic

History and civics

Physical education

Agriculture

General agriculture

Applied agriculture

Breeding

Rural infrastructure

Water and forests

Agricultural fieldwork

Workshop (use of hand tools and simple construction)

Preservice training is supposed to equip the teacher for his multiple duties in the village, where supervision with only one counselor for each 100 centers is inadequate, to say the least. The lone teacher in the village REC is expected to supervise and carry out instruction, manage a profitable school farm, account for the produce, organize school cooperatives, act as local *animateur*, form a liaison with the village leaders--both to gain their assistance in running and maintaining the school and its equipment and to reciprocate by providing services to the village. In return for this variety of heavy duties he would be paid only half the salary of his counterpart in the primary school, have a more limited security of job tenure, and almost certainly have inferior housing. These conditions have made it difficult to recruit and hold good quality staff, and the poor morale in the REC structure and teaching services has led at its worst to fraud and absenteeism, and at its best to an unending uphill struggle for the rural teacher whose enthusiasm is difficult to sustain.

Activities. The curriculum of agricultural work follows the seasons--beginning with the turning of the soil when the rains come in June or July and finishing with the harvest in October or November. If the center has a sufficient water supply for irrigation, the teacher can prolong agricultural instruction in the school garden, but not all centers offer such possibilities. Practical work during the dry season is devoted mostly to crafts, using elementary tools and local materials, or whatever the teacher and the students can find in and around a poor village in a country where wood is scarce.

Classroom lessons during a major part of the first two years are devoted to the teaching of basic French. The target in the first year is to teach the students at least 600 words, with an equal number of words added in the second year for the basic needs of conversation. The methods and the textbooks are, in most cases, the same as those used in the primary schools. Two factors make this first period of teaching extremely difficult: the absence of French in the environ-

ment--few villagers know any French--and the fact that the students and teachers sometimes speak different indigenous languages. The young people often study the texts without really understanding their meaning. It usually takes a long time before French becomes an effective medium of instruction in the schools. Because of this factor, the teaching of agricultural science, civics, and related instruction is often put off until the third year, a postponement that greatly diminishes the effectiveness of the educational program.

In principle no male student should be less than 15 years old and the median age should be 17. In fact, the median age is lower, with some students as young as 11 years. The age level of students has proved to be an important determinant of the efficiency of rural education. In general it has been found that the younger students are less well motivated and have greater difficulties in outdoor activities than the older ones. On the other hand absenteeism is higher among the older students, particularly during the planting, weeding, and harvesting seasons.

REC Performance. The IEDES study team attempted to assess the performance of RECs by conducting field investigation in two of the 11 districts--Yatenga and Koudougou. The team gave written performance tests or interviewed 256 final year REC students, 114 former REC students, and 81 former students of primary schools in the two districts. The team also interviewed village chiefs, heads of family holdings, village notables, parents of REC students, REC teachers, REC counselors, and rural development organizers about various aspects of REC operations.

The test results indicate that about half of the third year students in the selected RECs had acquired the basic mechanisms of reading, writing, and computation at an elementary level, and presumably this limited knowledge could be applied outside the school context in solving practical problems of life. However, practical application depended largely on whether students would have the opportunity to build on the foundations laid in REC and to improve further their level of facility in the basic skills. According to the test results, the majority of the rest did not learn to read and write or to do basic calculation. Some who acquired rudiments of basic skills probably did not learn enough to make use of these skills functionally outside the school context.

The results of the agriculture test were no more promising than the French and computation test scores, even though supplementary explanation in Moré, the local language, was added to the original questionnaire in French. The average score in agriculture for the whole group was 17 out of a maximum possible score of 40. Incidentally, the teachers of nine RECs in the sample were invited to answer the agriculture questionnaire, and some of these responses (for some questions, eight responses out of nine) were found to be incorrect.

The literacy test was given to 42 former REC students and the computation test was given to 21 former students. The scores collected from such a small sampling do not permit valid conclusions; however, the test data supplemented by impressions from interviews suggest that of the REC students who acquire the basic reading, writing and computation skills, some do not retain these skills and make use of them in practical life. In Yatenga, where organized follow-up activities in the form of post-school groups have been an important factor in the retention, use, and further improvement of the basic skills of those who originally acquired them in REC, scores were higher than in Koudougou. By way of comparison, 34 former students of primary schools aged 17 years or more were given the literacy and computation tests. The test results, again based on a very limited sampling, suggested that the former primary students as a group were ahead of the REC students in both literacy and computation skills. However, the former primary students were a self-selected group, taking the test voluntarily; a more representative sample might well have produced less favorable results.

The results obtained in agricultural production have been studied on three occasions by the counselors of the rural education system. The span between the low and high productivity in the centers was very wide. The 25 centers producing least had an average income in 1969/70 of only CFAF 3,529 (US\$14) while the 25 highest-producing centers earned an average of CFAF 84,000 (US\$340). While the scope of cultivation, that is, the number of different crops grown at each center, might be considered satisfactory, the methods used in many centers were not. Only one out of every three centers in 1969/70 put fertilizer into their groundnut fields, a recommended practice. The cotton fields received fertilizer in 182 centers out of 319; and 187 centers made one or more sprayings during the growing season where three to four sprayings are recommended by the extension service. The main reason for not following the advice appears to be the uncertainty of rainfall (which may turn the investment into an expensive loss), lack of the necessary implements, and shortage of operating funds. Thus, many centers do not give their pupils adequate training in the application of modern agricultural methods, and less than 50 percent of the centers reporting yields are able to show higher production figures per hectare for various crops than the average farmer can obtain in his own fields.

As for the attitudes of the graduates of the RECs compared with those of early dropouts and failures of the formal schools, the IEDES study concluded that REC graduates were better emotionally equipped to face challenges in their home environment, while the formal school dropouts felt isolate and guilty of failure and thought only of fleeing the village. The rural education student, on leaving the center, had no such discouragement, particularly if there was a post-school group in existence. This probably is more a function of different expectations of parents and students in respect to primary schools and

RECs than of the performance of these institutions. The primary school is seen as the means of escape from the village; when this does not materialize, students feel frustration. The REC aims at preparing its students for a livelihood in the rural milieu.

Costs. The rural education system was deliberately designed as a low-cost operation. At practically every point in the buildup of the system, efforts were made to cut the costs to the lowest possible figure and to make classes as large as possible. As a consequence the per capita annual current cost of rural education is no more than 40 or 45 percent of that of general primary education. The investment costs for the government in the average self-help school building, excluding the contributions in kind from the local population, amounted to less than US\$1,000 for each center, and for the most part were in the form of tools and equipment for work in the fields and for wood- and metal-work activities. Centers built with FED aid were more costly.

The major current cost of the centers is the salary of the teacher. Little money, if any, is spent on repair and maintenance of equipment. Only a few centers have draft animals, and those that have them normally do not have any direct cost for feeding them; they graze with other animals of the village. Little is known about the opportunity cost of students in the rural education centers, of the sacrifices made by parents in letting their adolescent children go to school for 35 hours a week for some 40 weeks a year for three years. There is reason to believe that families find this opportunity cost rather high.

Issues in Rural Education

Question of objectives. The program began as an experiment in providing elementary education and teaching practical agricultural skills to the 90 percent of youths who had no chance of going to the primary school. The original intention was that the expansion of the traditional primary school would be halted; ultimately the two kinds of institution would merge into a unified national system of basic education for all children--with both institutions enjoying "parity of esteem."

What really happened was, of course, very different from intention. The number of new RECs remained well below the number planned and became almost frozen after 1968, while primary schools continued to be expanded in the cities and towns at a steady pace. The primary school remained a highly selective institution, ruthlessly pruning the number of participants, granting a small proportion the privilege of completing the six-year course and opening up for them the opportunities and the rewards of white-collar occupations. A student in the REC, on the other hand, irrespective of his talents and ambitions, had

little chance of transferring to the formal system and claiming a stake in the perquisites associated with it. Moreover, the proclaimed objectives of the REC, in most cases, were not fully achieved. Parents of rural youths and the youths themselves, of course, clearly saw what was happening and regarded the REC, at best, as a temporary expedient that should be replaced by the real thing, the primary school, and at worst, a symbol of discrimination against the rural people. In fact, as the IEDES investigation has revealed, parents continued to hope that the REC would be converted to a regular primary school and tried to send primary school age children to the REC. But when after a three-year cycle the REC was not converted into a primary school, the villagers' hopes were shattered and new REC recruitment efforts faced increasing resistance from the villagers.

The ambivalent attitude of the government towards the objectives to be served by the program and the lack of comprehension of its aims by its clientele--or their shrewd reading of government ambivalence--obviously do not augur well for the program. It is doubtful that the program can be effectively expanded and that meaningful results can be achieved from it unless the stigma of blatant discrimination is removed from it, and ways are found to restore its original purpose.

Links with other rural activities. A rural education program, especially one of a practical nature and designed to bring about improvement in rural living conditions, cannot be viewed in isolation from the overall rural development effort. The Upper Volta farmers, burdened with poor farm land, entirely dependent on the vagaries of the weather for their next harvest, and always concerned about producing enough food for survival before taking chances with untried methods, need far more than just knowledge of new agricultural techniques. In a situation where the animal-drawn plow is virtually an agricultural revolution, not because the farmer does not know its value but because he cannot afford the price of the plow and the animal, villagers can be justifiably skeptical about a program to teach better farming practices unless the program is linked to an overall attack on the obstacles to poor farming.

IEDES interviews with villagers revealed that they associate various development services and institutions (such as health clinics, transportation facilities, stores for agricultural supplies, and market centers), not with the REC, but with the primary school. It may not have been planned that way, but the location of the primary school coincides with the location of these services. At least some villagers believe that once a primary school is opened, the other institutions will follow, whereas the REC can apparently offer no such prospect. This belief may be unfounded, but it reflects a perception of the REC role in rural development.

Support and commitment. Establishing a role for a new rural education program and making it a key element in a national endeavor to provide basic learning opportunities to all call for a national commitment by political leaders, the administrative personnel, and the general public. It may safely be said that the REC does not enjoy the unequivocal support of the government. The program still remains officially labeled "experimental" even after more than ten years of existence.

A comparison of the primary school and the REC in respect of the teachers' remuneration, physical facilities, and provisions for equipment and supplies immediately tells where the government priority lies. It is true that the RECs were intended to be community-supported institutions, and one reason for their existence is that they are low-cost alternatives to the primary school. But a comparable cost-saving effort has not been applied to the primary schools, even though the educational task assigned to the REC is considerably more complicated than that of the primary school. Costs can be too low when very little achievement can be shown for them.

While any realistic program for rural education must take advantage of all cost-saving opportunities and make efficient use of available and new sources of support, it obviously must have basic resources that are commensurate to the tasks it is expected to perform. If the program can engender community support, the financial burden on the government can be partially reduced. In the case of REC, government financing has been inadequate and community support has lagged, in part because of a lack of popular enthusiasm for the program, but also because of the crushing poverty of the Voltaique rural families.

Operational problems. The choice of the medium of instruction poses a difficult problem in French-speaking Africa. French is the medium in RECs, presumably because it is the language of government and business; and it is also used in the primary school. Contacts with government personnel and people from outside the region, as well as business transactions in the market town, demand a knowledge of French. It would be difficult for the more ambitious rural youth to get ahead in life without a knowledge of French. On the other hand, a disproportionate amount of the students' time and energy during the three years is spent on what for most students amounts to a smattering of spoken French and an even more limited functional facility in reading and writing. IEDES researchers have noted that much is lost in the process of communicating technical agricultural information to the REC students and, subsequently, to the villagers because French is used in the centers. An alternative that might have been given at least a trial is More, the language of the Mossi people that is spoken and understood by more than half of the people of Volta. It also has a written form in the Roman script, and printed publications, including the Bible. While teaching in More would have been more efficient, it might have reinforced rural people's perception of REC as a symbol of discrimination.

The multiple roles and responsibilities of the REC instructor and his relatively meager rewards compared to those of the primary teacher have been noted. He is left virtually alone to fend for himself in an essentially unpromising atmosphere without much supervisory and technical backstopping or opportunity for professional growth. Supervision is so lax in some districts that, according to IEDES, one center has not been open to students for six months, yet the instructor has collected his salary regularly every month. Supervisory and technical help to the field personnel in a rural education program is more important than in a traditional primary school where the teacher's role and the instructional content is more well defined.

Another essential kind of backstopping lies in selecting and adapting the content of instruction. The experience of agricultural extension in general shows that the extension service can be effective only when there is a systematic provision for responding to the changing needs and problems of farmers by validating the extension message and adapting it to the specific situation. The REC, however, continues routinely to propagate certain stock practices, and attempts to implement them in the center farm within the limits of its meager resources, while the villagers are forced to cling to their own time-tested methods as the best insurance for survival in the face of climatic vagaries.

The RECs are in an untenable position, because they are expected to manage model farms where improved farming techniques are practiced, yet none of them have been provided with even a modest complement of agricultural tools considered essential for their operation, and most have received as donation the poorest of the poor village land for their farms. While the REC farm should not set standards of cost and investment totally out of line with those of the village farms, it needs to be provided with the resources to carry out initial experiments and demonstrations. It is not designed to be a self-financing operation. A scarcity of essential supplies, such as books and paper, is probably another indication of lukewarm government enthusiasm for the program.

The REC experience clearly demonstrates the vital role of follow-up activities for the trainees of a rural education program. RECs and similar occupationally-oriented programs by themselves cannot carry on effective follow-up activities. The factors that are helpful to the follow-up activities--the overall rural development milieu and the imagination and dedication of the educational program managers--are also the factors that contribute to the good performance of the REC program itself. It should be noted, however, that the post-REC groups have taken root in one district only through individual initiative, and have yet to spread to other areas--although they have met with government approval and their importance is now well recognized by REC authorities.

Recognizing the contradictions in the REC program, the government instituted some major changes in the program in 1974. The RECs have been taken out of the Ministry of Education and placed under the Ministry of Planning and Rural Development and renamed as the Young Farmer Training Centers (Centres de Formation de Jeunes Agriculteurs), or CFJAs. A plan is underway, with assistance from the World Bank and the European Development Fund, to strengthen the Rural Development Organizations in five districts. It is expected that these RDOs and the CFJAs, now under the same national ministry, would work closely with each other. The plan provides that the trainees from the centers are to be encouraged to form cooperative post-school groups and are to receive assistance from RDOs in establishing farming and other economic enterprises. The results of these changes have yet to be seen.

Conclusions. It may reasonably be argued that the system as it was originally conceived has been given something less than a fair trial. What was intended to have been the major national educational thrust has from the outset been only the "poor relation" of the formal schools.

It is evident that for poor countries with scanty resource endowment and only a thin spread of conventional schools, an REC-type system offers a way of spreading learning opportunities more widely than can be afforded by conventional approaches. There is evidence, too, that there are advantages to be gained by having an older age-group exposed to institutionalized learning and for a shorter time than the younger age-group in primary schools. Despite all the difficulties, the better centers have proved that the mechanisms of reading, writing, ordinary conversation, and computation connected with everyday life have been acquired (and in a foreign language too) by a sizeable number of students. The students undoubtedly also acquire new agricultural knowledge, even though they do not have the opportunity to apply all of it either in the center or in the village. Indeed, considering the limitations of resources, the briefer time span, the nonselective nature of the clientele, and the broader scope of the objectives, comparison of the REC with the primary schools only on the grounds of literacy and arithmetic is unfair.

The "technical" feasibility of the REC program, and its ability to achieve some results in spite of all the difficulties, do not, however, ensure its future viability and effectiveness, at least in Upper Volta. The RECs, even in conjunction with RDOs, do not constitute a real attack on the main problems of rural Upper Volta--absolute poverty, poor soil, drought, and the inability of farmers to use farming techniques that they know can produce better results because they cannot afford the supplies or fear the risks to their livelihood. While the REC program remains incapable of contributing as much as was originally expected to making life better for the future farmers and

rural residents, it also fails to open the door to the city and the modern sector of the economy, a promise that the primary school fulfills for at least some of those who succeed in staying in school long enough.

The lesson of the Upper Volta experience is that a rural education program cannot be effective as long as it stands as a symbol of discrimination and fails to gain the acceptance of the rural people. The stigma of discrimination can be removed, and the confidence of the rural people in the program regained, if there is a government commitment supported by necessary action to build a unified national system of basic education--or at least to remove the more pernicious elements of a dual system, and to provide the needed support for the program to succeed. This is a political choice that Upper Volta and all other countries seriously interested in rural education must make.

[Extracted from Chapter 9 of Education for Rural Development: Case Studies for Planners, Manzoor Ahmed and Philip H. Coombs, Editors, pp. 335-63. New York, Praeger Publishers; Copyright © 1975 by International Council for Educational Development.]

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Case Studies in Primary Education

Judith Brace and Barbara O'Grady

[The following case studies, briefly summarized, indicate some of the experiments that are being made in primary education in the developing world. Some of the goals they try to achieve are to spread primary education more widely, to serve community needs more fully in rural areas, to improve educational quality and appeal (i.e. lower dropout rates), and do these at low cost.]

1. India: The Social Work and Research Centre's Primary Education Project

The Social Work and Research Centre (SWRC) is an indigenous organization in Ajmer District, Rajasthan, whose basic aim is to strengthen the control that villagers have over their own lives. They sponsor innovative experiments in community organization. In this case their objective was to test a new teaching approach to providing basic education to meet the needs of rural children. The project described here was supported by India's National Centre for Education Research and Training from 1975 to 1978.

As part of their efforts to make schooling more relevant to problems of rural India, SWRC launched an experiment in primary education in the schools of three isolated rural villages. The experiment included three major changes from traditional schooling. The schools' regular teachers were reassigned to other areas and were replaced by six young local recruits with no teacher training--two farmers, two priests, a widow, and an unemployed youth. They were given a brief training session at the SWRC campus, followed by weekly workshops throughout the school year with SWRC staff and visiting

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specialists. These were open workshops, in which issues and problems were discussed freely and critically. New ideas were proposed and the schools' performance evaluated.

In order to make the schools as accessible as possible to the learners, the school hours were adjusted: younger students and those who were free attended a morning shift (8 a.m. to noon) while those who worked during the day attended the evening session (7 to 10 p.m.). This later schedule was especially suited to former dropouts who work. The objectives of the official syllabus in language and numeracy skills were retained, but the SWRC program designers made substantial changes in both the teaching methodologies and the curriculum. Changes were in line with the goal of providing students with more interesting experiences grounded in their own social, economic, and physical environment. The school was a "learning center" that had its own garden and animals. The village itself was considered an extension of the school and villagers with special skills were drawn into the school as "teachers." Subjects were taught through work projects, group discussion, field trips, and observation. Each learning center developed its own teaching materials and aids.

Results: From the beginning, evaluation was part of the experiment. Technical help for this was provided by the Regional College of Education. By the end of the second year, the number of 6 to 11 year olds attending school had risen substantially, and the dropout rate had declined. These students were then tested against their counterparts in two traditional schools of the region. Scores for reading and listening comprehension were considerably higher in the experimental schools. The results were the same with environmental studies. Although the difference was not as marked, arithmetic scores were also higher in the experimental schools.

The feelings of the community toward their experimental schools varied. Lower-caste villagers were more supportive than the upper castes. There was some lack of cooperation from the village leaders because of the schools' direct approach to the parents rather than to the leaders. As the experiment progressed, community support grew. Parents of one village, for example, offered free labor to dig wells for the schools.

As in many efforts of this sort, the care and maintenance of the school gardens created problems. In the SWRC case, the watering and other routine chores when the school was closed presented difficulties. In other instances, either fruits of the labors are often not democratically distributed, or children of lower class are expected to do all the work. Sometimes the schedule for animal care and the school schedule did not coincide; and there were some labor and cost problems.

The overall assessment of the primary program was that it had successfully shown that a radically different approach to rural schooling

was possible, but that achieving best results required the dedicated and continuing attention of workers who believe in the ability of rural residents to solve their problems.

2. Guatemala: Primary Educational Development

Two-thirds of Guatemala's primary-age school children live in rural areas where there is only one classroom for an average 140 children. Of the 29 percent of the total school-age population that is in the school, only 2 percent reach the 6th grade; only 4 percent of the rural schools offer six grades. Of the adult population, 70 percent are illiterate. In a still on-going project started in 1971, experimental schools were founded to address this situation.

When Guatemala was seeking education funds from the U.S. Agency for International Development, The World Bank, UNESCO and the Inter-American Development Bank, the government made a detailed analysis of its educational system and devised a plan for reform. Four primary schools were designated "pilot schools": two were located in the Ladino (mixed Spanish and Indian) region, and two in the Indian highland areas. These four schools would serve as teaching laboratories; they would provide grades one to six, and become receiver schools for three to five "satellite" schools. These satellite schools were the traditional one-room, three-grade schools from which very few students had bothered to seek further education. The pilot schools hoped to reduce the dropout rate and thus the per-pupil cost.

The pilot schools serve as laboratories to introduce new techniques, and as teacher-training centers. Four other six-grade schools were selected as controls for comparison during the experiment. The pilot schools test project-centered instruction materials in arithmetic and the natural and social sciences, all of which are based on rural life. The staffs of each of the schools have developed supplementary textbooks for the specific regions and language of the pilot schools. Learning subjects include agriculture, health, nutrition, home economics, and industrial arts. The schools are provided with pumps, irrigation equipment, and libraries, and each school has land for a farm plot and equipment. The schools serve as centers for adult evening classes as well.

The pilot schools test new methodologies, new curricula, new administrative organization, and new supervisory techniques. With a tested method of improving primary education, it is hoped that secondary education in the country will later be upgraded. All aid organizations are in agreement that to improve secondary education, the quality of the student entering from primary schools has to be improved.

Results: Evaluation of the project showed that the output of the pilot schools' sixth grade had increased 40 percent since 1969. There were higher promotion rates in pilot schools than in the control schools for all grades (88.5 percent v. 55 percent) and higher enrollment in

grades four to six in the pilot schools than the controls (46.5 percent v. 35 percent). In 28 major comparisons between the pilot and control schools, the pilot schools scored significantly higher in 21 grade or subject areas. A ratio of 40 students per teacher was reached in the pilot schools. Detailed curricula for each of six primary grades have now been developed and tested. A new loan-funded normal school is using these curricula and teaching methods developed in the pilot schools. For the first time, screening procedures for incoming teachers have been initiated. Out of 700 teacher candidates, 180 were chosen and trained at the pilot schools.

In the area of practical teaching, the schools' agricultural projects are now self-financing. Community parents in the pilot areas, under supervision of pilot school technicians, increased their corn and bean production 400 percent in 1973 through use of recommended fertilizers. Parents are participating in increasing numbers in school programs and are making use of the industrial arts shop facilities.

3. Philippines and Indonesia: Project IMPACT/Proyek PAMONG

In 1974, the South East Asian Ministers of Education Organization (SEAMEO) with funding from the Canadian International Development and Research Center and the Governments of the Philippines and Indonesia, attempted to develop an effective and economical delivery system for mass primary education. They came up with the concept of Instructional Management by Parents, Community, and Teachers (IMPACT). Two experimental sites were chosen, Cebu Island in the Philippines and Surakarta, Indonesia. In the former the project is called IMPACT, in Indonesia the acronym PAMONG (with the same meaning) is used. In both cases the project goals are to make primary education available to all children as the school-age population continues to rise, to use existing teachers more effectively, and to reduce the dropout rate and the per-student cost.

