



CF-RAI-USAA-PD-GEN-2007-000118

Expanded Number **CF-RAI-USAA-PD-GEN-2007-000118**

External ID

Title

**PSC. Ghana. Communication Support and Integrated Rural Development in Ghana, paper prepared for the 30th International Conf. on Communication, ... in Acapulco, 18-23 May 1980, by Joseph Ashcroft, Gary Gleason, Univ. of Iowa, Consultants for UNICEF**

Date Created / From Date

5/18/1980

Date Registered

8/10/2007 at 1:21 PM

Date Closed / To Date

Primary Contact

Home Location **CF-RAF-USAA-DB01-2007-10673 (In Container)**

FI2: Status Certain? **No**

Item Fd01: In, Out, Internal Rec or Rec Copy

Owner Location **Programme Division, UNICEF NYHQ (3003)**

Current Location/Assignee **Upasana Young since 8/19/2007 at 12:19 PM (last 11/13/2007 at 2:45 PM)**

Date Published

FI3: Record Copy? **No**

Record Type **A01 PD-GEN ITEM**

Source Document

Contained Records

Container **CF/RA/BX/PD/CM/1985/T009: Programme Support Communications**

Fd3: Doc Type - Format

Da1: Date First Published

Priority

Document Details **In TRIM Store, Adobe Acrobat 7.0 D C:\DOCUME~1\TRIMSE~1\LOCALS~1\Temp\1867128738-90**

Notes

**25 PP.**

**Outlines the economic, social and cultural situation in Ghana and problems establishing a communications network or system for development assistance messages, mainly in agriculture.**

**Paper presented at the 30th International Conference on Communication, Human Evolution and Development, of the International Communication Association. Acapulco 18-23 May 1980.**

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Communication Support  
and  
Integrated Rural Development in Ghana

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Paper prepared for the 30th International Conference on Communication,  
Human Evolution and Development, of the International Communication  
Association, held in Acapulco, May 18-23, 1980.



In spite of more than two decades of endless effort to revise the quality of peasant life in rural areas, Ghana, Africa's bellwether nation in the struggle for independence from colonialism, still embodies many of the increasingly hackneyed characterizations of Third World countries with troubled agricultural economies: an overwhelmingly peasant population, small-scale subsistence cultivation, low yielding traditional seeds, inefficient cultural practices, labor-intensive implements, increasing land pressure, urban drift and growing underproduction of food crops. Agricultural innovations which promised to make such a difference to peasant productivity have failed to penetrate very deeply into the small-scale sector of the rural economy. And communication research, which seemed so promising of solving this problem, has so far failed to come up with systems and strategies for diffusing needed innovations across preliterate traditional social systems reliably, efficiently and equitably. This latter failure is all the more painful in light of the massive advances of communication technology in recent times.

A determined though belated effort to come to some grips with rural development bottlenecks due to communication shortcomings is currently underway in one pilot region of Ghana. This effort is being attempted within the context of a multimillion dollar integrated rural development program aimed at increasing the income-generating agricultural productivity of 125,000 small-scale farm families in the Upper Region of Ghana. Emerging from this effort is an incipient definition of a little recognized role in the process of rural development: namely, that of the professional communication specialist. The present paper sketches the growth of the need for such a role from the perspective of the present authors and culminates in its elaboration within the Upper Region Agricultural Development Program (URADEP) of Ghana.

The present authors' approach to Third World rural development stems from a diffusion of innovations background because of an early conviction that one way for substantially improving the quality of rural life was through adoption by the rural masses of new ideas and practices which would enable them to increase their productivity. The paradigm was simple enough to comprehend. The agricultural sciences showed over and over again that where five bags of grain

were yielded using traditional seeds, techniques and implements, twenty bags were possible using scientifically improved seeds, techniques and implements. All that remained was for the peasant masses to adopt them.<sup>1</sup>

In its early days, the tradition of diffusion of innovations appeared filled with great promise of impending breakthrough discoveries of mass and interpersonal communication strategies and designs which would open the cornucopia of western innovations to the Third World peasant masses and transform them into a state of modernity as surely as a tadpole became a frog.<sup>2</sup> And then, the promise began to fade. Somehow, the information it accumulated failed to translate into clear-cut directives for practice. The area of inquiry grew wide with general information to explain the process but remained shallow regarding the development of strategies to impel the process.