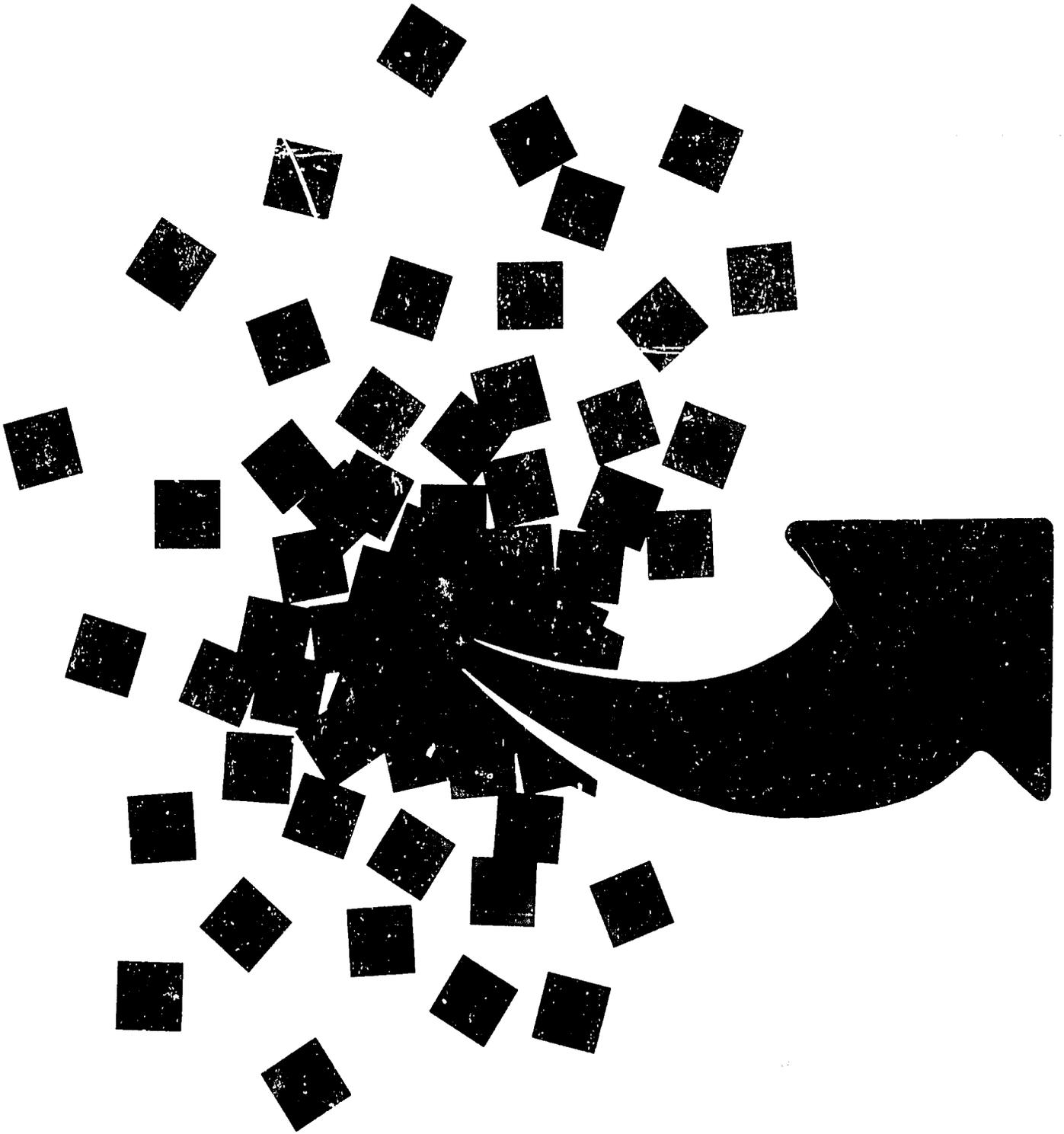
The teacher's role is changed from instructor to "manager" of a variety of instructional elements, including community volunteers, self-instructional learning modules, remedial classes led by older students, peer-teaching/learning, parental monitoring, and the overseeing of up to four times as many pupils as in a conventional setting. Of these various elements, the self-instructional modules are the core. The standard Government syllabus has not been changed but was rewritten in the form of modules. A module takes up one idea or subject, and "packages" the subject in the form of a self-instructional booklet that takes the student from a pre-test, through the concept to be learned, to a post-test. The pre-test indicates how much the student already knows; the post-test is given by the "manager" to see whether the student has learned the subject well enough to go on to the next subject and its module. It takes the average student about one week to complete one module.

Schools become community learning centers where classrooms are replaced by "learning kiosks" built by community parents. Here small groups of pupils gather to work on a subject module with their peers, and then move from one kiosk to another with other students to work on other modules. Older pupils rotate the responsibilities of instructing the lower grades in reading and writing, testing them in comprehension and simple mathematics, and using flash cards and flipcharts as instructional tools. Essential to the process is a keeper of records, for logging modules as they are taken and returned, for scoring and recording tests taken, and for keeping track of all the equipment. This person frees the former teacher, now an instructional supervisor, to spend full time monitoring academic progress of the students. The community learning center and its flexible study modules enable a student to return to the system at any time if circumstances have caused an absence. In the same way, adults or older youths can re-enter the system by simply checking out the programmed modules, taking the tests, and moving along through the grades at their own speed.

Results: Module learning was introduced in grades four and five initially; for students finishing traditional third grade, it was a difficult transition. The most difficult aspect of Project IMPACT/PAMONG was the training of the students to "learn to learn." Giving students carefully designed, simple modules was not enough. The children first had to learn the skills to deal with the modules. Module writers agree that it would have been an easier task to begin with the first grade and move along producing modules for these students as they pass through the grades.

Results from this experiment in programmed learning, however, have been promising enough to cause its expansion in both of the test countries to additional locations. The Standardized Official Test in the Philippines and the BP3K test in Indonesia showed higher test scores in mathematics for the IMPACT/PAMONG students than for conventionally schooled students. In the Philippines, an IMPACT student, on the average, scored 125 to a non-IMPACT student's 100; in Indonesia, a PAMONG student's score, on the average, was 107 to a non-PAMONG score of 100. Other subjects showed an even higher average score for the experimental students. In the Philippines, a saving of at least 15 percent in school operating costs has been estimated. AID is initiating a replication of the IMPACT/PAMONG system in Liberia (1978-1982), to determine whether these innovative mechanisms can be adapted to an African setting.

[Extracted from "Case Studies in Primary and Non-Formal Education and Management Training," a report prepared by the Academy for Educational Development, Inc., for the U.S. Agency for International Development, Washington, D.C., 1979.]



ORGANIZATION FOR DEVELOPMENT

DESIGN SYMBOLIZES THE BRING-
ING TOGETHER OF DIVERSE ELEMENTS
WHICH ARE CONVERTED INTO A
STRONG FORWARD MOTION TOWARD
NATIONAL DEVELOPMENT. (GRAPHICS:
BARBIERI AND GREEN)

Toward a Technology for Managing Social Development

David C. Korten

[The public administration methods recommended to developing countries during the 1950s and 1960s are open to criticism. This article proposes an approach far closer to actual administrative decision-making that can contribute to the adaptability in problem-solving that is needed in the development process.]

Recent emphasis on equity and basic human needs in Third World development strategies has stimulated renewed interest in the problems of managing development programs intended to reach the urban and rural poor, and placed major demands on limited public sector management capabilities. The administrative and analytical tools widely espoused for use by public sector development institutions in the past are now widely criticized as inadequate or inappropriate. This paper reviews the criticisms and examines some of the basic requirements of the social development process and their management implications. It identifies and discusses the need for new management technologies suited to the social development task.

Development Administration and the Transfer of an Inappropriate Technology

Beginning with the early 1950s, the development and reform of Third World governmental administration represented a major category of U.S. technical assistance through most of the 1960s. These technical assistance efforts emphasized the transfer of U.S. administrative practices which largely reflected the doc-

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trines of the 1930s: a combination of Weberian theories of bureaucracy and the principles of scientific management formulated by Frederick Taylor and Henri Fayol. The doctrines emphasized the separation of policymaking and implementation: administration was to be instrumental only, carrying out policies established by the political authority.

Administrative reform was seen as consisting of introducing values of rationality, hierarchy, responsibility, professionalism, specialization, and discipline into a bureaucracy. The central concern was with upgrading services like personnel, budgeting, accounting, organization, using methods practiced in the United States. At the same time a major reform objective was to transform the character and aims of government to be more responsive to development needs. A common solution was to create a national planning agency outside of the implementing bureaucracy. Planning, and the design of development projects, were policy-making activities, consciously separated from the on-going routines of government; they were to provide the central force for change.

Subsequent criticism of the approaches to administrative reform which prevailed through the mid-60s has been widespread, and sometimes caustic. Among the criticisms are the following:

1. The U.S. public administration technologies which were exported were inappropriate both to the task of development and to the environment in which they were to be used.
2. The emphasis on rules, procedures, formal structures, position classification, PPBS, and formal organizational specifications was better suited to system *improvement* within well-institutionalized socio-political systems than to the need of Third World nations for system *development*. Furthermore, these tools and techniques were not adequate for establishing organizations that would produce new outputs, stimulate new forms of behavior in their environment, and continue over time.
3. The separation of planning and implementation left the planners far removed from reality. It generated in some planners a sense of omnipotence and a disdain for the lesser folk who were simply to follow their directions.
4. Comprehensive, multisectoral planning called for unavailable information, nonexistent knowledge, and political steadiness in constant pursuit of aims to an extent undreamed of in the experience of most developing countries.
5. The emphasis on planning was at the expense of the implementing managers, on whose effectiveness and imagination the success or failure of a project was often dependent. The planning and control models failed to encourage an

ability to rapidly identify and solve problems, an aggressive attitude toward overcoming obstacles, and a sense of power to change and implement at lower organizational levels.

6. The technical assistance effort in administration was largely isolated from newly emerging insights in organization theory which were seriously challenging the "simplistic" models of the 1930s.
7. Planning activities tended to ignore the reality that power is dispersed, and that policy choices arise out of political competition among divergent interests.

In effect, the strongest and most readily available analytical and administrative technologies have tended to shape the definition of the development problem, rather than the reverse. Three basic requirements relating to the organizational dimensions of social development have tended to be neglected, with serious detrimental consequences.

- The need to design organizations capable of rapidly adapting to changing local circumstances.
- The need to organize urban and rural poor for participation in making policy decisions affecting their lives.
- The need to develop institutional linkages between center and periphery, between sectors, between programs and communities, and between political and bureaucratic systems.

[In this extract, the first of these three organizational needs and its managerial implications will be examined.]

Organization for Rapid, Purposive Adaption

Development-oriented organizations must be able to respond rapidly to local needs and circumstances. The true barriers to implementation of a development project are seldom foreseen in advance, nor are the creative responses by which these barriers can be overcome. Often circumstances are such that development projects would be doomed to failure if it were not for the initiative of implementers who take actions which go beyond prescribed plans and procedures. There is nothing novel or startling about this conclusion except that most development planning and administration rests on a completely contrary set of assumptions, i.e., that all obstacles can be foreseen and that local initiative is neither required nor even desirable. It is rare to find project plans which give attention to developing implementing organizations capable of making rapid adaptation to local circumstances.

The reason so little attention is given to organizational variables in development planning is because of the view of decision processes implicit in most project planning technologies. This view derives from what Steinbruner calls the *analytic paradigm* (or model). A very different view which provides quite a different perspective on national planning and implementing processes is provided by the *cybernetic paradigm* (model). The analytic paradigm is a set of assumptions about how decisions *should* be made under ideal decision-making conditions. It provides the basis for the formal model of planning and administration which has dominated development administration efforts. It prescribes a decision-making methodology appropriate when complete information is available, all alternatives can be evaluated, and decision-making is relatively free from political and institutional constraints.

The cybernetic paradigm, by contrast, is a set of assumptions about how decisions are actually made by groups and individuals. It is a more powerful tool for analyzing and improving organizational processes. The two paradigms serve different purposes, although this fact is often overlooked. By taking into account these differences it is possible to develop an alternative model of planning and implementing processes which achieves a partial synthesis of the two paradigms. Such a synthesis provides a framework for developing the more *adaptive* organizational structures and management systems required by organizations engaged in social development.

The analytic paradigm and the formal model of administration.
Under the analytic paradigm it is assumed that to reach an optimal decision, the decision-maker will proceed through the following steps:

1. Assign relative preferences or utility values to alternative states of the world.
2. Identify a range of possible actions.
3. Conceptualize a set of possible alternative states of the world which might result from each course of action, and assign values to each state.
4. Assign probabilities to each alternative state as a basis for predicting the consequences of a given course of action.
5. Combine the probability and value calculations to determine the action which has the highest expected return. This is the choice.
6. Continually update outcome calculations as new data become available.

The most carefully articulated models of this analytic decision process could apply only to an individual decision-maker; the barriers to extending their application to any kind of collective decision-making are formidable. In instances where decision-making by several parties is in-

involved, the usual practice is therefore to assume a decision-making entity which acts as if it were a single person, as if it could assert objectives and calculate strategies in their pursuit with the intellectual coherence of a single human mind. In the model of development administration based on the logic of the analytic paradigm, the function of the unitary decision-maker is assigned to a national planning office. It is presumed that the planners, a technically trained intellectual elite, will draw on a wide spectrum of data and research to identify policy options. Using formal analytic techniques they will assess the anticipated costs and benefits of each option to arrive at an optimal choice. This choice is then formalized into a program presented in the form of budgets, staffing tables and procedures. This is passed to Weberian-style bureaucratic agencies for implementation. The assigned role of the implementing bureaucracy is only to follow instruction, not to engage in analytic calculations of its own.

The bureaucratic system itself is supposed to insure adherence to procedure. Consequently its goals are set, and its performance is then evaluated on the basis of proper performance of prescribed activities rather than the accomplishment of results. Training teaches the procedures. Organizational lines of authority emphasize affinities between those responsible for similar procedures to ensure standardization; supervisors check on compliance with procedures. Feedback consists of providing reprimands when procedures are not followed. The entire system is designed to maintain central control by encouraging uniform compliance, thus minimizing adaptive behavior. If the implementing bureaucracy acts according to plan, some changed state in the program's environment (i.e., a planner's goal) is anticipated, such as improved health, increased contraceptive practice, or increased farm income. An objective outside evaluation group is commissioned to determine whether or not the bureaucracy's action, after a suitable period of time, has in fact produced the intended change. This information is then processed and passed to the planners, who update their choice of the next prescribed action accordingly.

This, in simple outline, is the model of the policy process and its supporting organizational structures which has dominated the development field, and generated the criticisms discussed earlier. While this described process represents an ideal toward which many planners strive, and while *elements* of the process are pervasive in the real world, examples of the complete *cycle* are difficult if not impossible to find. A basic weakness in the model stems from the fact that the tools of the planners are not sufficiently powerful to handle the range of data, action possibilities, and complex value orderings called for by the model. As a result, their analysis is at best partial. Also, data on social structures, administrative capacity, and the needs and desires of the common people are generally neglected altogether.

In the real world actual decisions are made through political processes, and are based on all sorts of things--which may or may not include the analyst's conclusions. While there are exceptions, most often the implementing organizations prove to be weak or inoperative, their members dispirited and disinclined to exercise the initiative required to overcome inevitable barriers to plan implementation. When there is adherence to the plan, it is likely that the plan will prove inappropriate to local circumstances and therefore ineffectual in reaching intended results. Evaluation is at best an uncertain process, because it assumes the capability to establish causality among a range of variables which are complex, interdependent, and often difficult to measure; it is hard to know why observed results occurred. Even where some reasonable evaluation data are produced, it may be expected that there will be a lag of at least three to five years between the time a project is initiated and the time at which outcome data can be collected, analyzed and transmitted. By this time priorities and possibly even the government will probably have changed sufficiently that the data are largely of historical or scholarly interest.

Does all this mean that rational decision-making has no place in managing the development decision process? Not at all. What it does mean is that while rational decision analysis may be a useful tool for improving the judgments of individual decision-makers, *the organizational model which follows from it is inherently unworkable in addressing all but the most routine of governmental activities.* And routine is what the tasks of social development are *not!* As a result the model is in effect attempting to force decision-making processes into an inherently unworkable mold. A look at the cybernetic paradigm helps make it clear why this is so.

The cybernetic paradigm. The cybernetic paradigm provides the basis for a descriptive model of organizational decision processes. It is organized around two central assumptions: that individuals make decisions based on short-cycle information feedback, and the elimination of uncertainty. The decision-maker is presumed to be continually watching a small set of important variables that are feeding back information from the outside world. For example, a medical supervisor might monitor the number of patients seen per hour by the doctor in a health facility. When the condition of one of these variables moves beyond acceptable limits (say, the number of consultations drops to less than three per hour), some action is taken. The choice of action seldom depends on an explicit analysis of the situation. More likely it will be a programmed response based on patterns of habit (the supervisor may send the doctor a letter of reprimand). If the variable then returns to an acceptable condition (say, four consultations per hour), no further action is taken. If it does not, the action is taken again, with modification (a stronger letter); or a back-up behavior in the programmed

sequence is tried (a telegram). This process reflects the desire to reduce uncertainty: 1.) Attention is focused on only a few variables, with other information screened out (such as whether additional persons seek medical attention). 2.) Serious calculation of probable outcomes is avoided (such as the possibility that the reprimand will lead to generation of false reports). 3.) Actions are confined to familiar and tested responses (sending reprimands) which, if nothing else, provide written proof that "action was taken." The process does not necessarily produce desirable outcomes, but it does provide a relatively accurate description of typical decision-making behavior in bureaucratic systems.

Unlike the analytic paradigm, the cybernetic paradigm can easily be used to analyze the behavior of multiple decision-makers within an organization. Furthermore it suggests an approach to increasing the capacity of groups to deal with complex environments while maintaining a simplicity for the individual decision-maker: by increasing the number of decision-makers, each is able to focus on a limited set of concerns, but all are linked together through formal organizational structures.

The cybernetic paradigm focuses attention on the *processes* rather than the *techniques* of decision-making. It highlights the inadequacy of any organizational model which presumes that major policy decisions either can or will be made by an all-knowing central decision-maker on the basis of "rational" economic calculations. The "decisions" which emerge from complex social systems are a result of the mutual coping and adaptation of multitudes of decision-makers throughout the system, each attempting to address his own definition of organizational and personal purpose within the context of a changing environment. This perspective suggests that the primary concern of those who would influence policy should be with the adjustment of the regulators which control the dynamics of decision processes throughout the relevant organizations. This adjustment process is known as *meta-management* and will be discussed below.

Within the cybernetic model both planning and implementation are inseparable parts of a short-loop adaptive feedback process, and it becomes inappropriate to make a clear organizational distinction between them. Planning becomes a continuing part of the management process, with different planning functions being carried out by responsible persons at different organizational levels. General policy directions are developed as part of a competitive political process. Just as planning is not a separable activity confined to a specialized unit, neither is evaluation. Evaluation is integral to the "cybernetic" process of monitoring key indicators and responding to those that vary beyond acceptable limits. Every active decision-maker in the system must be involved in it one way or another. If these decision-makers are ineffective in planning and evaluation functions it is because the organizational system was not properly designed.

Toward a Synthesis: A Rational-Adaptive Model of Organization

A major barrier to the success of social development efforts might be overcome by putting the analytical organizational model to rest. In its place can be offered a new normative model, a rational-adaptive model, which combines modern analytic techniques with advanced organizational design concepts. It suggests a focus on measures which will increase the collective rationality of large groups of individual decision-makers' actions within a cybernetic type of decision process. There are two premises:

First is the presumption that choices will seldom be taken solely on the basis of formal analytical studies; and they will not be made by a single independent decision-maker.

Second is the presumption that, while much behavior in organizations is routinized, with limited search patterns, it is possible to increase the rationality of individual actors, and thereby the adaptive capacity of the organization. This is accomplished by introducing training which helps these actors see new action possibilities, and by organizational systems which encourage more varied problem-solving behavior.

The approaches to improving system performance offered by the rational-adaptive organizational model are rather different from those suggested by the conventional formal model. These approaches rely on the idea of building problem-solving teams throughout the organization, able to act within broadly defined policy guidelines to achieve high levels of performance responsive to local needs. To facilitate this, key systems are designed to the following specifications.

- Goal setting and performance feedback systems must be designed to encourage decision-makers at all levels to focus their attention on performance indicators. Attention must be given to determining which performance indicators, whether quantitative or qualitative, are most consistent with overall program objectives, and to designing the system which will economically generate, compile, and communicate the required feedback in useful formats to the appropriate persons.
- Training must be based on problem exercises typical of the problems actually faced by persons in the program or organization for which the trainees are being prepared. The training must develop skills in problem identification and solution in personnel at all levels.

- Organizational designs must emphasize affinities among those who must work as a team to produce results. This requires capability in the analysis of tasks and job assignments to determine the appropriate teamwork configuration for the particular tasks to be performed.
- Supervisory practices must support adaptive behavior at lower organizational levels. This often requires a re-definition of supervisory roles.

The techniques of formal analysis can be brought to bear within this framework, using the preparation of formal analyses intended to provide analytic input to decision-makers representing different interests. The specific steps to be taken should include the following:

- Technical units should be established throughout the system to provide analytic support capacity to key groups of decision-makers.
- Linkages should be strengthened between analytic and decision-making functions.
- The system should be structured to provide the decision-maker with adversary analyses supporting different positions.
- Analytic methods and outputs should be simplified to make analysis more understandable to decision-makers.
- Professional analysts should be trained to give attention to issues of organizational capability and design, social output and distribution, and interest group preferences in their evaluation of policy options.
- Decision-makers should be trained in the use of economic, social, and organizational analysis, both to use the contributions of specialized analysts and to increase their own analytic skills.

The basic concepts of the rational-adaptive model have achieved a high level of sophisticated application in some of the more advanced business enterprises. There is a great deal to be learned from this experience; but the public sector manager faces a great many different constraints which may necessitate substantial adaptation of the management technologies developed with the private sector. There is a particular need for more knowledge of the change process in the public sector, and of the requirements of specific applications of technologies based on the rational-adaptive model.

Meta-Management: The Design of Decision Processes

Discussion of the requirements of social development points to a very important proposition: *if development strategies are to change, then the processes by which the society makes development-related de-*

cisions must change. Therefore, a crucial responsibility at the highest levels of any government seeking a social development strategy must be to assess and reorient these processes in ways appropriate to the requirements of that strategy. Such assessment and reorientation have been labeled *meta-management*.

"The fundamental concept of meta-management may be described as an endeavor toward influencing problem-solving processes within the system, rather than an attempt at 'finding solutions to problems' on behalf of the system," (Raymond Bauer, 1972). While it has been looked at most closely in relation to the functions of the highest management levels in large multi-business corporations, the concept of meta-management has major relevance to the highest levels of the public sector as well. In business, the growth and diversification of corporations has meant that top management can no longer make decisions directly for each component business, but rather must regulate the decision-making systems within which these decisions are made. Similarly, the growth and diversification of national governments has meant that major national departments or ministries which may once have directly controlled their own operating programs must gradually delegate direct authority over these programs to local bodies and assume the role of system regulator. The total society and its component economic, political, and cultural institutions become the relevant unit of concern to national level public meta-managers.

The reasons this transition is needed are much the same in government as they are in business. In large complex systems central authorities cannot possibly maintain sufficient expertise in all facets of system operation to make intelligent decisions for individual subunits comprising the system. They are too far removed from the data; and they also know that if the actions taken centrally were sufficiently contrary to the views or understanding of the subunit management they would in practice be ignored or subverted. Thus central authorities must seek more indirect means to shape the direction of the system and its components by shaping the decision processes by which their direction is determined.

Meta-managers exert influence over decision processes through their attention to structural variables, especially organization, information systems, and reward systems; and through making the judgments about individuals on which appointments to key decision-making posts are based. Brilliant analyses of economic and technical problems are seldom of as much concern to meta-managers as are people and ideas. Viewed from this perspective, the fact that one often finds that the major concerns at the highest levels of government are with people, power, process, and control of rewards, rather than with sophisticated economic and technical analyses, may not be so perverse as it might otherwise seem. The technical tools of policy analysis *are*

more relevant to the concerns of intermediate and lower level policy-makers than to the very highest policy levels.

Distribution of power and the resolution of conflict are the consuming concerns of meta-management as they are a pervasive reality in large diverse social systems. Richard Normann suggests that in the business context, ". . . *meta-management's possibly most fundamental task is to see that the company has a satisfactorily functioning internal political system.*" Likewise it might be said that possibly the most fundamental task of the public meta-manager must be to see that the society has a satisfactorily functioning political system. If committed to social development, then we must see that this system provides for active participation of the poor.

The development of a capacity for meta-management must be a major priority of those concerned with social development. It is often presumed that what top policy-makers need most is more training in project analysis, PERT, and other techniques used by the professional planning technicians. To train them in the processes of political mobilization, and structural and bureaucratic reform, i.e., the skills of social-development-oriented meta-management would be more relevant. Indeed it can be argued that the professional planning technicians located in national planning units could also increase their effectiveness substantially from a grounding in meta-management, and revise their roles accordingly.

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The Transferability of Western Management Concepts—A Fourth World Perspective

Jon R. Moris

[Training in Western management methods has produced disappointing results in much of Africa. This article explores some of the missing prerequisites for Western-style efficiency, a lack which stems from the colonial era. (Note. The term Fourth World is used here to mean the poorer developing countries.)]

If we define the management process in Western terms as "the activity of planning, initiating and controlling the activities of other people," and if we assume (as many do) that the organizational techniques accumulated in the West over recent decades render this process a rational and efficient instrument for achieving organizational goals, there would appear to be a clear case for the direct transfer of these techniques into non-Western contexts. It is, after all, in the poorest nations where resources are most scarce that the attainment of organizational goals is most important for the survival and well-being of the society.

Let us define more explicitly the basic ingredients of our Western management concepts and programs that allow us to refer legitimately to them as a coherent tradition. Certainly, "Western management" does not possess a substantive unity as an intellectual discipline, a common body of agreed principles. What is it then that we have to transfer? Most authors accept a certain minimum definition of the scope of Western management:

- a. It is about hierarchical organizations
- b. with formal structure and internal specialization
- c. which have defined tasks

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- d. realized by the employment of rational techniques
- e. of Western origin
- f. designed to maximize efficiency.

But this sort of definition, of which there are many variants, can be quite misleading when utilized as a justification for the direct transfer of Western management concepts and programs into non-Western settings.

We owe an intellectual debt to comparative administration theorists for making clear some of the assumptions implicit in the above model. First, "rationality" and "efficiency" are attributes of organizational action that are determined not by the techniques themselves but rather by their manner of employment within larger contexts of organizational activity. For example, the use of elaborate cost-benefit techniques where data are unavailable, true costs unknown, and benefits cannot be measured can hardly be defended as a rational and efficient exercise. Second, by definition, management involves the employment of managerial techniques in a social context: the surrounding administrative culture is just as vital to effective management as are the specific techniques, if not, indeed, more vital. Third, the paradox we face in so many ex-colonial nations is that some of the greatest managerial barriers consist of administrative traditions *originally derived from the metropole itself*. To view such systems as being fundamentally non-Western is historically incorrect.

Our image of "management" as being *Western, rational and efficient* is probably a better indication of our needs within Western society than it is a tool for the comparative analysis of other administrative systems. For example, the notion that Western management is intrinsically rational strikes many non-Western observers as strange, since to them the patent irrationality of many of our arbitrary procedures is strikingly obvious. Similarly, in stressing the great efficiency of Western management, we easily overlook the coexistence of other, deviant forms of management within the West (some highly effective examples being the criminal Mafia organization, and the Daley political machine in Chicago), as well as entire bureaucracies (the Italian case), which embody irrationalities that would otherwise be judged as "non-Western principles."

Management, in contemporary business parlance, is a peculiarly American invention--and a fairly recent one at that. Like the computer, it has emerged rapidly through a sequence of specific responses to practical organizational needs. It is not accidental that this tradition has traveled most successfully on the back of American business and military ventures: with MacArthur to Japan, with SHAPE to Germany, with ITT to Latin America, with the multinationals to Britain and Spain, with the oil firms to OPEC countries. In all these cases, the effective

transfer of Western management depended upon a massive accompanying cultural penetration, for some countries virtually the Americanization of whole sectors of their economy. Given such support, the Western management techniques have appeared to yield "rational" and "efficient" results in some non-American contexts.

However, much of the Fourth World experience (excluding the OPEC countries) indicates that the mere export of management techniques by themselves remains problematic--a form of transfer likely in the longer run to be neither effective nor perhaps desirable. Partly, the error comes from the widespread but unproven assumption that management is principally a matter of skills: a sort of craft that can be taught in any cultural context, and hence subject to export in much the same way as ox-plowing has been introduced in many societies on various continents. Partly, the error derives from our own fundamental naïveté about "what makes management tick" in Western industrial societies. The standard textbook treatments of the topic abound in long abstract discursions on management functions, with chapters on "planning," "coordinating," "communicating," "delegating," and so forth. There is endless talk about *training* managers, as if all one has to do to become an effective manager is attend the right courses. But we don't really believe it, and neither do the companies--at least when it comes to the recruitment of their key managerial talent.

The African Exposure

The impetus for a rapid transfer of Western managerial training into African contexts arose from a convergence of opinion on both sides about the needs of new nations just after independence. The first priority in such nations was to replace the colonial administrators: either by rapid promotions of junior officials, which in Africa usually meant crash programs of short-term training, or by starting their own institutes for professional training, and usually by both. America had the universities, and the technical assistance funds, to satisfy these demands. In Africa, the assumption that managerial effectiveness is primarily a result of adequate training is not only unquestioned: it is one in which existing regimes have made an enormous investment. Most African nations show a rapid expansion of their top cadres. Thus, to challenge the efficacy of management training may seem to imply querying the rationale for Africanization itself.

Yet, at some point the issue must be faced: why is it that the transfer of Western management practice into Africa and Asia has had such disappointing results? Here, the simple answers are quite probably wrong. After bitter trial and error, one can only conclude that it is the system itself that is the problem, rather than the special conditions or people in one country or another. Working within such a system, one soon realizes that deeply rooted attitudes toward authority and

assumptions about communication negate the intended impact of many Western managerial innovations. To the outsider, the origin of these obstacles within the colonial tradition seems obvious. Americans, however, fail to realize that this inherited ex-colonial system is finely nuanced and extremely complicated. Just as independence opened the door for the indigenous leaders to assume coveted positions of authority, so also much of the *esprit-de-corps* shared among senior officials derives from their patiently acquired expertise in making an arcane system jump through the hoops by dint of great effort. Challenges to the individual's established ways of showing deference are thus perceived as immediate threats to the established administrative order. For, in truth, it is no longer, for two or three decades, "the British" or "the French" or "the Dutch" system of administration; it is now fundamentally *the national system*.

Let us distinguish carefully between *techniques* and *administrative culture*. Techniques are by definition readily identifiable skills; and, as such, they are subject to transfer by training. They have been the object of virtually all "management training" that has been conducted in Fourth World contexts to date. Administrative culture, on the other hand, is the combined outcome of a long process of *informal work socialization*, and the interaction of complex administrative structures. It is much less readily amenable to direct transfer, perhaps hardly subject to programmatic transfer at all.

While we have little difficulty enumerating for export various promising managerial techniques (PERT, Management by Objectives, etc.), we know almost nothing about the structural prerequisites that underlie their effectiveness in the parent society. Nevertheless, it does appear that the transfer of at least some parts of this surrounding administrative culture is an essential precondition for the effective transfer of these techniques into other administrative systems. Examples of some of these crucial elements of American administrative subculture, whose lack in African contexts might help to explain the very weak performance of individual Western techniques, are as follows:

1. The interchangeability of organization resources (manpower, materials, plant, time, and money) for decision-making purposes.
2. Prevalence of an informal relationship of trust among managerial associates (in contrast to "zero-sum game" competition in which anyone's gain is always someone else's loss).
3. Acceptance of the costs of tying expensive facilities and resources to special purposes to ensure their availability at all times for those purposes.
4. Extension of accounting records as a control system impersonally to all aspects of an organization's activities.

5. Acceptance of internal decision rules governing operations as restraints dictated by technical requisites.
6. Acceptance of quantitative performance standards as a criterion of organizational health.
7. Existence of mechanisms that institutionalize the organization's intelligence separate from the person of individual officeholders.

The preceding listing could be extended for many pages; but at the least it should illustrate the interlocked nature of supporting assumptions that surround and render effective the individual management techniques. Such assumptions cannot be made the object of a training package; they reside in the individual attitudes of actors throughout the system as a whole. Obviously, if the individuals in Western management refuse to accept the money value of their time, do not observe arbitrary scheduling commitments, misuse tied resources, and demand a full demonstration each time technical constraints are imposed--our system could not work very well, if at all. And yet, from the standpoint of the individual actor in his proximate social and economic relationships, operation according to the preceding assumptions involves substantial private costs that in most non-Western societies would appear unnecessary and irrational.

Our problem in sponsoring the transfer of this tradition into other administrative systems has the following components:

1. Which of these background assumptions are crucial to the success of a given managerial technique (whose transfer is being planned)?
2. Which of these are reasonably congruent with the premises already being observed in the receiving administrative system?
3. Which other linkages between assumptions are a precondition for successful transfer?
4. What program contexts would appear to offer a congenial social setting for implanting and encouraging the whole corpus of managerial innovation necessary to make the transfer effective?
5. And, finally, is the transfer itself a desirable objective, given the complexity of the necessary supporting arrangements?

Some Hypotheses

There is an emerging consensus about the diagnostic features of Third World administration that appear problematic from the standpoint of the Western management tradition. Many of these features are not unique to Africa, Asia or the Fourth World in general, indeed some

appear to be universal characteristics and shortcomings of any bureaucracy. However, the degree to which these factors are present, or the combined impact of factors present, can make Western management techniques ineffective in a Fourth World context. Here are some of the attributes various authors have noted:

1. Norms about hiring and firing may not be enforced, so that recruitment occurs only through personal influence. Security of employment is accepted as the norm of all levels, so that all who get in are safe.
2. The distinction between public and private goods is not always maintained, and, in varying degree, forms of corruption are common.
3. Tied resources are often diverted to meet urgent needs in other sectors; consequently, one cannot rely upon the availability and status of special equipment and facilities.
4. While governments' efforts are directed toward acquiring new facilities, capital and equipment, the maintenance of existing equipment and facilities is poor. Depreciation rates are roughly double those for the developed world, sometimes more.
5. Officials show marked ambivalence about technical matters. On the one hand, they may be sufficiently uncertain of their understanding of the issues at stake that no actions are taken. On the other hand, they often suspect deep down that technical constraints can be used as a pretext by the colonialists--now replaced by the Western experts--to embarrass them.
6. Professional norms may be poorly enforced, and professional "standards" are widely suspect as artificial devices designed to block the entry of indigenous nationals into such fields.
7. There is an intense internal politicization of the junior officers, who line up beneath various patrons in the hope that they may thereby gain advancement and recognition. Whom one knows and not what one does is regarded as the key to personal betterment. Distrust of one's associates and subordinates is common, and everyone remains highly sensitized to the power implications of each change of leadership and office.
8. When faced by a lack of enforceable sanctions, the top officials use the transfer of subordinates as a solution to almost every problem. Consequently, officials are constantly being moved around the country within the bureaucracy. Problems having to do with corruption or personality are not solved, but merely exported.
9. Within the administration, while downward communication is facilitated and expected, lateral communication tends to be

- forbidden and upward communication of a personal nature not sought.
10. Top officials find it difficult to delegate responsibility for decisions. Higher officials operate in a condition of chronic overload, while subordinates are underemployed.
 11. There is a flexible attitude toward scheduling. Almost everybody assumes that nothing ever happens quite as planned; therefore, departures from schedule are to be expected, and occur.
 12. There is a flexible attitude toward plans, which are viewed as paper commitments mirroring a certain situation in power relationships at one point in time. Power relationships and circumstances change; and consequently so does the urgency of carrying out mutually agreed actions.
 13. In administrative actions, the personal relations of everyone concerned are of paramount importance. Disagreement over issues is tolerated, but never if expressed in public; that would be interpreted as an attempt by the junior official to advance his own personal position vis-à-vis his superior. This situation leaves no room for rival views based on technical expertise.
 14. The administrative system frequently lacks the capacity for organizational memory, making it difficult to learn from past mistakes. Planning and coordination techniques remain personal to the leader in power, so that the institutionalization of these key functions cannot develop.

If there were a country where all of the characteristics listed above could be found simultaneously, then it is hard to see how a western management approach could be successfully implemented. However, no national system displays all of these features. Indeed, they may be universal--found in all administrative systems to some degree, and in all countries. Nonetheless, in certain Asian and African situations a number of these weaknesses can be found in an accentuated form: especially in the smaller resource-poor countries; in the field administration far from the provincial or national levels; and in the professional fields like agriculture or medicine or education in which the contrast between performance standards and what can actually be realized with a paucity of equipment becomes extreme.

If the above delineation of common bureaucratic weaknesses has any validity, it does suggest at least three main implications. First, these attributes of bureaucratic behavior have a particularly virulent effect in the context of the public professional services. For example, in medicine and in agriculture, any tendency of other officials to regard technical norms as being dramatic devices without substance has immediate negative consequences within the field programs. The achievement of common tasks by the field units is greatly complicated by the internal polarization of roles between professional versus regular administrative cadres.

Second, a majority of the above weaknesses are of *systemic* origin. That is, they express the aggregate choice of actors spread throughout the system; hence, they are not subject to easy alteration by individual actions, even when new recruits with different predispositions enter the system. Why then does the system not collapse from its own internal weaknesses? The answer is that while the above traits are "weaknesses" from the standpoint of the assumptions underlying administrative effectiveness within the Western managerial tradition, these same traits become organizational *strengths* in a social system. This helps to explain the extraordinary persistence of traditional bureaucratic forms under adverse conditions. The system retains the capability to perform certain social functions effectively, so that viewed from within, the organism appears in normal health.

Third, the prospects for achieving an effective transfer of Western managerial practice into such systems by training alone (or, for that matter, direct capital assistance such as the World Bank gives) appear slim. More "high-level management training" would not appear promising until we can specify what it is about these systems that seems to destroy the efforts of their own best men. Why are capable men in such societies so often frustrated in their endeavors, and why are so many well-intended efforts having so little field impact?

Some Causal Relationships

Adequate answers to this central question depend heavily upon one's diagnosis of the particular causes responsible for the administrative patterns caricatured above, as do also one's prescriptions as to where in this system transfer efforts should be directed. Let us take a second look at some of the more likely explanations.

First, it is undoubtedly true that much of the present fabric of administration reflects strands woven in the colonial situation: represents, indeed, the predictable consequence of such experience, and is not surprisingly found almost everywhere throughout the ex-colonial Third World. In comparison with their home-based equivalents, the colonial officials retained most critical functions--planning, coordination, and control--in their own hands at the top. Initially, of course, they had no alternative; later these distortions had been subsumed already into the usual functioning of the administrative structure. There were new stresses when almost all top managers were replaced after independence, a gigantic experiment in very difficult circumstances, whose success is a tribute to most ex-colonial regimes. Some argue that the administrative system has been the most stable and successful feature of post-independence Africa.

Second, management has been the missing function in the education of the service professionals (doctors, agriculturalists, engineers,

and resource scientists), just as rural development has been the missing sector in management education. There would appear to be much scope for enlarging the actual managerial content of such training.

Third, the extreme situational constraints affecting Third World administration can certainly explain some of its limiting features. The lack of educated manpower, of communication facilities and office supplies, are among the obvious deficiencies. Observers from the industrialized nations tend to ignore the cumulative impact upon the system as a whole of acute scarcity of most basic and critical components of a supportive infrastructure the West takes for granted. This is most evident in the poorer, socialist nations.

Fourth, the above circumstances encourage the "hub-and-wheel" pattern for managerial control. The fastest and most efficient managerial tactic in the colonial situation was for the individual officer to provide all the complex and abstract functions of administration himself. Any complex task was reduced to a set of rudimentary and specific instructions, which the "center-post" official could then pass individually to a ring of poorly trained subordinates, each of whom bore only limited responsibility not requiring much lateral communication (i.e., the spokes of the wheel). By dint of great effort, he was sometimes able to achieve quite remarkable results, considering the scarcity of resources and the unreliable quality of subsidiary staff. On simpler tasks, requiring mainly one-way communication, the "wheel" pattern of communication is perhaps the most efficient form.

Nevertheless, despite its stability and apparent successes, it has numerous long-run weaknesses if employed as the structural basis for all kinds of task integration. For one thing, the motivation and involvement of the subsidiary actors (the rim of the wheel in our metaphor) remain low. All the experience, power, and satisfaction accrues to the center-post position, none to the periphery. This structure does not perform well in situations where problem-solving is required, and where two-way communication is necessary. It seems to forestall the possibility for large-scale activities, since the pattern does not allow for much internal delegation and specialization beyond the first steps of task assignment. When the center-post man becomes old, or is promoted, there will be nobody beneath capable of assuming his functions; someone else in his image must be found, and the whole cycle repeats itself.

This pattern for task accomplishment was characteristic of the best colonial officers; it was also, incidentally, Henry Ford's preferred mode of action within his vast automobile company. The tendency to continue this form of administration as the predominant mode for control is strongly reinforced in contemporary Third World settings. The "wheel" communication pattern is congruent with the prevailing conceptions of

authority in many areas. Thus the administrative system's extreme structural resilience grows out of the substantial access to power that these minuscule hierarchies offer to a fairly large minority of actors (the center-post occupants) who hold the many senior positions interlaced at all nodes throughout the highly differentiated network. For them, administration is an exciting and rewarding experience. Furthermore, almost everyone controls and gives orders to somebody else except at the very bottom level. We should not forget, however, that one-person-controlled companies still exist in the Western world, and some of them compete quite effectively with even the largest corporations on certain types of tasks.

The preceding comments are hardly exhaustive. The resource-poor tropical countries of Africa seem to share a common style of administration that is neither entirely non-Western, nor fully explicable in terms of each country's unique culture heritage. Furthermore, this pattern of administration has shown sufficient resilience to render ineffective many externally induced managerial innovations. But we should realize that these "weaknesses" have, paradoxically, rational causes subject to analysis and informed action. At a minimum, a comprehensive understanding *from the inside* of how these systems work would seem to be an essential starting point for future attempts at managerial innovation in Fourth World contexts.

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A "Negotiating Model" in Integrated Rural Development Projects

Eric J. Miller

[Neither a "top-down" nor a "bottom-up" approach to rural development is wholly satisfactory. This article proposes the alternative of a negotiatory relationship between government and rural villagers, and examines the ingredients of its successful application in a Mexican project.]

Efforts at rural development in Third World countries have generally not been crowned with success. Indeed, for some "beneficiaries" the results have been disastrous. For example, peasants who have been persuaded to abandon subsistence farming for a single cash crop such as cotton may prosper for a while, but two or three successive years of infestation or depressed world prices can force them off the land. In other cases the innovation just disappears and the peasants return to the *status quo ante*. Large numbers of rural drinking water systems, for example, which are proudly inaugurated as a contribution to villagers' health and welfare, are out of use within a couple of years, apparently because the local communities lack the skill or will to operate and maintain them.

Our response to these failures has been to move away from isolated crop improvement projects or health projects towards programs of integrated agricultural development and, in a few countries, integrated rural development. Such a program involves a wide range of interventions and investments in farming technology, rural industry, credit, commercialization, road-building, transport and other areas, designed to bring about economic advancement; and alongside these, projects concerned with nutrition, health, housing, education, and so forth, intended to improve the quality of rural life. On paper,

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at least, this "total system" strategy looks capable of bringing about the massive transformation that is required; and on paper, too, the achievements can seem impressive in terms of the numbers of wells dug, hectares irrigated, schools built, and so on. But all too often in the process of implementation the concept of integrated development gets lost. Objectives are confused; methods are inadequately worked out; government agencies find it easier to compete than to collaborate; officials are incompetent or corrupt. As a result, the experience of the recipients is often of isolated and even capricious actions, which seem unrelated to each other or to local needs. Programs such as these therefore risk becoming more elaborate and costly mechanisms for producing the same failures as before.

The Government of Mexico introduced its integrated rural development program known as PIDER in 1973. It was a large and ambitious undertaking, ultimately intended to reach some 20,000 rural communities with 300 to 3,000 inhabitants each. Between September 1973 and November 1976, I worked as a part-time consultant to the Directorate of Public Investments, which was the division within the Ministry of the Presidency responsible for establishing and administering the program. Initially, the Directorate was seeking advice on the major organizational problems posed by the program, which called for the coordinated intervention of many different federal ministries and agencies at state and local levels. Since organization is a means of carrying out a task, we had to consider what the task of the program was. Each agency had its own specialized activity--roadbuilding, rural electrification, irrigation, soil conservation, setting up village health centers, and so on--and all of these could be seen as potentially contributing to rural prosperity and welfare. But the critical word is "potentially." These new installations and projects were no doubt necessary conditions for development, but they were not sufficient conditions. They would contribute to development only if the rural communities themselves were able to use them and build on them. At that stage, therefore, I saw the task of the program as "to procure a self-sustaining process of rural development." The problem was to identify the kind of relationship, at the interface between the "developers" and their "client systems," that would enable this to happen, and then to provide the conditions for the developers to take up appropriate roles. This was my main preoccupation over the next three years.