The methodologies diffusion research relied on so heavily through its early emergence and subsequent development are in many ways responsible for limiting its growth. The body of knowledge so far accumulated is based almost entirely upon the post hoc study of innovations which had already spread to some extent. In the West, a great deal was learned from retracing the diffusion paths of innovations as they spread through social systems. Stages from first awareness to final adoption were identified and mass media and interpersonal communication correlates of each established. Adopter categories were identified and characterized. The familiar S-shaped curve was struck, denoting the orderly sequence of adoption from the first innovators to the last laggards. Study after study confirmed and elaborated these findings. A cohesive body of knowledge emerged.<sup>3</sup>

When similar studies were repeated in Third World countries, however, a perplexing phenomenon was encountered. The S-shaped curve denoting complete adoption of an innovation was seldom found particularly within subsistence communities. Adoption rates were generally so low, that they produced curves truncated to considerably less than the total S. How to account for this?

Research generated by this question before the 1970s leaned heavily to searching out socio-psychological factors to explain why innovations failed to diffuse in Third World social systems as they did in the "modern" Western communities.<sup>4</sup> The findings labeled peasant masses as being past-oriented

traditionalists lacking in such presumably modernizing attributes as empathy, achievement motivation, innovativeness and deferred gratification. They also suffered from such constraining afflictions as fatalism and familism and other elements which Rogers<sup>5</sup> synthesized into the "subculture of peasantry." This portrayal showed peasants to be downright inhospitable towards innovations. It suggested an explanation for Third World diffusion failures in a way which tended to leave one bereft of any ideas for strategies to overcome these subcultural barriers. After all, short of mass psychiatry, what was the "cure" for lack of empathy or need achievement, to mention just a couple of the discouraging elements of the subculture of peasantry?

The facts are that the post hoc preoccupation with already diffused innovations provided researchers with few insights about strategies for "pushing" the process, for "causing" it to occur more rapidly, reliably, efficiently and completely. The researchers had grown increasingly long on generalizations and diagnostics and correspondingly short on practice and prescriptions.

One would have expected that mounting evidence of Third World diffusion problems would have impelled a maturation from this passive ex post facto methodological orientation to a more dynamic a priori experimental approach focused on testing alternative strategies for overcoming bottlenecks and accelerating the process of diffusion. Not so, however. Accounts of the elements of the subcultures of peasantry may have cooled experimental zeal. It may have made researchers wary of the possibility of tilting at windmills. Or it may be that diffusion researchers perceived themselves to be inadequately equipped to successfully manipulate those communication variables bound by mass media technology. Many of them were trained only in research methodology and technique, not in the arts and crafts of mass media production and publication.

Whatever the reason, apart from inconclusive flirtations with functional literacy programs<sup>6</sup> and radio farm forums,<sup>7</sup> diffusion researchers steered largely clear of field experimentation. The resulting dearth of experimental contributions to the growth of diffusion theory is perhaps why that theory is so stunted. It probably also accounts for the continuing delay in the emergence of the communication professional with the theory-based confidence to manage and direct hands-on diffusion campaigns in the Third World.

The effect of all this was to leave the burden of applied diffusion where it had always been--in the hands of other professionals such as agronomists, economists and nutritionists. Primarily trained to develop, test and recommend adoption of needed life-improving innovations, they found themselves saddled with the additional task of planning and carrying out their own diffusion communication campaigns. Their efforts produced for the most part the minimal effects observed by the diffusion researchers. Few were aware of the body of diffusion knowledge growing around them. Those who examined it found explanations of why their diffusion efforts met with so little success in peasant social systems. But they found little of use to help them remove or overcome obstacles impeding the process. Quite clearly, a misalignment existed between what the diffusion researchers chose to look at and what the development professionals actually needed. By and large, this misalignment persists to this day.

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This then was the state of diffusion research when, in 1970, one of the present authors joined a multidisciplinary team of researchers charged with evaluating Kenya's Special Rural Development Program (SRDP).<sup>8</sup> He was concerned about the misalignment between the focus of diffusion research and the needs of diffusion practice. Evaluating a number of development initiatives in progress, many of them dealing with the diffusion of agricultural innovations, offered an opportunity to examine the practice needs critically in order to determine what was needed to realign the research focus.

Kenya, having grown impatient with the slow rate of development in the rural sector of its economy, was persuaded early of the need to develop new aggressive strategies for speeding up the process of rural development and ensuring its equitability. It realised that one way to search for bolder initiatives was to throw itself open to experimentation. To this end, development scholars, researchers and professionals were invited to design strategies for field experimental testing. Many took up the challenge often under the aegis of bilateral and multinational sponsorship.

Prudence dictated the experiments be allowed only in controlled areas where they would be conducted on a small, innocuous scale. Only those which yielded

useful results were to qualify for widespread national replication. For this purpose, an ecologically representative cross-section of six divisions, out of over 600 in Kenya, were selected and designated special areas for experimentation. A division is the smallest unit of administration in Kenya.

The task of determining which experiments yielded results sufficiently useful to warrant national replication fell to the multidisciplinary team specially created to evaluate the SRDP. It was located at the Institute for Development Studies (IDS), University of Nairobi. Baseline research conducted in two divisions by members of the team<sup>9</sup> confirmed earlier findings of minimal diffusion effects. The prevailing diffusion strategy consisted of an authoritarian top-down model which reached only the same already-converted, over-endowed farmers over and over again. There was little evidence of "trickle-down" from them to the rest of the rural community. The strategy did not jibe very well with principles of equity<sup>10</sup> proclaimed in national manifestos.

Led by the various agricultural sciences often in collaboration with economists, public administrators, marketing specialists, road engineers and extensionists of various stripes, a number of experiments got underway, sometimes as many as three or four crowded side by side into the same division. All professed dedication to the same ultimate goal: raising the quality of rural life. Most aimed to achieve this goal through income generation by way of increased agricultural productivity.

For most of the experiments, the way to achieve increased rural productivity was via the diffusion of one agricultural innovation or another--high yielding seed varieties, including hybrid maize and millet, cash crops like cotton, pyrethrum and macadamia nuts; backyard garden nutritional foods; cultivation techniques of spacing, row cropping, contouring, weeding; chemical fertilizers and pesticides; artificial insemination for up-grading livestock.

The whole SRDP idea was, of course, to come up with strategies which impelled widespread adoption of these productivity-increasing innovations. Many tended to be somewhat uninspired variations of existing extension practice. Others were bolder. They included the training of a scattering of master farmers for followers to emulate; amalgamation of small farms into blocks for mechanized farming; incentive packages of credit, loans and farm inputs; communal ranches for livestock upgrading and veterinary control; special farmer training exercises;



and labor-intensive road building to generate employment income for investment in farm activity.

Also attempted was a communication experiment.<sup>11</sup> A baseline pretest revealed many farmers with no track record for adopting innovations. They were the traditional, illiterate subsistence farmers who presumably epitomized the subculture of peasantry. The experiment focussed on them. The dependent variable was adoption of hybrid seed maize and allied practices. The treatment consisted essentially of making hybrid maize knowledge and skills available to them in a fashion they understood and providing them with small amounts of the innovation for trial under supervision.

In 1972, two years into the experiments, the IDS team performed its first overall evaluation of SRDP.<sup>12</sup> Most of the experiments were found to be failing, victims of logistical problems, poor design, inadequate treatment of independent variables and bad management. Only a few initiatives appeared promising. Included among them was the communication experiment. It showed quite remarkable success with the sample of 217 small-scale farmers in the study. Virtually all of them had adopted hybrid maize. Moreover, each claimed to have influenced the adoption behavior of at least two others outside the sample. Quite clearly, what these peasants lacked was not empathy or innovativeness or need achievement. They lacked information, knowledge, skills and materials to effectuate adoption decisions.