From my initial discussions in Mexico City and visits to the field, it rapidly became clear that, sometimes explicitly but often implicitly, two conflicting models of the development process were operating. These can be summed up as "top-down" (Model A) and "bottom-up" (Model B). Seldom did they appear in practice in a pure form, and indeed the same individual might seem to oscillate between them--perhaps voicing a Model B philosophy while acting on Model A assumptions. However, the confusion was not only his: he was expressing something of the multiple and con-

flicting objectives of the rural development program that are familiar in Mexico and elsewhere. At the risk of stating the obvious, the distinctions nevertheless seem worth spelling out.

Model A: Top-Down Development

Increased agricultural production is a significant objective in all national programs I know of. The document stating the objectives of the Mexican program was careful to point out that this was a means of enhancing rural prosperity rather than an end in itself; but not all the participating agencies would regard this as a meaningful distinction. Increased production is certainly a national objective--in order to feed the growing urban population, reduce imports, and earn foreign exchange from exports--and it is an explicit part of the mandate of the Ministries of Agriculture and of Agrarian Reform. That, then, is the message that these ministries' officials, experts, and extensionists carry with them when they go into the field. They tend therefore to behave as if the primary task of the program is to develop and organize rural communities so as to meet national production goals. From this it follows that the local community and the population of peasant farmers within it is conceived as a subsystem within a national production system.

There is a close analogy here with a commercial holding company seeking a return from its investments in subsidiary companies. And indeed it is noticeable that this formulation of the objectives is associated with the application of principles of scientific management to community development: typically, attempts are made to organize each community according to a standard type of democratic, participatory system that requires a collective structure, election of office-holders, division of labor, definition of functions, delegation of responsibilities and authority, and use of incentives. An underlying assumption of Model A is that there is a substantial consistency between governmental economic objectives and rural community needs. National programs to achieve these objectives will benefit communities by increasing their prosperity. The orientation is technocratic: the experts know what needs to be done. Accordingly, any resistance displayed by the communities is irrational: with education and persuasion they will come to see that their own self-interest coincides with the national interest.

Model B: Bottom-Up Development

It is always a stated objective of rural development programs to rectify gross inequalities of wealth; and one does not need to be a Marxist to recognize that much rural poverty (though by no means all) is a consequence of historical subjugation which has generated demoralization, apathy, fatalism, and submissiveness. People are trapped in a cycle of deprivation from which they feel incapable of escaping and have given up trying; they do not perceive themselves as having any

choices. Following from this diagnosis, the primary task of Model B can be stated in some such terms as these: "to restore the self-confidence that will release energy and motivation for self-development," as stated by Paulo Freire (Cultural Action for Freedom, 1972). His starting-point is a process of adult education which enables the peasants to examine and question the situation they are in. They learn that their impotence is a consequence not of inherent inferiority but of historical processes. These are reversible. Government aid is not a privilege that they should feel grateful to receive, but something they have a right to demand, even to fight for. In effect, the postulate is that they need to engage in something equivalent to revolutionary activity in order to regain a sense of potency and thereby to release energy for constructive self-development. Model B can slide imperceptibly into revolutionary activity for its own sake: where the conflict of interests becomes total, the primary task is to destroy the oppressors.

Neither Model A nor Model B was operating in a pure form within the PIDER program. What I discovered from my discussions and field observations in 1973 and early 1974 was that there were more signs of the top-down than of the bottom-up model, but that in fact one could identify the emergence of a third model, which was a kind of compromise between them. Official program policy listed the following criteria for selecting investment projects:

1. Highest priority should be given to productive projects which guarantee large-scale permanent employment...
2. In the social field, the drinking water, health, education and housing projects should foster a positive change in way of life and, still more, a necessary change of attitudes.
3. Priority will be given to complementary projects which strengthen the profitability of investments already made.
4. In all cases an attempt will be made to satisfy the needs expressed by the people, and projects will be carried out only at the explicit request of the communities.

Elsewhere in this policy document, issued in April 1973, there was emphasis on promoting participation, "so that a mechanism can be established which permits planning from the bottom up." Community representatives were to be involved not simply in planning local developments but in the design of regional strategies.

The intentions sounded admirable; but unfortunately a development program is influenced less by good intentions than by the structure and culture of implementation. Usually there is strong pressure to act, and to act quickly, as if inequities that have been condoned for generations should now be put right overnight. The dilemma of the Mexican program, as of others, was that although the importance of inculcating an ethos

of community self-development was recognized, the very process of undertaking a large and rapid investment in productive projects and amenities tends to put the community in a dependent posture, a posture which is antithetical to self-development.

Model C: Enlightened Paternalism

The model actually in operation can best be described as "enlightened paternalism." The strategic unit for development with the program was a "microregion." This would be identified on the basis of ecological and socio-economic uniformity and *prima facie* evidence of developmental potential. The average population was 75,000, and so it might contain 50-100 communities eligible for investments under the program. An interdisciplinary team of some 20 members, drawn from the various agencies involved, would make an intensive tour of the microregion. Each community would be visited, perhaps for half a day, in order to survey its resources and needs and to identify possible projects. Towards the end of the visit all the men in the community would be assembled, and the team would outline the projects it had in mind and ask for comments and alternative suggestions. Essentially that was the moment of participation. The team would subsequently assemble all the data from the field visits, devise an overall strategy for the microregion, make preliminary estimates of sums to be spent for various types of investment (e.g. road-building, soil conservation, fruit-growing), and then select the most deserving projects under each heading from the total range of possible projects that had been listed originally. These recommendations then had to be approved both by the headquarters of their respective agencies in Mexico City and by the central organization of the program itself. It would be at least six months later that the community would be told what projects, if any, had been earmarked for it.

Sometimes the microregional strategy had a discernible coherence; but often it seemed more like an aggregate of projects. At the level of the community, any concept of a development plan was rare indeed: investments and interventions seemed arbitrary and often unrelated to each other or to priorities that the local population itself might have set. It could be said that the "developers" were behaving as if the primary task of the program was to demonstrate the Government's good intentions. Their relationship to the communities was that of benefactor to beneficiary. They came equipped with a gift-list of projects that they could carry out, sometimes quite competently. Although they paid lip-service to the idea of bottom-up planning, this was for the future; in this initial phase the recipients were perceived as incapable of assessing the options open to them or of choosing among them.

Such arguments had some validity. It takes time and skill to help a community to formulate its needs. Many peasants were distrustful of the Government: promises had been made in the past but never translated

into action. Donation of, say, a drinking-water supply can give a community a feeling that it is being valued and help it to acquire some self-confidence. However, in some ways the integrated program was putting the beneficiaries into a more extreme position of passive dependence than some more conventional development projects that had been administered by individual agencies. Rural electrification schemes, for example, had required that part of the costs should be borne by the communities that benefited, and this encouraged each community to organize itself and to acquire some identity as a client system. Under the PIDER program such contributions were waived, and an incentive to organize was removed. The benevolent paternalism of Model C was therefore tending to hold the communities in the passive-dependent posture, and was doing little to encourage them to move into the more active, autonomous, entrepreneurial posture that was necessary if they were to become capable of self-sustaining development.

Model D: A Negotiating Model

My proposal was that the program needed to move towards a "negotiating model," which was in fact more consistent with its intentions. My thinking can be summarized as follows: Essentially the top-down Model A and the bottom-up Model B are both in a way right; the search for areas of consensus and compromise between them, implied in the enlightened paternalism of Model C, while it may have been necessary to gain sanction for the Program, was not the best solution for development. A Model D that overtly recognized divergences as well as commonalities of interest would be developmentally the most productive. The fact that a community comes up with an assessment of its own interests which does not match the assessment that a governmental agency has made does not mean that it has either to be blamed for its irrationality or praised for asserting its independence: it is simply a fact, and a predictable one at that. Correspondingly, the observation that the governmental agency is trying to implement policies that do not find local acceptance does not imply that one should either criticize it or sympathize with it. Although the Federal Government acts with the ultimate authority of the people in the service of the people, it will not please all of the people all the time. These facts, then, are not to be swept under the carpet: they are matters for examination and for negotiation. It is through such a process at the interface of community and agency that the peasant begins to find the meaning of his role as a citizen of the Republic, and begins genuinely to participate in planning for development; while the agency members for their part begin to question the relatedness of federal policies to local concerns. Both parties learn from the transaction. Assumptions get tested and modified. It is a process, in other words, that gives some reality to that over-used slogan, grass-roots democracy.

The primary task of Model D could be defined as "to provide resources to help each community to formulate, negotiate and implement

its own community development program." The first element of the model, then, is a community development program formulated by the community itself. This requires making available a consultancy resource through which the community can become aware of the possibilities for change. However, in designing a strategy for itself the community will need to take into account the development programs of neighboring communities and of the administrative district of which it forms a part, and the policies and resources of relevant Government agencies. So we have as a second element the concept of joint planning and programming. These lead to, third, the negotiation of a contractual relationship between the government and the community, in which each party undertakes to contribute resources to the community development program that has been negotiated.

Much of my work as consultant to the program from 1973 onwards was directed towards shifting from Model C to Model D. A fundamental change was required in the relationship between agency representatives in the field and the client communities. As I have indicated, these representatives were seen, and to some extent saw themselves, as benefactors; the community was the recipient of bounty. The agency representatives had the resources; the community had none. The representatives had the power to give or withhold projects according to their picture of whether the recipients could make effective use of the investment in them; the community had no control over this process. The transaction was one in which the situation was totally defined by the agency representatives while the community remained in a passive and dependent role. My observations revealed, however, that the authority and power of these officials in the field were mythical. The real power lay with their agency superiors in Mexico City. Indeed, the relationship between these superiors and their field representatives corresponded almost exactly to my description of the representative-community relationship. My proposition was that the administrative system, and the nature of these representatives' authority or lack of authority within it, had a determining influence on the nature of the development process through which the representatives related to the client communities. Unless the field representative could exercise authority in negotiation (instead of having to refer all decisions to his superiors), the community was unlikely to discover its own capacity to do so. The same applied to relations between agencies: to expect that the peasants would organize themselves for collaboration was hardly realistic so long as the participating agencies themselves had not learned to work together toward a shared objective.

Besides helping to introduce specific organizational and administrative changes that would push or pull authority outwards from the center to the field, my role had an educational component. I was trying to teach my clients about systems. The task of the development process, as I saw it and still see it, is to produce robust self-managing systems.

Any potential intervention has to be evaluated for its systemic consequences; and, as the negotiating model suggests, the nature of the relationship between development agency and client may be more significant for development in this sense than the content of specific projects. In this I was challenging the conventional wisdom not only of Mexican government agencies but international funding bodies, such as the World Bank and the Inter-American Development Bank, which, even in an integrated rural development program, call for an economic cost-benefit justification of each project and insist on the lowest-cost alternative. With such requirements one should not be surprised at the number of rural health centers which look impressive in the statistics but remain unused.

Ingredients of Successful Projects

With or without the benefit of my advice, the program was expanding rapidly. By the end of 1975 about 5,000 communities all over the country had received or were in the process of receiving investments under the program, and with some there had been contact for two and a half years. We had here a large-scale natural experiment in which it was possible to generate and begin to test hypotheses. As a start, I paid three short visits over the next few months to regions where the program was said to be showing signs of "success." The criterion I adopted was that there should be evidence of people beginning to manage their own development and, in particular, of reinvestment. For example, in one village, where a workshop provided employment and several cooperative poultry-keeping projects had been introduced, some of the income had been reinvested; but, more importantly, it was being used to finance new productive activities through purchase of cattle and of sewing-machines to make clothes for sale as well as for family use. In addition, a percentage of profits from poultry-keeping was paid into community funds, which were being applied to a children's playground and new public buildings. In another case, in order to provide permanent employment for landless laborers who had worked on road-building at the beginning of the program, a small sawmill was built with a contract to supply posts for rural electrification. This generated a substantial surplus which, with the agreement of the workers, was used to seed further rural industries. A collective organization was formed, and in little more than two years it had set up nearly 200 small enterprises providing about 1,500 new jobs. Control of the individual enterprises and of the corporation as a whole was vested in the workers, who were mainly women and girls.

From these and other cases it was possible to identify some common factors. Characteristically, a PIDER representative had exercised leadership in getting a client group to visualize a desirable and attainable future state, and to commit itself to taking the first steps toward achieving it. He had sufficient authority (sometimes reinforced

by political power) to commit contributions from the program, but these usually took the form of materials and technical assistance. The clients were expected to contribute labor to and often manage construction and other activities. He and/or members of his team were in frequent contact with the client group; this seemed to have an important function in sustaining the vision of the future before there were any concrete achievements. Thus there was a good deal of dependency, even charisma, in the early phases, but this was not a source of self-depreciation by the clients. The leadership role had been so managed that the hope and potency invested in it had been routed back to the clients in the form of a growing belief in themselves and their own capacity to bring about changes. They themselves were taking initiatives--taking over the vision, as it were--to which the representative was able to respond flexibly on behalf of the program. Explicitly or implicitly, the criterion he used was whether the proposal would enhance the clients' capacity for self-management; and so he might use program resources to back projects that would not always stand up individually to a stringent cost-benefit analysis. (He seemed to have the freedom to do this partly because of the savings obtained through high participation of clients in earlier projects.) Management and initiation of projects had required a repatterning of existing organizational arrangements in the client system or the emergence of new structures (such as the collective corporation). Finally, the changes in internal structuring seemed to be directly related to and contingent on changes in the relatedness of the client system to its external environment.

I found that these brief field studies had sharpened my insight into underdevelopment and therefore the processes of development. Underdevelopment could be defined operationally as a relative lack of control over relations with one's environment, where that includes both the local physical environment and the external environment that comprises the wider socio-economic-political system. Specific aspects of these relations--economic and other--can be identified, analyzed and sometimes measured. Development, then, implies a change in such relationships in the direction of influencing and controlling the environment, instead of being controlled by it--a change from impotence towards potency. Following from this, I could assert much more unequivocally that *the primary task of a development program is to help the client system to increase control of its environment*. That furnishes the criteria for effectiveness; that is the task for which the development agency needs to organize itself.

Four aspects of this task may be identified. Two of these are familiar enough; but I suggest that the significance of the third, and, in particular, the fourth is insufficiently recognized.

The first aspect is development of the human resources of the community. It is obvious that education can inculcate new techniques and

skills; literacy gives access to alternative values and goals. Similarly, improved nutrition and health can release greater energy for existing and new activities.

The second aspect is enhancement of the physical resources of the community. This is the objective of many development agencies, which, as we have seen, often measure their performance by the number of wells dug, health centers constructed, households provided with electricity, etc.

However, as with the example of drinking-water systems, installation is not synonymous with utilization. These projects, therefore, are to be regarded only as means, not as ends in themselves. The criterion of effectiveness lies in my third aspect: have they helped the community to extend its control over its physical environment? An extensionist may work hard and successfully to arouse enthusiasm for a new agricultural technique, which really seems to be moving the boundary between the farmers and their physical environment; but after two seasons of successful operation with markedly higher yields, the farmers regress to previous methods. Sometimes this is simply because the extensionist has failed to ensure that supplies of the requisite seeds and fertilizers will be readily available. Sometimes it is because he has misjudged the goodness of fit between the innovation and the prevailing culture. Extensionists may also ignore the pragmatic wisdom of peasant communities that has enabled them to survive. (P. R. Jennings, Scientific American, Vol. 253, No. 3, 1976.) They are not interested in crops that produce a very high yield but only in good years; the varieties they have learned to trust are those that will minimize the chances of a total crop failure in the bad years. But often the most plausible explanation in such cases is simply that the farmers have not acquired the skill to manage the new process themselves; they have been dependent on the extensionist, so that only his continuing presence has permitted the innovation to be sustained.

So I come to the fourth aspect: that the community will not achieve greater control of its local physical environment, or the achievement will not be sustained, unless the change is also accompanied and reinforced by corresponding and more permanent changes in relations with the external environment. The community also needs to become more autonomous and influential in managing these relationships. Many of these changed relationships will be economic: for example, the community sells produce instead of exporting manual labor; it sells its produce in processed form instead of selling it unprocessed (for example, cheese instead of milk); it diversifies its products; it extends its control over distribution and so commands higher prices; and so on. Obvious though these points may seem, it is surprising how often they are missed, even in supposedly integrated development programs. Extensionists promote higher yields without considering the process of commercialization, so farmers have little incentive to increase output if all

the extra profits go into the pocket of the traditional middleman. Nor is a government purchasing agency always a viable alternative. R. Ackoff, writing on development planning in the Mexican context, cites cases of agency employees being bribed by the middlemen to reject farmers' offerings, which were then sold to the old buyers at depressed prices. (Operations Research, Vol. 25, 1977, p. 207.) Farmers may therefore need to be helped to establish their own cooperative marketing arrangements, by-passing the middleman, if they are to get a proper return.

Along with such economic gains, a less obvious, more subtle and more significant change seems to occur: a change in the community's identity and self-image. As a result, for example, of bypassing the old channels and managing distribution themselves, the people acquire a different--more potent--image in the external environment, and this in turn reinforces an emerging image of themselves as more potent, both collectively and individually. In one of the villages mentioned above, several different family enterprises were engaged in poultry-keeping. Among themselves they organized their production cycles so as to maintain a steady overall output, and in the market of a nearby town they manned a stall to sell the dressed chickens. The stall bore the name of the village and quickly acquired a reputation for quality and reliability. This in turn helped to sustain the collaborative arrangements, and was quite evidently a source of pride and added self-confidence in the village as a whole. In this way, technical and structural changes become confirmed by a cultural transformation. The outcome, then, is a system that has discovered the possibilities of exercising autonomy and choice and has become capable of managing itself in a self-sustaining process of development.

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COMMUNITY NURSE IN KOLLADUBA,
ETHIOPIA, VISITS HOMES TO SHOW
MOTHERS HOW BEST TO CARE FOR
THEIR FAMILY'S HEALTH. (PHOTO:
U.S. AID)

The Role of the Community Health Worker in Primary Health Care

World Bank Staff

[The provision of adequate health care in developing countries encounters budgetary, administrative, cultural and a myriad of other problems. Increasingly countries are turning to Community Health Workers (CHWs) as a means of extending health services to underserved areas.]

A key element of primary health care, or of any health care system that attempts wide coverage at relatively low cost, is the use of community health workers (CHWs) with limited training, both to provide front-line services and to refer seriously ill patients or special cases to larger dispensaries and hospitals. The potential duties among which their time must be allocated are maternal and child health care, mid-wifery, family planning, treatment of injuries, and helping to move seriously injured people to referral facilities. In addition, they may organize immunization and mass treatment programs, provide guidance on nutrition and hygiene, as well as monitor epidemics, water quality and sanitation.

China illustrates the fact that widespread primary health care is feasible even for low-income countries, although it makes heavy administrative demands. An effective coordinated approach is needed--involving careful selection and training of CHWs, thorough supervision, referral of serious cases to better trained and equipped people, and adequate (but controlled) availability of drugs and other supplies. Without this, CHWs are likely to become demoralized, discredited and

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inefficient--and their recommendations for curative and preventive care disregarded.

Moreover, the emphasis that many current reports give to primary health care should not detract from the importance--or understate the difficulty--of striking the right balance between community level activities and the back-up system that provides referral services and supervision. Rural health centers, urban clinics or small rural hospitals should deal with various illnesses that are beyond the scope of a CHW. These should come under the umbrella of a referral hospital with laboratory, x-ray facilities, an operating room and beds. Depending on population densities, transport, and incomes, such a hospital could serve 100,000 to 250,000 people and oversee the activities of three or more clinics and about 50 CHWs.

Lessons of Experience

National experience with primary health care systems is still very limited. The Chinese barefoot doctors date from the mid-1960s. During the 1970s countries as diverse as Iran, Brazil, Sudan, India, Jamaica, Botswana and Tanzania began large-scale systems. Their experience has shown which are the key requirements of success.

• Political support and finance. It is vital to secure the support of a substantial share of the country's "health establishment;" without this, sound medical supervision and adequate finance will not be possible, and primary health care will be little more than an empty gesture toward the poor. It is also important to ensure that this type of medicine is not mislabeled as "second rate."

The CHW should work cooperatively with the community, if possible through such recognized organizations as the local council or village development committee--as in Botswana and Sudan. This builds community support and increases chances of improving family health practices; hours of service, use of drugs and materials, and patient satisfaction can also be monitored. The community organization should have access to the supervisor of the CHW.

At least part of the CHW's salary should be paid by government so that health officials can retain some control. But some local finance or voluntary efforts also make the CHW responsive to local concerns--and in turn can make the community more aware of the services offered. The government of India is providing a stipend of 600 rupees a year (\$76) to "volunteer" health workers. Whether local pressures work in the interests of the poor depends on the degree to which the local political system reflects these interests. China has succeeded in making the community entirely responsible for compensating the CHW. But overreliance on local finance may mean that the poorest communities get the worst attention.

2 Recruitment and training. The CHW should be mature enough to enjoy the respect of the community. Early programs stressed formal education as a qualification for the CHW, and thus recruited young people. Reviews of experience in Sudan clearly indicate that such people are not easily accepted by communities. Ideally, the CHW should have children and personal experience with health crises. Programs now recruit highly motivated older people, even if younger applicants are better educated. The CHW also should live in the community; this has been found to reduce turnover as well as ensure familiarity with local culture. In some countries, such as Iran and Yemen, it has been necessary to train both a male and a female CHW because of objections to treatment by members of the opposite sex.

Community health workers must be given enough training, equipment and supplies to ensure that only one patient in four or five is referred to higher levels. High referral rates undermine the community's confidence in the CHW and also increase the probability of patients bypassing him or her. This conclusion has been confirmed by studies in Mexico and Thailand. Moreover, several countries feel that CHWs should have the chance to develop their careers by competing for entry into higher grades. Sudan, for example, is planning to confine its "medical assistant" training programs to CHWs.

* Supervision and supplies. Frequent supervision of the CHW is essential. The isolated, modestly trained CHW is rarely confident of his or her skills and often encounters difficulties that instructors did not anticipate. Supervisors should both provide in-service training and ensure that performance meets minimum standards. Iran, Sudan and Botswana have found that under-supervision risked undermining the confidence and credibility of the CHW. Workers should be visited regularly by staff from neighboring dispensaries, health centers and hospitals as well as from the office of the regional medical officer. This compensates for frequent transport difficulties or competing demands on the supervisor's time. In addition, it ensures that a broad range of issues --from clinical care to drug management--are considered, and that visits from the outside are regarded as routine, not part of a crisis.

Providing facilities for telephone or radio contact between CHWs and supervisors has provided backup and helped avoid unnecessary referrals in Honduras, for example. Physicians or highly trained health personnel often give curative work priority over supervision of CHWs--so nontechnical personnel should also play a part in the supervision and monitoring of CHWs.

A standard, simple set of drugs should be provided to CHWs; if budget cuts are necessary, they should not fall on medicines and supplies for the CHW (as has sometimes been the case). Standards are required for the use of drugs and supplies; and the drugs provided to individual

CHWs should be monitored to identify misuse or misappropriation. Kenya has developed a model program for managing drug use, based upon carefully devised treatment standards.

Other Considerations

Higher-income countries can afford to reduce the ratio of persons covered per hospital and clinic, and to staff and equip them better. But even in industrialized countries, there is a strong trend toward more emphasis on paramedical workers to improve the spread and effectiveness of basic health care and to help keep costs down.

In many countries it is also desirable to make use of, and provide some training for, traditional health practitioners, such as "ayurvedics" in South Asia and the traditional birth attendants found in almost every country. This is partly because they often have the trust of their patients and because patients pay for their services--enabling government funds to be spread farther; but it is primarily because in many countries, including some of those where the world's poor are concentrated, these practitioners provide near-universal coverage of people who, realistically, will not be reached by effective government health programs for some time to come. Training can help them to improve their treatment, dispense some modern medicines and participate in health or family planning education.

In addition, there is still an urgent need for research to develop measures to prevent or treat common disabling diseases--for example, malaria, schistosomiasis and the main causes of diarrhea in children--that are simple and cheap enough to be applied within the framework of a primary health care system.

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The Village Health Worker Program in Afghanistan

Steven L. Solter and Peter N. Cross

[This article describes the questions of policy and operation encountered during a program for training and placing health workers in villages in Afghanistan, and the answers that were found for these questions. While the program was cut off before long experience had accumulated, the issues that arose are of interest for other countries.]

The Afghan Ministry of Public Health (MOPH) first considered the idea of village health workers (VHWs) in the fall of 1973. Early discussions between high-level MOPH officials and AID advisors suggested that the only way Afghanistan could provide accessible primary health care to the majority of its population living in 23,000 villages, many of them very remote, was by training large numbers of VHWs. But this was not an idea easily acceptable to senior Ministry staff.

Most high-level Ministry officials at that time were urban physicians who had had relatively little experience with village health problems. The central idea of the VHW--that villagers choose someone from their village with minimal education to be trained in a brief course in a nearby basic health center (BHC) and return to the village to treat common medical problems and provide basic health education--was a concept foreign to Afghan doctors and Ministry officials and was not immediately welcome. Gradually, as the Chinese "barefoot doctor" became better known, as Afghan Ministry officials were invited to international conferences on village health workers, and as WHO's position supporting primary health care became clear, the atmosphere in Kabul grew more supportive of the idea. The MOPH also realized that the major international donors (AID,

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WHO, and UNICEF) were firmly committed to extending health care to villagers through the use of VHWs.

Thus, in the spring of 1976, the Ministry and AID decided to support several "experiments" in creating an alternative health delivery system. A survey conducted in Baghlan, Ghazni, and Helmand provinces in 1976 documented the degree of interest; of the 723 villagers interviewed, 90 percent felt that a VHW program was feasible for their own village. Most believed that villagers themselves should select their own VHWs. The majority of respondents also felt that VHWs should be literate and could be either male or female. Although the survey results did not seem to interest most MOPH officials, the fact that the great majority of villagers supported the idea of VHWs was useful information for those few individuals in the Ministry who were interested in the program. Once the MOPH was convinced that a VHW Program should begin, it sought and obtained approval from the Afghan cabinet in April of 1977 for a program to train 1,500 VHWs throughout the country by 1982. These 1,500 VHWs would provide basic coverage for about 10 percent of the rural population; for full national coverage some 15,000 would be needed eventually. Funds for training, per diem, supplies, and each VHW's initial stock of drugs would come from UNICEF; technical assistance was provided by AID.

The first group of eleven VHWs completed training May of 1977; between that time and January of 1979 when the program ended, a total of 137 VHWs were trained. The new pro-Soviet government that took power in Kabul in April of 1978 decided to eliminate the VHW program for political rather than technical reasons. New advisors urged the Ministry to stop training workers similar to the Chinese "barefoot doctors." They argued that health workers similar to the Soviet *feldshers* should be trained instead. Even though *feldshers* were inappropriate for providing health care to Afghan villagers since they came from the city, were not chosen by the villagers, and were based in fixed health facilities at a great distance from many villages, the MOPH decided to accept the Soviet advice. In September of 1978, there was an International Conference on Primary Health Care (sponsored by WHO and UNICEF) held in Alma Ata, U.S.S.R. The leader of the Afghan delegation was the Deputy Minister of Health, an inexperienced 26-year-old nephew of the then Foreign Minister, later President, Hafizullah Amin. Prior to the Alma Ata meeting, the Deputy Health Minister was a strong public supporter of VHWs; when he returned from the meeting, he was determined to destroy the program.

This, then, is the short history of the training of village health workers. Although the program's termination prevented the results of this effort from being observed for very long, many of the issues arising and their solutions are of interest.

VHW Program Development

How would the VHWs be chosen? It was generally agreed that VHWs would be selected by their villages, but there remained several options as to guidelines for selection. The MOPH could insist that all VHWs chosen by villagers *must* be already practicing traditional healers. This would have two advantages: if only indigenous practitioners could become VHWs, then Afghan doctors would be less likely to oppose them, because their training would merely enable them to do better than which they have already been doing anyway. The second advantage would be the fact that villagers were already visiting them for health reasons, and their upgraded status would simply help them be more effective in changing health habits. There would also be disadvantages in requiring VHWs to be former traditional healers. For one thing, it would greatly limit the freedom of choice of villagers. In addition, traditional healers could be reluctant in many ways to make fundamental changes in their practices; a barber who has made his living by doing minor surgery for 30 years may not readily adjust to a different philosophy of health care.

The second option was to allow the villages complete freedom to choose anyone they wanted to be their VHW. This, of course, could result in close relatives of village leaders being chosen, but it would allow villagers to take a more active role in making those decisions which affected their lives. The third alternative was to strongly suggest to villagers that a traditional healer be chosen as their VHW, but not make it compulsory. Also considered a strong contender for the VHW role was the local village shopkeeper, or *dokhandar*. The *dokhandars* knew how to maintain their supplies, were centrally located, were open long hours, and could be trained to give health advice and sell basic drugs for common conditions.

The MOPH finally decided to leave the ultimate VHW choice completely up to the villagers.

Setting minimum qualifications. Several issues had to be clarified before rational minimum qualifications for VHWs could be determined. First, if the villagers were responsible for selecting their VHW, then any minimum qualifications set by the MOPH would interfere with the villagers' freedom to choose. However, if each village chose whomever it wanted without paying attention to minimum standards, was there then a risk that the *Khan's* feeble-minded son might be chosen? Without a requirement for literacy, for example, each VHW class might consist of both literates and illiterates, greatly complicating the training process. This fundamental dilemma was resolved by the MOPH by providing guidelines but respecting the final decision of the village even if some of the guidelines were violated. The major guidelines were that the VHW should be:

Functionally literate;
Older than 18 years;
If male, finished with his military obligations;
Able to spend at least 4 hours per day as a VHW;
Accepted by all major factions in the village;
Dedicated to serving his fellow villagers;
Intelligent and honest;
Respected by his fellow villagers.

Another crucial issue concerned the sex of the VHW. Ministry officials concerned with establishing a VHW program recognized the fact that a female health worker was more likely to influence village child-care and child-feeding practices (as well as contraceptive behavior) than would a male health worker. However, the female VHWs might not be allowed to leave their villages for training, were not likely to be literate, and being illiterate would not be good candidates for providing basic drugs (Afghan physicians were likely to violently oppose illiterate village females distributing any kind of drug whatsoever). The MOPH at first considered allowing literate female VHWs to have drugs, but there were too few literate village women available. Instead, the Ministry decided to train men as VHWs in the areas of basic curative care, environmental sanitation, and personal hygiene and to simultaneously train traditional village midwives (*dais*, who were largely illiterate) in the areas of maternal/child health (MCH) and family planning. In this way, a basic team consisting of a VHW and a *dai* could provide the essential primary health-care services at the village level, easily accessible to the great majority of the population.

Skills and competence: It was important to define the context in which the VHW would function in order to determine the skills and competencies he or she should possess. Since the major health problems of the village were considered to be preventable morbidity and mortality in children under 5 (as well as uncontrolled fertility), blamed partly on certain long-standing unhealthful habits, it was felt that a trained VHW would be most effective by trying to encourage changes in these habits. Some of the most important practices and beliefs that the Ministry felt were detrimental to village health are listed below:

- Infants were usually fed only breast milk until 24 months of age, with little supplementation.
- Infants and young children with diarrhea were not rehydrated by their parents.
- Sick children were usually given inadequate fluids and not fed properly because of traditional beliefs concerning diet and disease.
- Any flowing water was considered safe for drinking.
- Most villagers did not wash hands with soap and water

- prior to preparing food, before eating, or after defecating.
- Flies and feces were ubiquitous and constantly contaminating food and water.

Based on these observations, it was clear that the VHW curriculum would have to stress practical approaches to health education, nutrition, personal hygiene, and environmental health. In addition, VHWS would have to be able to provide effective contraceptives (for the first time in any Afghan government-supported program) as well as basic drugs for common complaints. Another essential would be to distinguish those patients whom the VHW could treat in the village from those patients needing referral to the BHC. Underlying all was the importance of the VHW serving as a model by practicing those health habits which he or she was telling others to practice.

Training was fixed at 3 weeks (6 hours per day, 6 days per week), but only after substantial debate among MOPH officials. Several officials contended that if the majority of Afghanistan's 23,000 villages were to have a VHW within a reasonable period of time, the length of training would have to be kept to a minimum and the cost held down. They argued that a 2- or 3-week period was long enough for the essential skills needed to substantially reduce preventable child mortality; further training could be given later in the form of short, intensive continuing-education courses. Others, however, suggested that in order to persuade Afghan doctors that VHWS possessed minimal skills, a longer period of training was essential. They felt that a villager who had had a limited education (4 years, for example) and who had completed his education in a village school 10 years before would need a certain minimum time to become adjusted to completely alien ways of thought. Many VHWS would probably have been indigenous practitioners in their villages, and it takes time to train such workers to be able to effectively combine traditional and modern medicine. The final decision, favoring the short course, was based primarily on the overwhelming numbers to be trained and the very limited resources with which to accomplish such an enormous task.

Drug-dispensing--would VHWS dispense drugs? A major area of disagreement was the potential impact of this decision on the opinion of Afghan physicians. Some MOPH officials felt that a few key drugs (such as oral penicillin or a glucose electrolyte mix for diarrhea and dehydration) could be lifesaving in remote villages where bacterial pneumonia and dehydration were leading causes of death in children under 5 years of age. They argued that without such essential drugs, the likelihood of the VHW having a significant impact on child mortality was minimal. Villagers were mostly interested in drugs for the relief of illness; a VHW whose capabilities were limited to advice on how to live in a healthy manner would be ignored, even shunned. These officials suggested that VHWS who could provide basic curative care for common

conditions would be much more influential in changing harmful health habits than would a VHW who was not able to treat those who came to him or her.

An opposing group within the Ministry argued that if the VHWs were allowed to dispense drugs, this would be so threatening to the Afghan doctors (since the self-image of Afghan doctors is largely that of someone who prescribes drugs) that the program would be doomed. In addition, all drugs can cause side effects and complications; if a villager were treated by a VHW and the treatment were followed by some untoward reaction, the villager would blame the VHW and the program could become discredited. Furthermore, drugs must be continuously resupplied. If the MOPH has difficulty supplying 120 BHCs with drugs, how would it ever be able to supply 15,000 VHWs on a continuous basis? It would be better for a VHW to have no drugs than to have drugs initially only to run out of them later. A final argument of this faction was that to allow VHWs to prescribe drugs would mean that, in effect, the VHWs would do very little other than curative care, since the villagers would be far more interested in drugs than in health education and there would be almost no incentive for the VHW to provide any preventive services.

Consensus was finally reached to allow the VHWs to prescribe drugs, but whether they should give injections was an emotion-laden issue. It was recognized that villagers generally prefer injections to tablets, capsules, or syrups (the more painful the injection the better--if it hurts, it must be good); if the VHW were to have any status or respect in the village, it was essential that he or she be able to give injections. It also was recognized that nearly every village has an untrained injectionist whose technique is likely to be decidedly unsterile; if the VHWs did not give injections, then villagers would surely seek that service from the local injectionists. It was thus decided that VHWs should be taught how to give injections using sterile technique, although they should not be provided any injectable drugs by the MOPH. Only oral drugs would be provided to the VHWs.

Further debate led to the following list of drugs that VHWs could prescribe. All were to be prepackaged in course-of-treatment dosage packages.

- Tetracycline eye ointment (to be used topically for conjunctivitis and for the early stages of trachoma);
- Aspirin;
- Penicillin V (oral, to be given only when the patient had a cough and a body temperature greater than 38°C);
- Oral contraceptives;
- Piperazine (for roundworm infections, which are extremely prevalent in Afghan villages);
- Ferrous sulfate with folate (iron, for anemia, which is

- particularly common in adult Afghan women);
- Multivitamins with iron (including vitamin A for xerophthalmia);
- Oral rehydration salts (a glucose-electrolyte solution for diarrhea and dehydration). Some VHWS also provided simple antacids and sulfadimidine.

These particular drugs were chosen because each of them was considered effective against conditions or problems that were an important cause of morbidity and/or mortality in the village and because each (with the exception of oral contraceptives) was quite safe, even when given in very large dosages. Even if a particularly avaricious VHW prescribed every different drug packet every day to everyone in his village, the resulting harm should be minimal.

The VHWS were unhappy with the fact that they did not receive an antidiarrheal drug. The glucose-electrolyte packets were for replacing vital fluids and salts lost from the body during an episode of diarrhea, but they could not *stop* the diarrhea. Afghan physicians prescribe antidiarrheals to young children with diarrhea (the favorite drug is Sulfaguanidine), and fluid and salt replacement are rarely emphasized to the parent. Consequently, a large number of Afghan children die from dehydration, even after being seen by a physician. But if the VHWS had been able to dispense Sulfaguanidine routinely in addition to the glucose-electrolyte packet, it is likely that they would have dispensed only the Sulfaguanidine since that was the drug that the villagers were used to, and dehydration in children would have gone uncorrected. Similar discussions and arguments took place with regard to all the VHW drugs. Those selected for inclusion in the VHW supplies were felt to be appropriate, both at the start of the program and after 18 months of field experience.

Program financing: The VHW was not salaried by the Afghan government, but would be allowed to sell prepackaged drugs at a small profit. There was very little disagreement on this issue. MOPH officials shared the view that the government was not prepared to pay VHW salaries from its meager budget, and recognized that international donors are usually very reluctant to pay salaries except as a temporary measure. All agreed that the VHW should be compensated in some fashion for his or her work, but felt that this support should come from the villages.

The rural health surveys had revealed a startling fact, that the mean annual personal-health expenditure in rural Afghanistan is seven times the government expenditure. This meant that 87.5 percent of all money spent on health care in Afghanistan comes out of the pockets of poor villagers, representing 7.4 percent of the annual household income of the average Afghan family. Closer examination of this household health expenditure disclosed the importance of drugs to the Afghan:

37 percent of his health expenditure goes into pharmacy drugs and additional money on traditional herbs and medicines. The willing expenditure for drugs suggested a means of support for the new village-based health program.

Since villagers were interested in having a VHW, and since they were willing to pay for drugs, the Ministry decided that VHWs could sell their drugs at a small profit (2 Afghani or 5 U.S. cents per packet). A village could supplement this income--by allowing the VHW to charge on a fee-for-service basis or by asking each household to contribute a certain amount in Afghanis per month--but this was to be decided by each community for itself. It also was generally agreed that each VHW should have some other job or means of support, that being a VHW should not be a full-time job.

Profile of VHWs trained: Most of the VHWs selected by the village committees can be divided into three groups. One group consisted of young, literate, underemployed men who were sons or nephews of members of the village committee. A typical member of this group might be a 24-year-old son of a prominent *malek* (landowner). The *malek* had three older sons to work his land, but there was not enough land to support his youngest son as well. This youngest son was then selected to be a VHW, thereby gaining some prestige and a small income for this part-time job. The second group of VHWs included *mullahs* (Muslim religious leaders) and shopkeepers, who were usually literate and respected in the village. The third group consisted of literate men who had been indigenous practitioners of some sort, most often as injectionists, herbalists, or bone-setters. Most of the VHWs selected were genuinely interested in the job of VHW.

Overall, of the 137 VHWs trained during the life of the project, the typical worker was male (only six were female) and about 34 years old. (The youngest was a 15-year old nomad, while the oldest was a 57-year old *mullah*.) He was literate and had probably attended school for about four years. (Many elder VHWs had acquired literacy through informal teachings of the local *mullah*; one elderly VHW was a retired military officer with a degree from a military college.) Eighty percent of the VHWs were married, and 91 percent had completed their military obligation. Over half the VHWs were "farmers."

Response of the VHWs to training efforts. The VHWs were extremely eager to learn and seized the opportunity with great enthusiasm. Many had read all 150 pages of their textual material by the second or third day of the 3-week training program. By the end of the program, many VHW trainees had nearly memorized much of the material through continual rereading. They frequently kept trainers after class to discuss their village's health problems. It would be hard to imagine a more enthusiastic group of students.

There was, however, a difference between the younger and older trainees in their ability to integrate what they were taught and to use their new knowledge in their village work. Supervisory visits after training to older VHWs (particularly *mullahs* and shopkeepers and those who had been injectionists or indigenous practitioners) revealed that they had difficulty changing some of their health practices. Younger VHWs, however, while not having health beliefs or practices of long standing that were resistant to change, were not as well respected by their fellow villagers as were their older colleagues. Thus VHW recruitment and training faced a dilemma. If younger VHWs were trained, they were much more likely than older VHWs to follow the principles and behavior patterns they had been taught; but their health-education advice was not as likely to be followed. Since the villagers themselves made the final selection of VHWs, the VHW training teams had to do the best job they could with whomever the villagers chose.

Curriculum and training skills. Fundamental to successful VHW training was the development of a simple, appropriate training curriculum designed to train literate villagers. A set of three manuals was developed (in the Dari and Pashto languages) to assist the VHW in learning basic skills and in performing necessary curative and preventive tasks in the village. By using the manuals, the VHW could "look up" anything he was unable to remember.

For example, if a VHW saw a patient with an eye complaint, he could look up eye problems in either his Reference Manual or his Field Manual. The Reference Manual discussed, in a clear and simple way, what kinds of eye problems were common in the village and what could be done about them. The Field Manual, in a more specific and concrete way, stated when an eye patient should be referred to the BHC doctor and when such a patient could be treated by the VHW in the village. It also listed several key points necessary for the prevention of eye diseases in villages that the VHW should explain to the patient. In addition, it listed exactly what should be done about treating eye problems.

The VHW curriculum initially emphasized the training of VHWs to perform those skills listed in the manuals. The curriculum was divided into the following areas: maternal and child health (and family planning), environmental sanitation, personal hygiene, nutrition, introduction to the human body and germ theory of disease, first aid, curative medical care, immunization, and organization of the VHW's job. Principles and techniques of health education and of working with community leaders (such as the village committee) were stressed throughout the 3-week course.

Practical work was to be given the highest priority; it became the most serious problem faced by the training teams. The plan was that VHWs would spend much of their training time actually *doing* the things

they would do on their own in the village, such as providing first aid, etc. But since the 3-week courses were conducted at BHCs, the trainers had to depend on patients at the BHC for all curative and first-aid teaching, and some BHCs had very few patients. If, during the 3-week course, no patients with burns or fractures came to the BHC, the VHW trainers were forced to teach the diagnosis and treatment of these conditions by lecture or demonstration using uninjured people. The training teams found, however, that by being imaginative with those patients who did come to the BHC, they could provide the VHWs with adequate practical training. Nonetheless, some VHW trainers were not very imaginative in making the training practical. They often preferred to lecture rather than to have the students actually practice those tasks which they would have to perform when they returned to their villages. This problem contributed to a decision to revise the VHW curriculum to help improve the quality of teaching practical skills to VHWs. The revised curriculum was completed, but the program came to an end a few months later.

The 18-month experience indicates that for a curriculum to be effective, it must be very specific and detailed; each point should be made clearly and distinctly, and examples of how that teaching point can be taught should be made explicit for the trainers. All trainers must themselves be trained in using the curriculum, preferably by both classroom teaching and on-the-job training. In order to use the VHW curriculum most effectively, the training teams, when in the field, must be able to purchase certain items (like locally available weaning foods) which are essential for teaching. The trainers must periodically have "refresher courses" themselves, so that their interest in the curriculum must be revised reasonably often, with the trainers providing the most important input. And finally, audiovisual and other teaching aids should be integrated with the curriculum in order to have the greatest possible impact.

Problems in finding an appropriate financing mechanism. After the Ministry decided to permit the workers to sell prepackaged drugs for a small profit (5 cents per packet) as well as to allow the village committees to decide on any other means of financial support for the VHW, it remained to be seen how this arrangement would work out in practice. Based on one and a half years of experience involving a total of about 130 VHWs, the following observations can be made.

None of the village committees were able to organize any system for financially supporting the VHWs. All the village committees were informed by VHW recruitment teams that they could allow the VHWs to charge a fee for service in addition to charging for drugs. The village committees also were told that they could require each household to pay a few Afynanis per month to supplement the VHW's income (as a kind of prepaid insurance scheme). When the village committees were

visited at a later date and asked why they did not take these steps, the most frequent answer was that they were waiting for the VHW to receive a government salary. Despite repeated denials that this would in fact take place, most village committees rationalized their lack of financial support by insisting that a government salary was absolutely necessary.

The profit from the sale of prepackaged drugs, in itself, did not provide the VHWS with sufficient income to support a family. The average VHW sold no more than 100 packets per month, giving him a \$5 monthly profit. Most VHWS, in addition, charged a small fee for giving injections and occasionally charged for providing first aid. Unless the VHW was able to earn substantially more money than this from some other job at the same time (such as farming or being a *mufti* or shopkeeper), he would have to quit being a VHW. What generally happened was that the men chosen to be VHWS either had no other job and had to be subsidized anyway by their relatives, or were relatively affluent and could spare the time to be a VHW in order to gain the status and prestige associated with the job. The complaint about receiving no salary was a persistent one, however, affecting VHWS and village committee members alike. At the time the decision was made to end the VHW program, a plan was under consideration in the MOPH to provide minimal monthly salaries to the VHWS, but they could not have been paid much under budget limitations.

The MOPH on several occasions considered increasing the profit per packet allowed to the VHW. However, when the VHWS in Jaghori were asked if they favored an increased profit, they said no. The Jaghori VHWS at that time had already been working as VHWS for a number of months and understood their financial situation quite well. They felt that some villagers in that very poor area could barely afford the medicine they were selling--despite the fact that the drugs they sold, supplied by UNICEF, cost the villager far less than the same drugs bought at a pharmacy. To raise the price per packet in order to give more profit to the VHWS would cause hardship. Also, such a rise in price would harm the very positive image the VHWS had acquired in their villages. The Jaghori VHWS might have reconsidered their decision at a later date, but they never had the opportunity.