This finding cast doubt on the universality and perhaps even the validity of the socio-psychological elements of the subculture of peasantry. It kindled a line of thinking which was quite new. Perhaps the main development constraints were not located inside the peasant but outside in his environment. Perhaps it was not his attitudes and beliefs that needed so much changing. Perhaps subcultural perceptions were mainly in the eyes of the beholders. Perhaps, after all, he was not that hidebound traditionalist whose resistance to change needed to be overcome by some powerful motivational push or some potent incentive pull as a prerequisite for development to occur. He may simply be surrounded by factors which, in one way or another, militate strongly against his adopting available innovations even if he wanted to.

Pursuing this line of thought, the evaluation team examined the peasant's social, economic and physical environment in search of those factors which were

acting in some inexorable, systematic fashion to prevent him from increasing his level of production. The picture which emerged suggested a number of bottlenecks ranged between the peasant farmer and the goal area of increased production, blocking off everybody save a hardy few from attaining that area. Five major bottlenecks were identified and elaborated by the team.

1. Lack of an Equitable Delivery System for Cognitive Inputs.

Farmers may have been simply unaware of productivity increasing innovations available to them. Even if they were, they may have nevertheless lacked the requisite knowledge and skills to make adoption feasible. Preventing them from acquiring this information and training was a system of delivering cognitive inputs which itself was too lacking in knowledge and skills of effective, reliable mass and interpersonal communication strategies, and too underpowered in terms of numbers and creativity to reach more than just a handful of peasants with its messages.

2. Lack of an Equitable Delivery System for Entrepreneurial Inputs.

Even if this first bottleneck was cleared, farmers may still have been prevented from adopting certain innovations because they lacked the necessary material and financial resources to invest in adopting them. Creating this bottleneck was a system of distributing loans, credit and farm inputs still too unresponsive to the small-scale, unbusinesslike needs of preliterate subsistence cultivators.

3. Lack of Marketing and Infrastructural Facilities.

Farmers may have found themselves too remotely situated from market places or too ignorant of marketing policy, or without feeder roads or public transportation linking them to markets, or without graineries and warehouses for surplus storage--in short, without all those facilitative infrastructural facilities without which adoption of innovations leading to surplus marketable production may be foolhardy.

4. Lack of People Involvement in the Development Process.

Farmers have been systematically excluded from effective participation in reviewing available innovation alternatives, evaluating them in terms of their own perceived needs and adapting them to their own way of life. This bottleneck

may exist because top-down-bottom-up interface systems permitting farmers to become involved in determining their own development destinies were missing. In the circumstances, they may be reluctant to entrust their livelihood to the judgemental vagaries of distant, alien others, regardless of the good intentions of those others.

5. Lack of Augmentative Rural Employment Opportunities.

Finally, farmers finding themselves underemployed on their small holdings or unemployed in the dry season, had few additional, off-seasonal opportunities for income-generating occupation in the rural areas because of a lack of rural public works such as labor-intensive road-building, or self-employment cottage industries or small-scale irrigation schemes for dry-season farming.

The point about these bottlenecks was that, in terms of broader objectives to improve rural life, no one of them could be successfully opened if the others were left to prevail. To do so was to fall prey to the fallacy of single factor determinism. The remaining bottlenecks would exert a levelling effect so powerful as to soon dissipate whatever gains were made. The way to lasting effects, it seemed clear from the SRDP findings, was through a concerted attack on all of the bottlenecks at once. Such ventures promised to be costly and the management logistics mind-boggling. Nonetheless, this sort of carefully coordinated, multidimensional, inter-disciplinary approach to achieving common goals leading up to the improvement of the quality of rural life seemed the way to go. It was consequently offered by the SRDP evaluation team as an operational definition of an increasingly popular concept in the 1970s: Integrated Rural Development.

These findings had greater implications for future development programs than for SRDP. Most of the SRDP experiments were narrowly-conceived single-factor efforts which collectively may have come close to addressing the broad-frontedness of the Kenyan problem had they been integrated with each other from the outset. The findings came too late to bring this integration about.