Despite the frequently expressed fears of MOPH officials and others that the VHWS would cheat by either charging higher than allowed rates for their drug packets or else selling their UNICEF drugs to pharmacies at a big profit, there is no evidence to suggest that either was a common practice. Pharmacies sold the same drugs at prices 100 to 400 percent higher than what the VHWS were charging, and the pharmacies were usually located many kilometers from the VHWS' villages. This situation is ideal for a black market; it is certainly possible that had thousands of VHWS been trained instead of 137 such a black market would have sprung up. But as it happened, the great preponderance of UNICEF drugs

were sold to villagers at the established rates. One reason may have been the fact that all the drug packets had labels clearly showing what prices were supposed to be. Also, the village committee had an interest in maintaining the correct price, since they benefited from the cheap prices along with everyone else. Finally, there were always few enough VHWS so that selling drugs to pharmacies could be fairly easily noticed and reported.

Curative care provided by VHWS. Village health workers kept a register book for all patients who came to them for curative services. Of 2,497 sequential patients seen by a sample of nine VHWS, the VHWS had recorded the problems of all but 109. Table 1 shows the frequency

TABLE 1
PATIENT PROBLEMS RECORDED BY VHWS

<i>Problem</i>	<i>Definition</i>	<i>Number of Cases</i>	<i>Percentage of Cases</i>	<i>Seriousness^a</i>
1. Headache	Includes general body ache, muscular aches and pains, toothaches, earaches	246	9.8	NS
2. Eye problems	Except eye injuries	78	3.1	S
3. Pneumonia		26	0.8	S
4. Common cold	Includes "throat problems" that were probably sore throats	101	4.0	NS
5. Suspected tuberculosis	Includes cough (probably chronic) breathing problems, chest pain	34	1.4	S
6. Gastrointestinal problems	Includes abdominal pain, diarrhea, dysentery, vomiting, and worms	818	32.7	S
7. Weakness and anemia		344	13.8	S
8. Fever		309	12.4	S
9. Skin problems	Includes impetigo	42	1.7	S
10. Jaundice	"Yellow skin"	22	0.9	S
11. Injuries	Probably mostly lacerations and bullet wounds, many probably infected; excludes burns	164	6.6	S
12. Burns		22	0.9	S
13. Family planning		18	0.7	S
14. Injection		273	10.9	NS
15. Other problems	Deliveries (2), malnutrition (1), malaria (1), gonorrhea (1), broken bone (1), measles (1)	7	0.3	S
Total		2,498 ^b	100.0	

^a NS = problem probably not serious; S = problem potentially serious.

^b VHWS had failed to record problems for 109 patients. Two problems were recorded for 108 patients. Three problems were recorded for 1 patient.

of recorded illnesses. It is encouraging to note that just over 75 percent of all the problems recorded by the VHW sample can be classified as probably serious. They do appear to have been providing a valuable service to the rural population they served. Table 2 presents the variety of services provided by VHWs with the frequencies of each in the period for which data are available. There appears to have been little demand for family-planning services from (male) VHWs. Of all the treatments provided by VHWs, only penicillin might on rare occasions prove dangerous; but the amount of penicillin used by the VHWs in this sample does not appear excessive, just over 5 percent of the treatments provided. This limited experience appears to support the initial decision to provide VHWs with penicillin; the benefits almost certainly exceeded the risks involved.

TABLE 2

RELATIVE FREQUENCY OF TREATMENTS PROVIDED BY VHWs

<i>Treatment</i>	<i>Number</i>	<i>Percentage</i>	<i>Patient Cost in Afghanis*</i>	
			<i>Adult</i>	<i>Child</i>
Aspirin	583	21.5	4	3
Penicillin	137	5.1	22	13
Multivitamins	317	11.7	5	5
Oralyte	141	5.2	10	10
Iron	122	4.5	8	4
Piperazine	658	24.3	6	4
Tetracycline eye ointment	81	3.0	7	7
Sulfadimidine	89	3.3	6	
Oral contraceptives	9	0.3	2	
Condoms	9	0.3	2	
First aid	232	8.6	(5)	(5)
Nutrition education	1	0.0	0	
Referrals	48	1.8	0	0
Injection	280	10.3	(5)	(5)
Total	2,707	99.9		

*\$1.00 equals approximately 40 Afghanis during the period in question.

Note: Costs given in parentheses are subject to the whim of individual VHWs; these were the charges recommended to the VHW.

Preventive services. No hard data were collected on the ability of Afghan VHWs to deliver preventive services. The lack of any incentive system for VHWs to provide such services probably signals a major weakness in the VHW program as implemented. There was no financial support for the provision of preventive services. Villagers could not be

expected to pay the costs because they did not perceive the need. For the government to have paid a salary to VHWS to do preventive work would have doomed the program to almost certain failure: the government's Basic Health Centers could not provide minimal preventive services to even the most limited catchment area despite relatively well-trained and salaried staff; the possibility of the government supporting and supervising preventive work by thousands of VHWS was beyond consideration. Nevertheless, attempts were made to impress upon the VHW the importance of prevention. More than 50 percent of the training hours were devoted to preventive concepts and services. In particular, the VHWS were trained to discuss prevention with patients every time they appeared with a curative problem.

It seems doubtful that the VHWS did much in the area of health education. Political events at that time interfered with the course of the program, and no follow-up was made. The AID team tried, on a very small scale, to develop a village water-supply program to be associated with the VHW. In Sarobi District, Ministry sanitarians, who were paid incentive per diems by AID, used UNICEF-provided materials and free labor donated by villagers (mobilized by the VHW) to construct piped gravity-flow drinking-water systems in two villages. Acting independently, and on the basis of their training, the VHWS may have had some effect on village water supply. At least one VHW was observed to have improved the spring from which his family got its drinking water, and several VHWS constructed sanitary latrines after their training.

The government's expanded Immunization Program was assisted in an immunization experiment using VHWS. Largely owing to the efforts of an exceptionally motivated sanitarian at the Sarobi BHC, the experiment was quite successful. Rural people are generally favorably disposed to vaccinations because of the successful eradication of smallpox. Over a thousand vaccinations were administered with VHW participation. It was the first time that either measles or polio vaccine had been administered in a rural setting in Afghanistan, but this was possible only because of one unusually motivated sanitarian.

VHW patient costs. Patient-visit costs are fairly easy to estimate from the information in Table 2. Assuming VHWS charged the recommended 5 Afghanis for injections and first-aid treatments, the average patient-visit cost works out to be 7.6 Afghanis, or approximately 19 cents. For patients receiving drugs, the average cost was slightly higher: 8.4 Afghanis per patient visit, or about 21 cents. This compares very favorably with the average cost of a visit to a pharmacy, as indicated by villagers in the 1976 survey noted above. There, the cost, including transportation, was 248 Afghanis, or approximately \$6.20, nearly 30 times the cost of a VHW visit.

Three principal factors were responsible for the low cost of patient visits to VHWS. First, and probably most important, the VHW used generic

drugs purchased via a revolving-fund mechanism through UNICEF at a small fraction of the cost of the brand-name drugs sold at pharmacies. Second, VHWs brought the drugs to the patients, minimizing patient travel costs. Third, the VHW's profit was only 2 Afghanis per prescription, accounting for only 26 percent of the cost to the patient; pharmacy markups are undoubtedly considerably greater.

Several other costs are not included in the preceding calculation. These are the program costs, that is, training costs, supervisory costs, start-up capital costs (cabinets, chairs, and other equipment, all provided by UNICEF), and program-management costs. The magnitude of these costs is a little difficult to estimate, but preliminary calculations indicate that training and start-up costs amounted to about \$400 per VHW. If this cost is depreciated at 10 percent per year, and if one estimates the overhead costs (borne by the MOPH) at \$60 per year per VHW, then the program costs amount to approximately \$100 per year per VHW. Experience indicates that VHWs received about 450 patient visits, which is borne by the MOPH and foreign aid donors. The estimated total cost, then, is 19 cents (borne by the patient) plus 22 cents (borne by the government) to equal 41 cents per VHW patient visit.

Conclusion

Prior to the VHW program, the only regularly available providers of health care in Afghan villages were the indigenous practitioners. For certain ailments, most villagers clearly preferred "modern" medicine, which was available only at the nearest Basic Health Center or pharmacy, many located at prohibitive distances from their villages. The initial experience in training and supporting VHWs indicates that they can make an enormous psychological difference to remote village people. The VHW's certificate, framed neatly on the wall, reassures the villagers that the VHW training has meant something. The VHW's well-stocked drug cabinet within a 10-minute walk of most villagers means that when Mohammed Sadeq's son becomes suddenly sick and feverish at 3:00 a.m., there are effective "modern" remedies close at hand. The VHW's effect on village confidence and morale is positive, and until the program was terminated under external pressure it was perceived as a useful government contribution to the community.

[Extracted from Chapter 3, Part B, of Managing Health Systems in Developing Areas, Ronald W. O'Connor, Editor, pp. 42-70. Lexington, Mass: Lexington Books, D. C. Heath and Co., Copyright© 1980, D. C. Heath and Co.]

Traditional Medicine in East Africa: The Search for a Synthesis

Norman N. Miller

[Controversy rages over the potential role of traditional healers and the position of traditional medicine in health programs of the Third World. Kenya and Tanzania differ sharply on this question. This article examines the issues involved in synthesizing traditional and western medical practices in East Africa.]

"African traditional medicine is one of the pillars of the cultural heritage of the Region . . . an integration of the two systems (traditional and Western), without compromise of principle, yet with full understanding on both sides, should enable the sorely underprivileged population to benefit from one of the fundamental human rights: the right to health."

World Health Organization (WHO)

The issue of medical synthesis evokes vigorous argument. The debate is not on the inferiority or superiority of Western medicine in an African context. No one seriously denies the superiority of Western medicine for certain illnesses, particularly those demanding complicated surgical techniques. Rather the issues are poverty, high medical costs, difficulties of access to health care, questions of solace and mental health, and the inescapable reality that Western medicine will not be available to the masses for years to come.

Policies and Issues

The policies of Kenya and its neighbor Tanzania typify two very different approaches to traditional medicine. Officials in Kenya have denounced traditional healing for years, calling for local *mgangas* to give up their prac-

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tices. Cases of malpractice by "bush-doctors" are headlined in the press, and traditional healing arts are constantly confused with "witchcraft," "sorcery," and other "black arts." Only in recent months have there been signs that some sympathy for the traditional healers may be emerging.

Tanzania, on the other hand, permits the search for a synthesis. The government sponsors a traditional medical research unit, a major office/laboratory complex for traditional medical research is nearly completed, and a chair in traditional medicine exists at the University of Dar es Salaam. On-going research activities in herbal medicine in several regions indicate traditional healing has the status of a "quietly official policy." In both countries the debate is heated.

Political Issues. Neither Kenya nor Tanzania openly supports traditional healing for fear of encouraging exploitation, charlatanism, and malpractice. The "pro" and "con" camps include Western-trained physicians, health ministry officials, the press, politicians, traders dealing in herbs and drugs, the healers themselves and their entourages. Traditional medicine has many forms and reflects the ways of thought and life in the 165 ethnic groups of both nations. The goal of the "pro" camp is to restore traditional medicine to an honorable position. This, however, requires admitting that most practices are culturally differentiated, which is a counter-thrust to the political unity and integration embraced by national leaders. Different forms of healing or folk-medicine exist in each of the 123 ethnic groups in Tanzania and the 42 ethnic groups in Kenya. Some proponents argue that a synthesis of the core elements within each folk system should form a "central" East African traditional medical system. This would follow the lines created by the Chinese under Chairman Mao Tse-tung during 1953-1961. This suggestion divides the supporters of traditional medicine, however, with some arguing that cultural uniqueness should be maintained, others arguing that a unified, national, African medical culture should evolve. Both camps feel that an upgrading of traditional medicine would give value and dignity to practitioners, which has not been the case before, and both are opposed by conservative Western medical practitioners, particularly in Kenya.

Economic issue. Traditional medicine is big business. A long-distance trade in herbs, animal parts, and locally manufactured drugs flourishes; both legal and illegal networks crisscross East Africa. Zanzibar, Uganda, Rwanda, and Zaire are important sources for a vast array of herbal substances. At the same time, herbs produced for local neighborhood markets are economically important to an array of collectors, preparers, traveling traders, and local hawkers.

The economic engine that drives the traditional herbal healing trade is its relatively low cost compared to that of Western drugs, and the relative simplicity of the system. Some day a modest output of industrially produced folk medicines will undoubtedly grow up, because many entrepreneurs realize the potential of the local pharmacopoeia.

At the same time a veil of secrecy exists in the rural trade. Some of this is because of the mixture of legal and illegal trade, some because of the clandestine, family-secret nature of the preparations. Like healers, many herbal traders have learned their professions from their fathers and grandfathers. Closely guarded family secrets essentially allow traders to maintain a monopoly on a local service.

Philosophical issues. Traditional medical practitioners consider illness to be tied to non-organic, usually supernatural factors and thus do not take into account the existence of microbes, parasites, viruses, and other etiological elements in Western medical thinking. As a WHO study points out, Western medicine is based on Cartesian principles that see disease as provoked by "materially verifiable, physiopathological causes." There is a tendency now in the West away from the extreme materialistic approaches, a recognition of psychogenic ailments, and an effort to accommodate a broader, all-embracing view of the human being. But there is still a vast difference between the holistic, meta-physical traditional view and the "scientific" Western approach.

Regulation issues. Kenya and Tanzania struggle with problems of regulation. Some control is needed over both healers and the herbs they sell. Synthesis advocates recommend a licensing system to separate the legitimate healers from the charlatans and illicit hawkers, as well as a fee system to distinguish between fair trade and exploitation.

Fee controls and licensing have in fact been a part of the cooperative movements that traditional healers have attempted to form in Kenya and Tanzania. Usually, such self-policing by "guilds" or cooperatives has run into trouble. An early attempt in Tanzania to form a national cooperative of healers called UWATA disintegrated in status fights and internal squabbles.

Health team integration issue. Because traditional healers wield a great deal of influence, there are recurring pressures to bring them into health teams. The idea is to make them full members of primary health-care units, particularly where mobile units are working. Tanzania has experimented with this and held seminars in which both Western and traditional doctors participated. Kenya has such integration under review.

Issues of class and "professional" differences. In a stratified society, which Kenya is becoming, there are small sectors that do not need or use traditional medicine. Others, mainly middle-income upwardly mobile people, usually mix Western and traditional remedies. As these middle-class individuals move into higher incomes there is a tendency for them to become more "Western," in medicine as in everything else. Tanzania, on the other hand, is attempting to build a classless society, has fewer "upwardly mobile" people, and fewer class constraints against traditional medicine.

Professional sensitivities surrounding traditional medicine come in several varieties. Embarrassment and avoidance, for example, are expressed in "modern" medical circles by many African and European doctors, based largely on a generalized prejudice against "bush-doctors." The desire to be perceived as a completely modern doctor does not permit recognition of traditional medicine. Moreover, there is no question that a reliance on traditional practitioners involves some risk to the population. Many physicians are unwilling to find ways to balance such risks.

Overall, a synthesis of Western and traditional medicine raises strong arguments in both the camps. Advocates cite easy access, low costs, self-reliance, cultural appropriateness, and the shortcomings of Western medicine. Opponents point to problems of diagnosis, dosage and herbal uncertainties, sanitation, poor standards of training, an abundance of mini-specialists, issues of malpractice, and a great deal of supernatural confusion in traditional medicine.

The "Supernatural" Dimension

The greatest stumbling block, and the essence of much of the confusion in traditional medicine, lies in how African policy-makers can deal with supernatural beliefs. Admittedly, this is a conceptual jungle, steeped in historic and cultural nuances. Supernatural beliefs are basically ways of coping with fear and insecurity. Fear in this context is the twin face of illness. Unquestionably, illness causes fear, and fear causes illness. Africans have known this for centuries and have sought to incorporate ways of dealing with fear into their traditional healing systems. Any understanding of the medical-supernatural realm demands an understanding of this notion of fear.

Unfortunately, we have been badly sidetracked by the concept of "witchcraft." This is an archaic term, justly disliked by African leaders who resent its derogatory connotation of skins, beads and backwardness.

African "witchcraft" systems are essentially fear systems, roughly analogous to those of the Ku Klux Klan and the Mafia in the United States or the Mafioso in Sicily. Essentially they are closed systems of terror, perpetuated by the use of seemingly random violence or the occurrence of ill health and untimely death, carried out for clearcut reasons. On a personal level this could be for revenge, profit, exploitation or assassination. More broadly, fear systems exist for group exploitation and control, as with the Ku Klux Klan. Fear is a psychological, psychosomatic process in any society; witchcraft is the effort to use and manipulate fear, as opposed to the attempt to relieve it. Defining "witchcraft" as a fear system strips it of some of the hocus-pocus and clarifies some of the problems surrounding traditional medicine, but there are still rampant misunderstandings. It is important to distinguish beneficent practitioners from malpractitioners, the trained from the untrained, established healers from quacks and charlatans.

We may describe four categories of activity, distinguishing good from evil and the natural from the supernatural (see diagram). First, there are healers that rely on "natural" processes, with little or no claim to supernatural intervention, and are believed to do "good." Second, a camp of malpractitioners, evil-doers, also exist. These might include poison specialists, dealers in debilitating drugs, or practitioners specializing in the delivery of injurious substances.

Third, turning to the "supernatural" realms, there are people thought to have been born with special powers, who are believed able to protect one against supernatural threats. Fourth, on the negative side are those thought to be all-powerful, supernaturally and consummately evil; the terms "witch," or "wizard" are often applied. Clearly, the activities in the two lower boxes of the diagram are to be opposed, while that in the upper right corner may be helpful to the patient.

	Real	Imagined
Good	Physical Healing/ Counseling	Supernatural Protection
Evil	Physical Vengeance	Supernatural Vengeance

The Search for a Policy Synthesis

The key to Kenya's reluctant stance on traditional medicine lies in the country's strong drive to attain distinction in modern medical circles. Kenyan doctors did the first kidney transplant in black Africa (1978) and launched the first official family-planning programs in Africa (1966). The emphasis is on technology, tertiary care, specialization, and professional achievement. In the past there has been relatively little emphasis on the sectors that would be closer to traditional healing, such as primary care, prevention, family medicine, or some of the newer movements emphasizing nutrition, harmony, self-reliance, holistic medicine, and the like.

Moreover, there is continued pressure to maintain a centralized health structure. The Ministry of Health has evolved as the monolithic authority, with the provincial, district and subdistrict facilities all tightly tied to the center. Resources do flow from the center, and their "trickle-down" does not allow for traditional practitioners. In addition, Kenya has a strong private medical sector. Particularly in

Kenya's two main cities, Nairobi and Mombasa, there exists a high level of sophistication in medical services available for purchase. This sector is uninterested in any kind of synthesis with traditional medicine.

The Kenya map of the agriculturally rich areas offers another clue to the historic opposition to any synthesis of traditional and modern medicine. People in the rich central highlands, essentially comprising the Kikuyu, Embu, and Meru peoples, are ultra-modernists and rely as much as possible on modern medicine. Early missionary activity in this relatively healthy area provided both Western medicine and an ongoing criticism of traditional practices as a part of the "supernatural dark age." In other areas of Kenya traditional healers have flourished; these regions represent probably 75 percent of Kenya's population. However, it is the people from the central highlands who have been instrumental in establishing national health policy.

In recent months, however, there have been a few indications that Kenya is willing to make accommodations on the synthesis issue. The Ministry of Health is now sponsoring projects devoted to research in traditional medicine and the possibilities of its incorporation into the National Health Services. The Ministry works in collaboration with the Department of Community Health of the University of Nairobi, which is also involved in the encouragement of community participation in health programs. The African Medical and Research Foundation, based in Nairobi, is also engaged in experiments aimed at retraining traditional healers to be used as auxiliaries in health care. At another level, the Institute of African Studies at Nairobi University is much concerned with the correction of the misconceptions about traditional medicine. Another indicator is that traditional medicine has finally been mentioned in a Kenyan *Five Year Plan* (1978-1983).

Traditional Medicine in Tanzania

Tanzania's efforts to synthesize Western and traditional medicine are considerably more advanced than Kenya's. At the traditional medicine research unit in Dar es Salaam, some 2,000 herbs have been collected and analyzed. In addition, the unit has conducted seminars, launched sociological research, and carried out a number of coordinated projects with another government and university unit.

The key issue in Tanzania is the search for a way to standardize the traditional and Western systems. Debate centers on whether the Chinese system of codifying their traditional medicine might work in Tanzania. China based its approach on practices in central China, mainly Han medicine, took herbs and philosophy from other sectors, and established a textbook of traditional healing.

Tanzanians suggest there is a great deal of commonality in traditional healing on an axis from Zanzibar through the central regions to

the lakes, terminating at both Kogoma and Mwanza. This is a traditional trade route, originating in the early nineteenth century as a part of the Arab slave route. Today it is the main east-west artery and a rail

Steps Toward a Synthesis

Remembering that Tanzania has had more contact with China's health model than any African country, by virtue of a number of missions sent to and received from China, it is interesting to speculate on what a Chinese-influenced Tanzanian synthesis might involve.

If Peking's model were followed, traditional medicine would be codified in three main sectors: (1) herbalism, (2) diagnosis and prescription, and (3) the theory and philosophy of African medicine. Thereafter a guide or textbook would be produced and a traditional medical curriculum added to the Western training. China's 20 traditional medical schools in fact teach a mixed syllabus of 75 percent traditional and 25 percent Western medicine. The students would be new college graduates, but such a program on an introductory level, for example, might be open to traditional healers who are willing to undergo paramedical training.

What are some of the problems? Remembering that it took Mao Tse-tung seven years (1953-1961) to get the traditional Chinese medicine reinstated, codified, and implanted in medical schools, the process would obviously be a part of a long-term plan for Tanzania. It is not that traditional medicine will replace or rival Western medicine, but be seen as a parallel system.

Ten Steps Tanzanians have Suggested:

1. Collect, analyze, and test for side effects the commonly-used herbs and plant substances

from several parts of the country (Tanzania has already done 2,000 tests).

2. Standardize prescriptions of the herbal substances and standardize recommended dosages.

3. Select, say, 500 herbs common to most parts of Tanzania and establish specific diagnosis, usage, and cost of purchase guidelines.

4. Establish a recommended fee structure for traditional healers.

5. Establish traditional healing and paramedical procedures in seminars to village leaders.

6. Develop guidelines for the history and philosophy on the positive aspects of traditional medicine.

7. Encourage traditional counseling, health discussion, divination, group healing, and faith-healing in whatever form is locally comfortable and useful.

8. Press officials and the press be required to clearly distinguish between traditional healers and supernatural practitioners (Swahili between *mganga* and *mchawi*) both in the public mind and in the reputations of the local healers.

9. Emphasize the counseling, mental-health elements of traditional healers and draw distinctions between specialized practices.

10. Insist on referrals for cases that cannot be treated by traditional means and establish guidelines for such referral.

throughway. Zanzibar, the Tanzanians argue, with its botanical abundance, is at one end of the critical axis. Traditional healers have always gone or claimed to have gone to this herbal wonderland to obtain their special herbs and healing powders. The central pathway through Tanzania has been traversed by the enterprising Sukuma-Nyamwezi people as porters and long-distance traders since the early 1800s, bringing an admixture of knowledge about herbs and plants spread along the route and a mixture of Islamic and traditional African healing approaches. Tan-

zanians suggest that their artery could be a core, as is the Han region in China, for a codified traditional medical system.