For the student of communication, the SRDP findings offered new explanations of why innovations spread so poorly in Third World countries. Factors beyond the control of the peasants were acting in concert to shut the majority of them off from adopting productivity-increasing innovations. The factor which lay

clearly within the domain of communication concerned the lack of equitable systems for delivering innovation information, knowledge and skills reliably and efficiently to peasant masses scattered through the rural areas. The SRDP evidence indicated that in Kenya, this bottleneck was one of the most constricting. Yet Kenya enjoyed the reputation of having one of the best-developed extension services in Africa. There is clearly still a long, long way to go towards opening the bottleneck up.

But opening just this one bottleneck by itself provokes the fallacy of single-factor determinism. To be effective, such a venture must be undertaken in concert with others, most probably in the context of large-scale integrated rural development programs in which provision for addressing many bottlenecks at once should be built in. If students of communication are to make any headway with seeking ways to overcome the particular bottleneck in their domain, they may have little alternative except to buy into such large-scale programs. It is, however, unlikely that they will be allowed in purely as research scientists intent on experimentation.

The price communication researchers may have to pay to get in is acceptance of the professional responsibility of designing and directing the entire communication component of such a program. What this role entails is an empirical question for study and elaboration while on the job.

Even if one is willing to make the commitment, suitable integrated rural development projects are few and far between. After SRDP, it took over three years before an opportunity to find a suitable program presented itself. In 1976, the present authors were contracted to establish an Information Support Unit for the Ministry of Agriculture of the Government of Ghana. Shortly thereafter, they found a suitable project.

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Since colonial times, Ghana's Ministry of Agriculture was served by a centrally located Information and Publications Unit. It produced bulletins, visuals and other stock-in-trade for the Ministry's field extension agents and their literate clients. It published a quarterly agricultural review magazine, a monthly extension newsletter and, in the 1970s, produced a weekly half-hour

TV program, The Agricultural Front. It also coordinated mass media dissemination of the Ministry's pronouncements and managed its public relations.

All through the fifties and into the sixties, the unit was happy to satisfy local expectations even if it failed to reach very many of the country's small-scale subsistence cultivators who numbered 95 percent of the agricultural community. The unit used a classic model of top-down communication inherited from colonial days. The model posited a sort of two-step flow of information and directives from national headquarters to field extension agents, and from them ostensibly to the masses but in reality only to a privileged few.

Then the unit fell on hard times. A rapid succession of military and civilian governments wrought such wrenching changes of policy and management upon the unit that it went into steep decline. By 1974, devastated by the flight of trained personnel and crippled by deteriorating equipment, the unit all but collapsed. This occurred just when the Ghana government was coming to realize that its industrial development plans were being impeded by agricultural underdevelopment.

With increasing attention directed to agriculture, especially the small-scale sector, need for the unit's services was rekindled. The Food and Agricultural Organization (FAO) of the United Nations was requested to design and execute a program of resuscitation and re-equipment with funds provided by the United Nations Development Programme (UNDP).

What the Government expected from this venture was simple restoration of a previously satisfactory service. FAO counseled decentralizing the unit's services into each of Ghana's eight regions to make it more responsive to rural needs. One of the present authors was engaged by FAO to formulate and eventually execute a project which met those objectives.<sup>13</sup>

He realized that prompt restoration of the service was essential to gain government confidence and support. But he also realized his own shortcomings. As a communication scholar in the diffusion tradition, he was ill-equipped in terms of mass media production know-how to handle the restoration alone. This led to the inclusion of a second team member, one who combined knowledge of print and electronic media technology with professional production and publication skills of mass communication.<sup>14</sup>

Particularly intriguing about the project was the notion of decentralization into the regions. Herein lay the possibility of creating the opportunity to become involved in some integrated rural development program in a way that would capitalize on the SRDP experiences. Expansion to all eight regions at once was logistically out of the question. Instead, focus on one pilot region was proposed. There a prototype role for communication in the process of rural development could be carefully worked out and tested for subsequent replication in the other regions. It remained for us to find that region.

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It took six months for the ideal project to materialize. Late in 1976, the Government announced the inauguration of the Upper Region Agricultural Development Program (URADEP).<sup>15</sup> This is a large-scale integrated agricultural scheme designed in essence as an experiment testing new decentralized approaches to rural development. It is armed with a five year development-investment fund of 54 million dollars subscribed by loans from the World Bank and Britain and local money from Ghanaian financial institutions and the Government itself. It is expected to show pay-off only towards the end of the investment period. It is currently in its third year of operation.

The Upper Region is the northern-most region of Ghana, the farthest from Accra, the capital city. Though separated from the Sahara by the Upper Volta Republic, signs of incipient Sahalianization are already in evidence. Long the most neglected region, these signs finally drew attention to it.

The program is dedicated to the well-being of the 125,000 subsistence farm families of the Upper Region, who make up about 10 percent of Ghana's population. Its main goal is to increase their agricultural productivity, first to make them self-sufficient in food and, eventually, to supply those in food-short areas elsewhere in Ghana.

URADEP was conceived on a large scale. It ranks as one of the largest programs of its kind in Africa. It covers an entire region which includes seven districts, each with several subdistricts. By way of contrast, a Kenyan SRDP division is comparable to a URADEP subdistrict. We were first attracted to URADEP because a climate of experimental permissiveness prevailed which

accorded very well with our needs. It was designed as an experiment in decentralization, a pilot-project to serve, if it worked out, as a model for other regions to emulate.<sup>16</sup> To this end, it was endowed with unique powers and lattitudes of operations unprecedented in development programming circles. Government empowered URADEP to take over the entire Ministry of Agriculture operation in the Upper Region. This included facilities, equipment, and a staff of nearly 2000. This power gave URADEP the lattitude to reorganize, retrain and redeploy the staff in ways consistent with overcoming development constraints which it determined.

Besides, the URADEP project document told of some powerful strategies that were slated for trial. They seemed addressed towards opening bottlenecks almost identical to those previously found in Kenya. The most exciting strategy dealt at once with overcoming lack of an equitable system for distributing financial and material farm inputs and lack of marketing and infrastructural facilities. Over 90 Farmer Service Centers (FSCs) were to be built throughout the region, such that no farmer would be more than 12 miles from one. A special commercial enterprise, the Farmers Services Company (FASCOM), was to be created to keep the FSCs supplied with farm inputs as well as to handle crop surplusses marketed through the FSCs.<sup>17</sup>

The bottlenecks which were least explicitly addressed were those which fell within the communication domain: lack of an equitable system for delivering innovation information, knowledge and skills; and lack of people-involvement in deciding their own development destinies. To deal with these, all the program envisaged was a small one-man communication department replete with offset printing press. It also proposed an Upper Regional FM radio network to broadcast in the predominant local languages. The communication department and the FM network were, however, not formally linked to each other in the project document. In the minds of the planners, communication was narrowly conceived as public relations, printed extension materials and newsletters. These were the very functions the unit we were restoring in Accra was set up to perform.

We bought our way into URADEP by persuading government of the wisdom of killing two birds with one stone: providing our FAO project with its pilot region while providing URADEP with its communication department. Inauguration of URADEP heralded the start of recruitment of its top officers, mostly foreign

experts in the agricultural sciences. Actual operations were to commence nine months later. The first officer appointed was the overall program manager, a singularly eclectic Ghanaian economist and top civil servant. We followed soon after. Together, we took stock of the prevailing bottlenecks constraining agricultural productivity.

The majority of small-scale farmers in the Upper Region are hand-to-mouth subsistence farmers who till the soil and raise crops and animals much as did their fathers and forefathers before them. Their traditional practices are based on their concepts of the most efficient use of their land, given resources available to them. Lacking financial means both to invest in cash crops and to tide them over till they harvested, their priority crops become those which guarantee their subsistence with minimum risk. Without labor to clear and maintain large tracts of land, they farm on small manageable plots, mixing their crops to ensure self-sufficient variety, the enterprise as much the responsibility of their wives as of themselves. Having neither the wherewithal to procure high-yielding seeds and inorganic fertilizers nor the knowledge and skills to use them, they practice shifting agriculture with traditional seeds, continually searching for new virgin lands to replace farmed-out ones. Unable to obtain loans to purchase bullock ploughs or hire tractors for deep ploughing, they scabble the land with a small-bladed, labor-intensive hoe and dibble corn and millet with a pointed stick.