First aid, record keeping, simple examinations, baby weighing, birth attendance, are all within the ken of a traditional doctor. The bonus to both the patient and the overtaxed government is that a local healer, by offering basic treatment, is saving the clinicians and senior medical staff for more complicated illnesses. The argument made by Tanzanians is very practical: why should a doctor be faced with a line of 300 patients when at least half are there for minor ailments or psychosomatic, stress-related problems? A traditional healer, seen as a paramedic, would sort out many of these and save the government a great deal of money. The use of such traditional paramedics is in fact within the official policy of self-reliance that Tanzania has been promoting.

Future of the Traditional Healing

What is the future of the traditional healer? The lesson from East Africa is that traditional healers are ubiquitous, adaptive, and still badly needed. Their survival is assured for some time because they offer culturally acceptable methods of therapy, in essence combining psychiatric counseling with diagnosis and treatment. As discussed in writings of Charles Hughes, Charles Good, Fuller Torry and others, they rely on such universal processes as these:

1. Catharsis-reflection-talking out. Healers usually allow patients a great deal of time to talk about their illnesses, to reveal the real basis of their problems, and to reflect upon them.
2. Labeling. Healers divine (diagnose) and name illnesses. The naming process allows patients to have a concept of the trouble, to have it reduced, and given meaning.
3. Personal characteristics. Traits which are cultivated by healers include exceptional sensitivity, warmth, sympathy, understanding and empathy. Understanding based on having been ill with a major disease gives a healer added power.
4. Pilgrimage. Many healers expect their patients to travel a long distance to an awesome setting for treatment, thus raising expectations and allowing the travel to become part of the therapeutic process.
5. Timing. Many healers are masters at timing their therapy. Some will keep patients camping nearby and waiting for two or three days. Others call for consultation at times they know the patient is in the best mental condition, such as mid-morning.

In short, traditional healers are successful for some of the same reasons Western psychiatrists and physicians are successful. They rely upon the universal processes of empathy, sympathy, expectation, and hope.

What other factors will affect the future of the traditional healer? In many rural societies major shifts are occurring in the role of the healer. He or she is less of a ritualist and more of a counselor and herbalist. Many props which sustained healing in the past have now been eliminated. Healers' reliance on chiefs as supporters ended in the 1960s when chieftaincy as an institution came to an end. Chiefs in many African countries were discredited as colonial "lackeys," and the healer/ritualists they supported as part of an entourage tended to lose power simultaneously. The "ordeal" (usually poisonous concoctions forced upon witchcraft suspects to prove their guilt or innocence), which had been a mainstay of the traditional legal system, was outlawed in colonial times and effectively ended by the 1950s. The role of the healer/ritualist as mediator between the living and the dead has also faded, particularly in areas where the strength of ancestor propitiation is losing currency.

The widespread need for the healer, however, has not faded, and healers have the ability to shift and adapt with the times. One study of the traditional healer in urban settings noted that Dar es Salaam, the capital of Tanzania, had some 7,000 healer-herbalists in practice. Many were new arrivals from the rural areas. The Kenya government reported 6,000 healers registered with the government in the late 1970s.

Individual practitioners will no doubt continue to band together into healing cooperatives, seeking licenses from governments, fixing fees, selling advice and wares to known political and government officials. At the same time, healers will attain new skills in dispensing Western drugs. Aspirin, castor oil, and such malaria prophylactics as Daraprim and Camoquin are available from traders. Other Western drugs have become a part of the healer's kit. Fundamentally, healers will survive because traditional medicine is intricately linked to pervasive metaphysical, supernatural ideas. These ideas are integral parts of the cultural belief systems, steeped in local history and lore. In fact, because chieftaincy and other traditional institutions are crumbling, healers are among the last keepers of traditional values--values that are important because they keep the world in some kind of perspective for millions of rural people.

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A Model for Community Health Care in Rural Java

Lukas Hendrata

[This article describes a method of conveying health care to poor vil-
lages by training residents for part-time voluntary service, combined
with localized health insurance covering both local medicines and the
fees for a nearby health center.]

The project described in this paper began origin-
ally under the auspices of the Foundation for Christian
Hospitals in Surakarta, in Central Java. An earlier ef-
fort in community development/community health was begun
in 1963 in several nearby districts, and this has devel-
oped into an extensive network of related programs and a
community health training center based in Surakarta
(Solo).

Background Information on the Health Service

Klampok is one of the 8 villages in Purworejo-
Klampok, a subdistrict of Central Java. The majority of
the 29,000 people in this subdistrict earn their living
as small farm laborers and traders; about 20% own land
for rice farming or small coconut plantations with about
20 trees. The average per capita income is estimated to
be US\$25 per year. The village of Klampok, some 210 km
southwest of Semarang, has a population of 5,614. For
some years the health services for this area have been
provided by the Emmanuel Health Center, a facility spon-
sored by YAKKUM (Christian Foundation for Public Health)
and located in Klampok. Within the national health cen-
ter system, the Emmanuel Health Center functions as a

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nesia), a non-profit, non-denominational
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opment, health, and population programs.

subcenter under the Government District Health Center and serves the entire subdistrict of Purworejo-Klampok.

Dr. Yahya Wardoyo, a recent graduate from Gajah Mada University Medical Faculty, was assigned to the Emmanuel Health Center in June 1970. The staff of the center presently consists of:

- 2 doctors
- 2 midwives
- 4 assistant nurses
- 3 auxiliary workers
- 3 others (clerk, helpers)

The services provided at the health center are:

- health education, including family planning motivation
- general outpatient clinic
- a mother and child health clinic
- inpatient department (7 beds) for maternity and emergency services
- mobile clinic service to the surrounding villages

After an initial grant of about US\$25,000 for investment in buildings, medical instruments and a jeep, the clinic has been self-supporting. Salaries, operational and maintenance costs plus part of the field activities are covered by fees from deliveries and the outpatient clinic.

All this should be testimony to a viable program and excellent community response. But after several busy years of rendering health services to the community, certain basic questions bothered Dr. Yahya and his staff. He felt that the very important element of genuine community participation was still lacking in the program. Dr. Yahya concluded that: "The community only participates when we ask it to. This type of participation has no firm roots in the community and will last only as long as we are there to maintain it." When asked what was wrong with this approach, Dr. Yahya said that the total input from outside in the form of capital as well as expertise was too large. Moreover, the pace by which the input was channelled was too rapid. "Although we did discuss the program with the community leaders, basically it was our program. The initiative was almost totally ours," he added.

Here lies the very important distinction in understanding the concept of "community participation." In order to build a truly community-based health care program, it was not enough just to have the community participate in the health efforts of the health center. Instead, the community itself should be able to take over the initiative and basic responsibility in recognizing and handling its own health problems. The health institution should function as a stimulating and enabling body,

and as a technical resource for the community. In short, what was needed was a shift from "health care for the people" to "health care by the people." It is on this concept that the Klampok program is now based.

The Klampok Model: From Participation to Responsibility

This basic philosophy of a community-based health care effort was translated into the following strategy:

1. Know the community and let the community know you. One fact often overlooked is that the health center staff are strangers to the community. To overcome this gap, one staff member from the health center should informally be assigned to the village to familiarize himself with the community and to give the community the opportunity of knowing him and his mission before any program is introduced.
2. Work out programs in which the concept of community participation and responsibility can take a real, concrete and personal form.
3. Discover and understand the priority needs, constraints, and potentials within the community.
4. Work in small units. Expand the program through multiplication of these small, independent units rather than by creating a large superstructure. Enough flexibility should be given to these units to enable them to adapt and modify themselves to particular local situations.

The health workers discussed this program strategy extensively with the local community. As needs were articulated, and as specific activities were designed to meet them, the implementation of this strategy seemed to indicate two very key elements:

- the village health cadre;
- the village health insurance scheme.

The village health cadre. The village health cadres are the comprehensive grass-roots health agents within the community. They are voluntary workers from the community, selected by their community, and trained by the health center staff. The single and yet very comprehensive criterion used in the selection is whether or not a person is "right" to be entrusted with this community role. There are no specific restrictions based on level of education, sex, age or occupation. Most of the cadres are teachers, but there are also small shopkeepers, farmers, local government employees and traditional midwives.

The training given by the health center staff is very practical, problem-solving and action-oriented in nature. The emphasis is put on

understanding basic health measures, nutrition education, under-five care, family planning and environmental sanitation. The boundaries of problem solving and action are limited to the actual village situation, avoiding unnecessary general and academic discussion. During their training, the cadres are given various practical assignments to equip them with the necessary skills for identifying and solving health problems. This includes organizing people in the neighborhood to clean their homes and yards and to install additional windows in their homes; to keep the weight charts of the under-five children; to find and report patients who have a cough for more than 2 weeks, and so on. They are also trained in the basic knowledge of diseases prevalent in the area. Priority is given to making them able to identify serious cases, such as malnutrition, dehydration, bronchopneumonia and obstructed labor, and to refer these cases to the health center. In addition to these cognitive skills, they are also trained in the treatment of minor ailments, emergency first aid, and minor diagnostic procedures such as rectal swab, sputum collection and blood smear preparation.

The training course is like an in-service training program. A two hour lecture and discussion is given once a week for a total of 16 weeks. At the end of this period, an additional 8-hour course in 4 weekly sessions is given to those who express an interest in becoming an instructor for the next course. In each consecutive session or course, the role of the health center staff decreases. The health center staff continues to provide general supervision and technical advice, but the main responsibility of conducting the training lies in the hands of the cadres themselves.

The formal instruction, however, plays a less important role than training which takes place in the day-to-day practical application of their newly acquired knowledge. Dr. Yahya maintains personal contact with the cadres during this difficult transitional time so that he can answer any question they might have and give encouragement. He starts his daily schedule with "cadre consultation hour" from 07.00-08.00 in the morning. Any cadre may consult with him during this time on any matter of concern to the cadre. This continued personal contact and follow-up is crucial to the effectiveness of the system. The skill of the cadres is strengthened, and person-to-person communication gives the program a deeper human dimension, a factor so often lost in bureaucratic programs and procedures.

There are now 84 cadres in the project, representing the first, second and third generations of cadres trained during the last 2 years. Once they finish their training, the various generations of cadres catalyze the community into community participation.

Part of the cadre's responsibility is to treat minor ailments and to give first aid in emergency cases. Each cadre has a small stock of

medicine (12 different types) in his home. The people of the community are first encouraged to visit the cadre when they get sick, but they are free to choose either the service of the cadre or that of the health center. In Klampok, both alternatives are covered by the village health insurance scheme (see below). So the actual cost of health care is the same whether the patient chooses the cadre or the health center, except for the extra cost and trouble of transportation to and from the health center. When a disease is one that could well be treated by the cadre, the health center doctor encourages the patient to use the cadre's service. The doctor gives exactly the same standard treatment as would be given by the cadre if he were the one to treat the case. This policy was built in to ensure the community's natural growth of confidence in the cadres. It also gives the cadres time to build up their skill and self-confidence in practicing what they have learned during their training without any pressure.

Within some months, the average cadre is accepted and trusted by the community. Very soon the community realizes that, for minor ailments, it is more convenient to use the services of the cadre instead of the health center which, after all, gives exactly the same standard treatment. The average patient load of a cadre is 5 to 15 patients monthly; 1 to 2 of them need to be referred to the health center. Moreover, the cadre maintains a simple patient-recording system by which the doctor gives his guidance and supervision.

Compared with traditional clinic outreach programs, the cadre system has several very fundamental advantages which make its workers the more effective health agents in the community.

1. The cadres are "insiders." They are from within the community and selected by their neighbors; the community understands and accepts them more readily. Their contact with the community is more permanent in nature, compared with the sporadic "health campaigns" from the health center.
2. Their training is specifically geared to local situations and emphasizes problem-solving skills. While standard health education activity often stops at the point where health lessons are memorized, the cadres put their knowledge and skill to work through supervised problem-solving activities as part of the training.
3. The cadres are voluntary workers. This puts them in a position of respect in the community, a position with higher "moral authority" than that of a paid health worker.
4. They work in small units. In Klampok, there is one cadre for every 15 households. This small unit is

important to make them manageable, since the cadres are volunteers and part-time workers; most continue their regular occupations as well. In addition, the small unit provides the flexibility needed for adaptation to each local situation.

The Village Health Insurance Scheme

One of the most important obstacles in providing health care in Indonesia relates to economic factors. The sections of the community with the greatest health care needs are those with the lowest economic capacity. The health cadre system has been successful in reducing costs.

Based on the same principle of community responsibility, the village health insurance scheme tries to mobilize the existing economic potentials of the community in order to meet the cost of its members' health care. The first and most important step in implementing this scheme is social preparation. This is managed through a continuing series of discussions on the basic principles as well as the health and administrative aspects of the scheme which are attended by the community members, the local community leaders and the health personnel.

The scheme was implemented through the existing village administrative structure, the RT or neighborhood system. (RT = block. A city is divided into districts and the districts into hamlets; each hamlet is subdivided into blocks, which have approximately 50-100 families.) To be a member of the insurance scheme, each household has to pay a monthly contribution of Rp 50 (US\$0.12). This represents about 1% of their monthly income. As members of the scheme, they are entitled to health services which include curative services given by the cadres and by the health center, as well as the total family care, such as regular baby weighing, nutrition and health education services.

The contribution is collected and administered by the RT chief. The fund is used to cover the regular health expenses of the community such as the health center fee and the cost of medicine used by the cadres. Should there be any shortage of funds to pay the health center fee for a particular month, the RT can get one or two months' credit from the health center. Most of the time, however, the fund is sufficient to pay the expenses. Sometimes, there is even a positive balance in the RT's fund. In that case, the community decides how the balance should be used, e.g., in such health-related activities as building community latrines or improving the sewage system, or used as "back-up" funds should there be a health need which cannot be covered by the monthly contribution.

The village health insurance scheme opens up economic possibilities for all members of the community to pay their health expenses. An even greater value of the scheme may be that it creates and maintains a community forum in which health can be discussed as a relevant community issue. Since health is so closely related to other aspects of life, the forum will also be dealing with general development issues and a broad range of community activities. These activities, which aim at improving the quality of life in general, can have a greater and more lasting impact on the level of health than any direct health measures.

In Klampok, the village health insurance scheme and the village health cadre system are mutually supportive. The insurance scheme provides the cadres with a working structure. Medicine used by the cadres is paid for from the insurance fund. At the same time, the cadres are the promoters and organizers of the scheme. By treating patients with minor ailments, they screen the patient flow to the health center and reduce the total cost of treatment to a level within the community's reach.

Discussion

The Klampok model has as its primary emphasis the establishment of new perspectives in the relationship between the health institution and the community. Rather than as a "distributor" of health services to the community, the project staff sees its main role as a stimulating and enabling one, so that the community will be able to accept the responsibility of recognizing and handling its own health problems, and feels that this should be the goal of any community health program. In Klampok, the village health cadre system and the village health insurance scheme are two mechanisms which have proved successful in meeting this goal.

The model is remarkable in its local relevance and simplicity. As Schumacher aptly put it: "Any third rate engineer--or doctor, for that matter--can increase complexity; but it takes a certain flair of real insight to make the thing simple again." (E. F. Schumacher, Small is Beautiful.) And this insight only comes to people who allow themselves to be submerged in the real world of the community, and to accept its limitations. Technically, there should be no difficulty for an average doctor and other health personnel in implementing a similar model for their community. Financially as well, simplicity marks the entire program. The starting capital is relatively very small, and it has been shown once again that sophisticated and therefore expensive classrooms are superfluous. The classroom is the home, the community, and the functioning health center with a simple room. There is almost no extra cost involved other than the regular running cost of a health center, which can be covered either by the patient fees or government subsidy.

But is this program replicable? Our experience in Indonesia indicates that the Klampok model is indeed replicable. The health cadre system has now spontaneously spread to several surrounding villages. The health insurance scheme has also proved to be viable in other localities.

True, there is the question of leadership, and leadership with the quality of compassion. In most countries today, the method of selecting and training health personnel has a strong tendency towards "professionalism" and "elitism" that contributes to separating the health personnel from the community. Further, the concept of true community participation in articulating its needs, planning, making decisions and directing its own health concerns, is still foreign to most health care planners. It is understandable, therefore, that this type of leadership is not easy to find. Clearly, also, a re-orientation and remotivation of both health personnel and community leaders is needed. Health is basically "a matter of the heart." Only where medicine is the servant of the community rather than its master is there some hope for community health.

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Editorial Note: Recent information from Indonesia indicates that in the four years since this article was written both the training and use of volunteer health workers and the formation of localized health insurance groups have continued to spread through central Java and elsewhere.

Traditional Midwives: Controversial Community Health Workers

Mayling Simpson-Hebert, Phyllis T. Piotrow,
Linda J. Christie and Janelle Streich

[Conflict and accommodation between modern and traditional values--in this case between modern and traditional medical practice--is a continuing process. While scientific evidence and lower death rates are usually--although not always--on the side of modern medicine, customs, cost and client convenience are frequently on the other side.]

The practice of midwifery--helping women to give birth--undoubtedly existed long before the advent of writing. Throughout the Greek and Roman periods in Europe and during the great Islamic Empire of Middle Eastern history, midwives apparently practiced alongside university-trained physicians without conflict.

The development of the European guild system in the 13th century, however, and especially the establishment of barbers-surgeons guilds, meant that midwives were increasingly excluded from training and licensing as legitimate health practitioners. Only members of the surgeons' guilds were permitted to use instruments; so when forceps, for example, became available in the 18th century, female midwives were neither allowed nor trained to use them. Also at this time, men began to enter the field of midwifery. Yet, because obstetrics was not recognized as a legitimate medical specialty until the middle of the 19th century, both obstetricians and other practitioners

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tended to aggrandize their own role by criticizing the allegedly dangerous and unhygienic practices of the traditional midwives.

The developed countries faced difficulties in adapting midwifery to scientific medicine and, indeed, have had a mixed record. Today the developing countries in Asia, the Middle East, Africa, and Latin America face some of the same problems and controversies in working with their traditional midwives to help improve national health services. A dual system of medicine exists now in many developing countries--a modern/scientific one and a traditional one. The modern health sector consists mainly of university-educated physicians, practicing in urban hospitals and research centers, sometimes combining a government post and private practice, and often putting in a 12-hour day working on curative medicine and administration. The traditional health sector, both urban and rural, consists of a great variety of indigenous practitioners, including traditional midwives, who live close to their clients, dispense herbs, potions, massage, and other familiar remedies on request, and take time to provide conventional wisdom and personal services for people who speak the same language, both literally and figuratively, and often come from the same background. For most villagers and many city dwellers in developing countries, going to a traditional practitioner is more comfortable, more convenient, and usually less expensive than going to a physician or hospital. Unless the would-be patients are absolutely sure that only a physician and modern technology can take care of their problem, they are likely to try the traditional practitioner first--in much the same way that an American with a cough will buy a patent medicine from the drugstore before making a doctor's appointment. In other words, the so-called modern medical system has not replaced the traditional one; it has only created another option that some people will use sometimes for some conditions.

Modern medicine, although it exists to some extent in virtually every country, is an option that is often not truly available to most people. The ratio of population to doctors and nurses in most developing countries is very high, at least several thousand per health professional. Doctors and nurses tend to be concentrated in urban areas, where the ratio is about one doctor per 2,000-3,000 people, while in rural areas, where 60 to 80 percent of the population lives, the ratio is about one doctor per 40,000-50,000 people. As populations grow and doctors emigrate, the ratios become even worse in some countries. Traditional midwives, on the other hand, practice in almost every village in many countries and so are certainly more accessible to most women than either physicians or hospitals.

Ideally, scientifically trained practitioners should work cooperatively with a broad range of indigenous practitioners to meet the compelling health needs. The indigenous practitioners could learn how to use many modern drugs and techniques safely. In turn, scientifically trained practitioners could learn both how to apply culturally accepted

indigenous practices or adapt them in such a way as to make them safer, and how to introduce modern practices in such a way as to make them culturally more acceptable. In practice, however, hostility, or at the very least poor communications between the educated health professionals--physicians, nurses, and formally trained midwives--and traditional midwives is often cited as a major problem in such programs.

Nevertheless, it is widely recognized that the role of traditional midwives--as well as that of other traditional practitioners--is not likely to be eliminated soon. Legal or illegal, trained or untrained, these midwives continue to deliver 60-80 percent of babies born in the developing world and to provide a variety of health services to many women. Therefore a number of countries provide for the registration or licensing of traditional midwives. Further, some governments like Indonesia, Malaysia, the Philippines and Thailand, international agencies such as the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), and private institutions have undertaken programs to train and improve the skills of traditional birth attendants. China has followed the most comprehensive policy of enlisting practitioners of traditional medicine in village communes in a cooperative effort with modern medicine. In rural areas, community women have become midwives--"barefoot doctors." These village people participate in three to six months of practical training and perform their health duties part-time, delivering babies at home, providing a broad range of maternal and child health (MCH) and preventive services, and sharing in the other work and resources of the commune.

In 1972, the United States Agency for International Development (USAID), as well as other donor government agencies, began to work with the International Confederation of Midwives (ICM) in cooperation with the International Federation of Gynecologists and Obstetricians (FIGO) to include family planning in services provided by midwives of all categories and especially by traditional midwives. Some 20 meetings have been held.

During recent years several factors have helped to focus attention on the role and potential of traditional midwives. These factors include concerns over (1) high levels of infant and maternal mortality in developing countries, which have prompted a number of programs using community workers in MCH; (2) high rates of population growth, which have led private agencies, governments, and international agencies to try to use indigenous community leaders to encourage family planning; and (3) the urgent need for better primary health care facilities to serve large rural populations, which has been expressed in resolutions approved by the International Conference on Primary Health Care, sponsored by WHO in Alma Ata, USSR, in 1978. Over the last decade, attention in the field of family planning has shifted from medically oriented programs, based in clinics or hospital centers, to community-based projects where village women and leaders distribute contraceptives directly

to local users. While hospitals or clinics still perform sterilizations, IUD insertions, and legal abortions, many relatively untrained people are now playing a major role in family planning programs in Asia and Latin America.

It has still not been easy either to incorporate traditional midwives into a more formal modern health care system or to utilize them effectively in family planning programs. Whether their proposed role is as motivators (referring clients or potential family planning acceptors to health care facilities), as providers (performing various procedures themselves), or as suppliers (dispensing medicines or some contraceptives), traditional midwives do not necessarily perform the way government or other health officials think they should. This is often not their fault but rather the result of programs that have not been designed to take sufficient account of how the traditional midwives actually function in a specific community, and what they already do for their clients. These affect what they may be willing or able to accomplish in any new program.