But lately, the soil of small-scale farmers has begun to die.<sup>18</sup> Growing land pressure due to population increases is producing a movement from shifting agriculture to permanent cultivation. Relentless cropping of the same plot of land plus poor soil management practices like cultivating slopes without terraces and burning organic crop residues instead of turning them under, is lowering the fertility of the soil, leading to poor harvests and food shortages, which resulting in poor health, reduced work energy, diminishing productivity and so on as the quality of rural life spirals downwards.

The Upper Region farmers are evidently in need of help. The nature of this help is to be determined by a team of agronomists, soil scientists, conservationists and other agriculturalists which URADEP is assembling. Packages of innovations aimed at reversing the decline in productivity of small-scale agriculture are to be developed by these experts. Already, URADEP envisages



making chemical fertilizers,<sup>19</sup> improved seeds, bullock ploughs, loans and credit facilities widely available through the FSCs. Our initial task was to find out if there existed a system for diffusing these innovations in the Upper Region.

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Farmers in the Upper Region do not live in aggregated villages, but in extended family compounds located on their small holdings scattered all over the countryside. The majority of them have no access to roads. Feet for walking and heads for carrying loads are the main form of transportation. Radio, with its vaunted capacity to penetrate the remotest corners, seldom reaches them: there are few sets around, almost no batteries to run them and, besides, all the broadcast languages are alien to the Upper Region. Thanks to Ghanaian attempts to introduce universal education, most compounds can boast at least one person, usually young, with some literacy. But there are virtually no reading materials of any kind available in the rural areas, and the hard-won literacy is in danger of becoming lost. Fewer than five percent of all farmers have ever come into contact with any government extension agents. The few who have live near the seven district centers. So far as the peasant farmers of the Upper Region are concerned, they are almost totally isolated from any influences emanating from outside of their social system.<sup>20</sup>

Yet there are over 200 agricultural technical officers serving in the extension services of the Upper Region. All of them, unfortunately, are concentrated into the seven district capitals, rather than dispersed into the subdistricts where they belong. There is no housing for them in the subdistrict. Most of them are desk bound. They have no transport to venture more than a few miles out of town. There are no telephones linking them to their supervisors in the regional capital. Extension materials printed in Accra seldom reach them. Their training is strictly agricultural. It does not include methods of extension communication. They are demoralized men and women, outnumbered 600 to 1 by their rural clientele, equipped with little besides their mouths to accomplish their impossible task of increasing rural productivity.<sup>21</sup>

The picture which emerged for us was one of virtually no interface between the farmers of the Upper Region and the Government institutions set up to serve them. In SRDP 'bottleneck' terms, there was virtually no effective system for delivering agricultural information, knowledge and skills to any but an elite segment of the small-scale farming community. The question was what action to take to open this bottleneck up. For us as communication research scholars gingerly stepping into the immediacy of the domain of practice, this was our moment of truth.

What if we had chosen to work alone in a region, attempting to attack a bottleneck of the magnitude shown in the preceding paragraphs on a single-factor deterministic basis. Given the meager resources and small powers available to our somewhat lowly FAO project, the question of what to do to open up the bottleneck would have been frightening in the extreme, if not well nigh unanswerable. But we had chosen to piggy-back on URADEP. In this context, answering the question became feasible, thanks not only to URADEP's formidable financial clout and unique powers to rearrange and regroup staff, but also to the multifactor dimensionality of URADEP which made it possible, as we shall show, to link strategies together in mutually strengthening ways.

It seemed obvious to us that half the answer to the question consisted essentially of modifying the government institutions serving the Upper Region people, of reorganizing the rural services and retraining and redeploying their personnel in ways that would maximize the quality and quantity of useful interaction along the line of interface between them and their rural clientele. The other half of the answer required the creation of farmer organizations capable of participating in decision-making interaction with the modified government institutions. To this end, a series of actions, one often pointing to the next, were initiated in 1977 and are still in the process of being implemented at the present time.