Characteristics of Traditional Midwives

In most developing countries, traditional midwives are nonliterate, postmenopausal village women who have been married and borne several children. Yet in some areas--Bali, Ghana, Nigeria, and Bolivia, for example--many birth attendants are male. Midwives are usually older, because in traditional societies older women are more respected, they are not so restricted to the home either by modesty or by the responsibilities of child care, and they have more experience with deliveries. Yet in Mexico young women are also becoming accepted as *parteras*, and in Sudan young traditional midwives are selected by the government for training to become "village midwives." Younger traditional midwives tend to be more literate, more active, and more accepting of family planning.

In most cases, traditional midwives enter their profession by apprenticeship to an older midwife, usually a relative or close friend. In Thailand most midwives enter the profession simply by proclaiming themselves to be *moh tan yae*, while in other countries traditional midwives feel themselves called by supernatural forces to take up midwifery as a religious duty or a service to the community. Also, midwives may be informally selected or designated by their friends and neighbors because they have special skills.

Some traditional midwives are active in serving the whole community, whereas others help only their own family and neighbors. This is an important distinction, and may help to explain why some are more effective recruiters of family planning acceptors than others. Often a traditional midwife inherits her clientele from the older midwife to whom she was apprenticed. Thus her practice may be restricted to a

set of extended families, so that actively recruiting others would not be appropriate. The practice of a rural midwife is also limited to the geographic area she can reach by foot, animal, or sometimes public transportation. In most rural areas midwifery is a part-time job, and traditional midwives work at agriculture or other local activities most of the time.

It is necessary for modern health planners to take into account the personal characteristics of traditional midwives (sex, age, extent of literacy, level of activity), their status, traditional practices, and degree of influence over their clients in efforts to collaborate with them to improve maternal and child health and family planning accessibility. All of these characteristics and factors may vary, and in some cases may operate against effective collaboration unless the special needs of traditional midwives are considered.

Work of Traditional Midwives

The work of traditional midwives is as diverse as their backgrounds. In many societies traditional midwives do much more than their name suggests. Some would be better described as "traditional healers" who care for women, especially during their reproductive years and childbirth. They not only deliver babies but also assist women during prenatal and postnatal periods, give advice on child care, infertility, and contraception, perform abortions, and play important ritual and religious roles. A number of these practices may be personal skills or techniques acquired from experience and guarded as professional secrets, but most reflect the cultural patterns of the area.

Prenatal care. The extent of prenatal care ranges from almost nothing in much of India, Pakistan, and Bangladesh to close and continuous personal contact in parts of Southeast Asia and Latin America. In these cultures, a pregnant woman may visit the traditional midwife or be visited by her early in pregnancy, at which time the traditional midwife might determine her delivery date, perform the first prenatal massage, or advise her on diet, activity levels, and sexual relations with her husband. Dietary advice in Latin America, the Middle East, and South Asia is based on a "hot and cold" humoral theory of health and illness (not related to temperature), which varies greatly from one locale to another.

In many parts of Asia, the Middle East, and Latin America, massage is an indispensable part of prenatal care. During pregnancy, the traditional midwife, who often has a highly developed sense of touch, may use massage to relax muscles, relieve discomfort, and estimate the progress of pregnancy. As delivery approaches, massage is used to position the fetus or to loosen the placenta in preparation for delivery. In the Yucatan, Mexico, for example, traditional midwives perform external version to avoid breech delivery any number of times from the eighth month

until the head is engaged. This is uncomfortable for the woman but probably safer and certainly more convenient than traveling to a major city for a cesarian section.

Labor and delivery. In most traditional societies childbirth is a social event rather than a medical one. Female relatives and neighbors are present. While the role of the traditional midwife varies--in South Asia she may be little more than a servant cleaning up--often she is the central figure, playing an active role during labor, delivering both baby and placenta, and directing others present in their respective roles. During labor the traditional midwife may massage the woman and administer herbal beverages, sometimes containing oxytocic ingredients, in order to accelerate labor. At delivery many midwives help to extract the baby and the placenta.

One of the most important duties of the traditional midwife is cutting and dressing the umbilical cord. As a rule, the cord is not cut until the placenta has been expelled. While a trained midwife almost always carries a kit containing supplies, including scissors, untrained midwives often use equipment found in the household. In India the tool used to cut the cord may depend on the occupation of the family--a knife for leatherworkers, a trowel or sickle for farmers, or scissors for tailors. The traditional midwife dresses the cord with ghee, dung, ashes, or herbal preparations, according to local custom. Often the cord is tied as well as cut and dressed. Sometimes it is cauterized and hot wax is applied, as in Mexico and Guatemala.

Postnatal duties. The work of the traditional midwife may continue after delivery, when she may help to care for mother and child. The midwife usually bathes and clothes the infant according to the practices of the region. It is common, especially in Asia, for traditional midwives to provide help in house cleaning, washing, and cooking after delivery to give the new mother an opportunity for rest and time with her baby. This is an important difference between traditional midwives and educated or government-salaried midwives.

Traditional midwives also perform medical functions, such as providing herbs and medicines to stop heavy postpartum bleeding or to stimulate the milk supply. They help women start breast-feeding. Repair of perineal tears may also be part of the midwives' task. Many traditional midwives take an active role in hastening the recovery of the mother, using a wide range of traditional treatments such as massage, baths, binding, and herbal medications. These postpartum duties bring the traditional midwife into close and frequent contact with village women and provide many occasions to discuss questions of health, childbearing and fertility.

Rituals. Childbirth in all cultures is surrounded by a diverse array of rituals. Traditional midwives play an important role in the

ritual and religious aspects of childbirth, all the way from using occult means of predicting the sex of the baby to participating in coming-of-age ceremonies. These rituals vary widely, and they can be used to gauge the traditional midwife's influence in her community and perhaps also her potential role in health care programs.

Disposing of the placenta is almost always the responsibility of the traditional midwife and frequently assumes ritual significance. In Cameroun, for example, one reason that women continue to deliver with traditional midwives in spite of sufficient numbers of government maternity units is to guarantee appropriate disposal of the placenta. In Malaysia the child and placenta are considered to be siblings. Since it is thought that the two are reunited at death, the *kompong bidan* carefully washes the placenta, cord, and membrane and wraps them in a white cloth to be buried. In other societies, such as in Northern India, where the afterbirth is thought to be polluting, only a low-caste traditional midwife will handle it. Midwives bless new infants and try to protect them from evil forces. In much of the Muslim Middle East, soon after the birth of an infant a traditional midwife whispers sayings from the Koran in the baby's ears.

Fertility-related services. Traditional midwives are often asked for advice both on how to cure infertility and how to prevent unwanted pregnancy. Treatment of infertility is important since a barren woman is often ridiculed, made to feel useless, and divorced. Traditional midwives use a great variety of techniques to try to deal with this problem--which often eludes even advanced medical science--including massage to turn a retroverted uterus, warm baths, herbal medicines, intercourse on prescribed days, vaginal suppositories of unknown efficacy, and secret rituals, sometimes involving pieces of placenta from a successful delivery.

To control fertility and especially to space births, the most common traditional methods recommended by midwives are abstinence, withdrawal, and abortion. Breastfeeding, of course, also limits fertility and is usually encouraged by all traditional practitioners. Abstinence is often reinforced by religious teachings or taboos and by such specific guidelines as postponing sexual intercourse while the woman is lactating or until the child reaches a certain age. In Cameroun, for instance, the traditional midwife reportedly advises abstinence until the child cuts premolar teeth, can walk, reach one ear with the opposite hand over the head, or address members of the household by name.

Regardless of the legal status of abortion many traditional midwives perform them, and sometimes even derive a major part of their income from abortion. In Asia, for example, where most data has been gathered, one Philippine study shows that about one-third of abortions in a group of rural women were performed by the traditional midwives; an Indonesian

study reported that 12 percent of traditional midwives admitted to performing abortion; a study of abortion providers in Lahore, Pakistan, indicated that traditional midwives performed about 15 percent of abortions in the study group, and a study in Thailand revealed about 12 percent. Two studies of abortion complications in Bangladesh showed that more than half of the complications and deaths occurred after abortions performed by traditional midwives.

Many traditional methods of child spacing and especially of abortion can be dangerous as well as ineffective. The high frequency with which they are used indicates the demand for fertility control services. The fact that traditional midwives are so often involved indicates their potential to help satisfy that demand. As knowledge of and demand for family planning increases, it may be only a matter of time before traditional midwives voluntarily incorporate family planning services into their regular practice, whether or not they are formally employed by national programs to do so. Giving traditional midwives easy access to ample supplies of contraceptives which they can sell will help to accelerate this process of change.

Status of Traditional Midwives

While traditional midwives do not have high status among hospital personnel, medical practitioners, and educated urbanites, they are almost always respected in their own communities as a source of information and advice about baby care, sexual behavior, fertility control, health, and related matters. In Indonesia, Malaysia, the Philippines, Thailand, and much of the Middle East, Africa, and Latin America, traditional midwives are influential among the women they counsel and help. In India, Pakistan, and Bangladesh, their status is variable but generally much lower, yet they are considered influential in sex-related matters and childbirth. Dr. John Bryant, Deputy Assistant Secretary of International Health for the U.S. Department of Health, Education, and Welfare, describes the *moh wan yae* in Thailand as follows:

There could be no greater mistake than to consider her a dirty-handed granny with a slovenly and superstitious approach to a procedure that should be neat and sterile. The woman is a priestess. She not only has important technical and domestic skills; she also ensures the cultural and religious integrity of the event . . .

In some societies the relationship between a child and the traditional midwife continues for months or even years after birth. For example, in Indonesia the *dilan* officiates in a series of ceremonies that occur up through seven months of age, and in Thailand children delivered by a midwife may give her gifts at an annual festival. In Morocco the midwife is invited to a celebration when a child she has delivered can

recite by memory from the Koran, and in Egypt and Iran the child's affection for the midwife who delivered him or her often lasts into adulthood. In some countries the traditional midwife may come to be regarded like a grandmother or a godmother.

Only in the Indian subcontinent do most midwives have low status. This is related to cultural concepts of clean and unclean work. In India, Pakistan, and Bangladesh menstrual blood, the placenta, and blood of childbirth are considered ritually polluting and symbolically dangerous substances. Only women of the lowest social classes and castes are willing to come into contact with these materials. In North India the Sweeper and Untouchable castes from which traditional midwives come work in leather and other products of dead animals, bury the dead, clean the street, empty bucket latrines, and perform other "unclean" tasks.

For all her services, the traditional midwife accepts payment in kind, cash, or none at all, according to local custom or the financial means of the family. Much of her recompense, especially in rural areas, comes in the form of high status and prestige in her community, gifts, favor, or support over a long period of time. In urban areas or where a traditional midwife specializes in a service such as performing abortions, fees are likely to be higher and paid in cash. In their 1975 overview of traditional midwives' programs in half a dozen countries, Everett Rogers and Douglas Solomon estimated that a traditional birth attendant averages about three deliveries per month and receives about \$1 to \$3 (US) per delivery. She is usually paid more for delivering a first born or a son. As a private practitioner, she is also paid by her clients for herbal medicines, potions, massage, and other services or supplies she may provide in addition to attending births.

Working with Modern Medicine

Conflict and accommodation between modern values and traditional ones--in this case between modern medical practice and traditional practice--is a continuing process. The medical profession tends to consider traditional midwives unhygienic, unscientific, and superstitious old women who jeopardize the lives of mother and child. It is said that they wear dirty clothes, do not wash their hands, conduct unnecessary vaginal examinations, pound on or push roughly on the abdomen, fail to recognize breech or other abnormal presentations, pull on the umbilical cord to extract the placenta, delay too long in referring or transporting women with serious complications of labor to medical facilities, and, above all, use dirty instruments and dressing on the umbilical cord, contributing to infection and tetanus in the infant, which is often fatal.

Many traditional midwives are just as critical of modern practitioners. Although they do not write articles in scientific journals, traditional midwives have complained to anthropologists and others that

What Educated Health Services Personnel Say About Traditional Midwives

Doctors Say

- They are ingrained with bad habits you can't change, like smearing dirty substances on the cut cord, squeezing the laboring abdomen, and spitting in the baby's eyes.
- Their standards are too low. Some kill their clients. Many complications of their dangerous practices are seen in the hospitals. They refer their patients late, and only when they are in extremis.
- They work by superstitions and magical and religious thinking. Hence, they cannot distinguish good practice from bad, and they could not grow in skills on the job.
- The homes are filthy and unhygienic. If we get women to deliver in maternities there will be less risk of infection, and more chance for the mother to rest, as well as special care for the baby if it is needed.

Administrators Say

- Pregnancy and childbirth are the most important events for contact with the population in building up primary health care/maternal-child health services. We must put them at the center of our program. We must control the quality of services by doing these through our health facilities.
- They can't keep records, being illiterate and unsystematic.

Source: Thorne

- Most of prenatal and postnatal care is educational; how can one expect ignorant, illiterate women to adequately educate the population?
- If we start to train them, they'll organize, become an interest group, demand payment.
- Anyway they are old, are dying out, are not being replaced by young TBAs. They will just naturally fade away as we train bona fide midwives. Hence it is not worth investing our limited resources in upgrading or working with them.

Licensed Midwives Say

- They are too popular with our clientele in the rural and some urban areas, appealing as they do to the ignorant, superstitious, and harmful attitudes of women, whereas we appeal to and try to develop the rational, scientific, hygienic attitudes of women.
- The TBA is my competitor for paid, outside-the-maternity home deliveries, and I must draw her clients away from her to my better care; in retaliation, of course, she spreads lies and rumors about how uncaring, commercial, ignorant of ritual, and dangerous my services are compared to hers.
- We have to supervise the TBAs, and I don't have time for it.

physicians and hospital-based obstetric services use dangerous chemicals to induce labor, place women in awkward and immodest positions, prohibit family and friends from coming to provide psychological support, use forceps carelessly, perform too many cesarean sections, and expose the women to all kinds of unnecessary procedures and sicknesses.

Everywhere modern practitioners try to assume control over traditional practitioners, to supervise their work, and to compete with them for clients among those able to pay. Since the educated public and private health doctors see the cases where the traditional midwives have failed, they sometimes try to prohibit the midwives, who have little political power, from practicing. On the other hand, the older, experienced traditional practitioners, including midwives, resent the claim of younger, school-educated health personnel to know more than they do, and they often try to avoid the latter unless a patient is in danger. The hierarchical structure of the modern health professions and the efforts of some doctors, nurses, various categories of trained midwives and

auxiliaries to define very sharply their own roles and status make it especially difficult for them to work with an entirely different, traditional medical network that finds its legitimacy in valued customs and community acceptance. Except for China, few governments have tried to integrate the two systems on anything like an equal basis.

**What Traditional Midwives
Say About Modern Health Services**

- The health services give awful care. They make women wait a long time. They are rude, insolent, and give strange treatments. They hurt and embarrass women. They will insert strange things in a woman's body even without her knowing it; then the woman will have pain or bleed. They give pills that make women dizzy, and sometimes sterile, or ruin the pleasure with their husbands.
- The health service personnel are shameless the way they expose a woman. They are irreligious; they do not say prayers or perform rituals to ward off evil fortune. Neither I nor my clients understand their way of speaking.
- The health services midwife treats me poorly if we meet. She says bad things about me. I give good service in my community. I do many things that are important that the midwife doesn't even know about. She might try to stop me if she did know about them.
- When a woman needs care, often the health services are not available, but I am always available to help my women. Often they do not have the supplies a woman needs. They never spend with a woman the time she needs.
- The midwife is trying to steal my clients.
- If they want me to promote contraception, what will happen to the deliveries I depend on?
- It is dangerous to have dealings with outsiders.

Source: Thorne

It is not always clear which practices of traditional midwives are dangerous. Drs. Cicely Williams and Derrick Jelliffe proposed in 1972 that traditional practices should be classified as beneficial, harmless, harmful, or uncertain (see figure below showing this for two areas). From these examples it is clear not only that much of what the traditional midwives do is beneficial but also that obstetrical practices change, and what is recommended at one time may be criticized at another. Although cleanliness and aseptic technique are always beneficial, there is very little scientific evidence that sitting up or walking about is harmful during labor, that massage is necessarily dangerous, that freshly cut

bamboo or a thread cannot be safely used to cut or tie the umbilical cord, or that hospital delivery is always safer than home delivery. Some traditional practices, such as cauterizing the cut stump of the umbilicus with a candle--as is traditionally done in Mexico and Guatemala --may be just as safe as using sterilized scissors. It should also be remembered that many causes of sickness and death are environmental, beyond the control of either doctors or midwives.

Beneficial, Harmless, and Harmful Practices of Traditional Midwives, Two Examples

Beneficial	Guatemala		Beneficial	Rural Punjab	
	Harmless	Harmful		Harmless	Harmful
<ul style="list-style-type: none"> Respond and arrive promptly in times of need. Create atmosphere of trust and confidence. Recognize mother and baby's need to be together. Recognize need for other family members to be present at childbirth. Attend to mother and family for long period after birth. Remain with women during labor; do not force women to bear down too early. Allow women to move, sit, and walk during first stage of labor, and to assume squatting position for delivery. Support women psychologically and emotionally; maintain close personal relationship with her. 	<ul style="list-style-type: none"> Require umbilical cord to be a certain length. Require proper disposal of the placenta. Administer ritual baths to mother and infant three days postpartum. Share and respect woman's modesty in childbearing matters. 	<ul style="list-style-type: none"> Fail to use aseptic procedures and materials in delivery, care of newborn. Perform strong abdominal massages. Tie sash around woman's abdomen to hasten delayed delivery. Hold woman upside down by her feet to correct abnormal fetal presentation Restrict intake of "cold foods" (fish, pork, fruits) in postpartum period. Advise giving infant sweetened water until mother's milk "comes down." Refrain from referring patients to hospital in case of emergency. 	<ul style="list-style-type: none"> Give care and attention to the woman's physical and mental state of health from the time of confirmation of pregnancy until 40 days after childbirth. (This includes building up her physical strength, self-confidence, and will power.) Advise avoiding sexual intercourse in the third trimester of pregnancy. Wash mother's dirty clothes and dispose of bandages after the childbirth. Encourage prolonged breast-feeding. Provide services in an atmosphere of cordiality, mutual trust, and interdependence. (In contrast to the strange, impersonal atmosphere of the hospital.) 	<ul style="list-style-type: none"> Wear amulets and charms to ward off evil spirits. Advise avoidance of contacts with strangers during the period of delivery and seclusion. Advise women on disposal of placenta in a culturally prescribed manner to avoid harm to the newborn through black magic. Advise women regarding performance of inexpensive ritual ceremonies, such as purification bath. Treat mother's minor illnesses with certain harmless indigenous medicines. Treat child's minor illnesses with home remedies. 	<ul style="list-style-type: none"> Advise undereating in the third trimester of pregnancy. Advise avoidance of consuming certain locally available nutritious foods. Vigorously massage the woman's abdomen during the second and third months of pregnancy. Lack of asepsis in procedures adopted for delivery. Advise excessive intake of "desi ghee" to lubricate the birth canal. Refer seriously sick children to indigenous medicine practitioners.
		Source: Hurtado (208)			Source: Kakar (239)

Family planning. Can traditional midwives play a role in family planning programs? In practice their role varies from education and referral--most commonly--to supplying or selling the pill and other contraceptives to village users, as has been done in Malaysia, Mexico and

several other countries. Giving traditional midwives ample supplies of pills to distribute sometimes arouses medical opposition but suits traditional roles, is safer than many traditional fertility control methods, and has been effective in several countries. Traditional midwives proved unsuited to insert IUDs in the early South Asian programs; they should be discouraged from performing surgical procedures. It makes a difference, however, which traditional midwives are selected to participate in a program. Some serve a larger clientele than others. Generally younger women are sympathetic toward family planning, but older women have more influence in the community. Identifying the most active and influential women--whether traditional midwives or not--has been an effective way to spread family planning in countries as different as Bangladesh, Egypt and Mexico.

Evaluation of family planning programs for traditional midwives has been minimal, although such projects have more often been evaluated than those involving childbirth and MCH practices. Experience suggests that programs like those in Malaysia and Mexico, where traditional midwives have been allowed to distribute contraceptives directly, are more effective than programs where traditional midwives are required to refer their clients to a health center for all family planning services. At a moderate cost, calculated in the Philippines as less than \$1 (U.S.) per new acceptor, traditional midwives can provide access to modern means of family planning as a substitute for the traditional methods which they provided in the past.

The key question for health and family planning programs is to what extent better training of traditional midwives and better communications with modern health services can improve their performance and reduce infant and maternal mortality. Tetanus, for instance, can be somewhat reduced by use of a sterile knife, razor, or thread to cut or tie the cord, and can be virtually eliminated by immunization programs. But even immunization campaigns need the support of traditional practitioners. Other infections can be reduced by greater cleanliness, but it is not easy to maintain a sterile environment under dusty conditions where both water and fuel for boiling it may be scarce. Traditional midwives can be trained to recognize complications early and to bring difficult cases to clinics or hospitals, but, if trained health personnel are not there, the outcome could be worse. Traditional midwives can also be taught to recommend and provide means of family planning, although they may be less than enthusiastic if they have to refer women to someone else for supplies.

Brigitte Jordan, an anthropologist at Michigan State University, has suggested that two kinds of research are needed: (1) biomedical studies to determine which traditional practices are beneficial and which harmful, and (2) anthropological studies to determine how modern medicine can best adjust to the customs and expectations of traditional societies. Closer collaboration between traditional and modern practi-

tioners could improve MCH care and family planning acceptance in many developing countries.

In many places such cooperative relationships already exist to the mutual benefit of doctors and traditional midwives. In Taiwan traditional midwives often assist young, recently graduated obstetricians in setting up new practices, as well as forming professional partnerships with them at "birth stations." In one such case an older nonliterate traditional midwife joined with two other midwives and a young male obstetrician to operate a midwifery clinic (or birth station) in her own home. Handling normal deliveries herself and referring complications to the obstetrician, she created what was essentially a neighborhood health and consulting center where deliveries took place in a friendly social environment but also were assisted with a high degree of technical skill and safety. Taiwanese traditional midwives also cooperate with gynecologists to provide family planning services. The traditional midwives arrange for patients to have tubal ligations at their birth stations, with the physicians performing the surgery and the traditional midwife providing preoperative and postoperative care. Many help the government to sell contraceptives, making a small profit from these sales.

In Fortaleza, Brazil, birth stations have been organized by Dr. Galba Araujo, a professor of obstetrics at the *Maternidade Escola Assis Chateaubriand*, to the benefit of *parteras empíricas* and pregnant women. Dr. Galba invited the *parteras* to assist their clients in delivery at small satellite centers where a nurse and transportation to a hospital are always available. These *parteras*, who have been taught to identify high risk cases, have not lost a single patient in 5,000 deliveries under this system. The Ceará State Department of Health expects to extend this type of service throughout the state. While building this bridge between modern and traditional practices, Galba is encouraging changes on both sides, including fewer cesarean sections, use of birthing stools, and a more relaxed atmosphere in the university hospital. Cooperation such as this at the working level, whether initiated by the traditional midwife as in Taiwan or the physician as in Brazil, is rarely publicized or evaluated, but shows what constructive results can ensue when both kinds of practitioners recognize their mutual interest in improving the conditions of childbirth and fertility control. They blend good modern medicine with good traditional practices.

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