A logical place to start was with the extension system. The agricultural technical officers had to be moved out of the seven district centers where they were inaccessible to the majority of farmers and dispersed deep into the rural areas. We felt the network of over 90 FSCs, already proposed as the way to overcome input distribution bottlenecks, was the answer. Redeploying agricultural officers in the FSC network would place an officer within 12 miles

of most of the Upper Region farmers.<sup>22</sup>

It also would put him in contact with the FASCOM agents responsible for marketing farm inputs at each FSC. The need for this union is obvious: they both cater to the same client, one to his material farm needs and the other to his related cognitive farm needs. It therefore made sense for them to offer a jointly packaged service and to maintain joint record keeping.

The farm store aspect of the FSC is expected to draw farmers to the center where the extension agent will be able to make contact in the process of offering advice and information concerning the purchases they intend to make. This implies systematic follow-up on farms. To increase his mobility, the agent is being provided with a motorcycle, and he will be assisted by two to three lower level agricultural assistants, each with a bicycle.<sup>23</sup>

But the extension workers were only half the interface we had turned our attention to. Under the URADEP tenet that you cannot help a person permanently by always doing for them what they should do for themselves, the next step was to create a system that involved farmers in the management of their FSC. By requiring registration of all farmers seeking to avail themselves of FSC services, a membership was created which over time could be guided towards taking over the civic responsibility of managing the FSCs through duly elected management committees.<sup>24</sup>

A mechanism has also been devised whereby the FSC membership can obtain increasing fiscal control of their FSC. A small mark-up placed on all items sold through the FSC farm store generates this equity. This mark-up is accumulated in a special escrow account until the management committee comes on line.

Starting out as 'pump priming' organizers of FSCs and their management committees, the extension agents will increasingly take the role of resource people and initiators of new members, available to help the management committees to achieve whatever goals they set for themselves. They will also represent the interface linkage between the FSC management committees and the management of URADEP.<sup>25</sup>

The concept of the FSC thus grew from its original single-factor orientation to a multipurpose facility which is at once a village store for all

manner of farm inputs and other consumer goods, an extension center for agricultural information, advice and training, and a meeting place for the management committee. It is envisaged these FSCs will become the hubs of community-oriented activity, attracting additional services of health, education and social welfare.

Such widely dispersed centers require a quick and reliable way of exchanging information with district and regional headquarters. But in large parts of the Upper Region, messages routinely take days to travel a few miles. Indeed, during the rainy season when agricultural activity is at its height, road transportation relied upon to convey messages often becomes immobilized.

To help overcome this problem, an FM radio station with one relay is under construction and due to be commissioned in mid 1980. This station will originate 54 hours per week of radio programming, broadcast initially in three of the major tribal languages of the Upper Region as well as in English. Cheap fixed-station radio sets will be marketed through the FSCs along with batteries.

The radio will be URADEP's channel for keeping farmers abreast of what is happening in FSCs around the Region. It can remind them to apply the techniques being learned from extension agents such as when to plant, to weed, to thin, or to apply top-dressing. It can teach them about conservation and the dangers of bushfires and coordinate attacks against invasions of army worms or outbreaks of foot and mouth disease. It can keep field staff informed of URADEP policy and developments and issue directives to them. The radio can entertain as it educates, fostering a community spirit even as it reveals the rich cultural diversity of the region.

Completing the feedback loop is a two-way radio communication network, linking each FSC with a district base station through mobile sets in vehicles that travel a regular beat among four or five FSCs. Each of the district base stations are linked to a mother station in URADEP headquarters which, in turn, is linked to a base station in the Ministry of Agriculture headquarters in Accra.

We foresee creative use of these radio communication systems. For example, an extension agent anywhere in the region will be able to call in and have the radio station broadcast a spot announcement, in the appropriate language, for

the farmers of his FSC to gather at a given place for a field day, or for the local management committee to convene a meeting. Without radio, arranging such activities could take a week of bicycling along footpaths.

The agricultural technical officers placed as extension agents in the network of FSCs will number somewhat over 100, some FSCs being in densely populated areas and requiring more than one officer. The balance of officers are being retained in the district center because of specialized functions they perform. At least seven of them are supervisors of the staff in the FSCs located in their districts. Others are "subject matter specialists" in veterinary, fishing or irrigation work. They are few in number and best deployed in the district centers where they can assist several FSCs at a time. URADEP, for instance, plans to build or rehabilitate some 200 small dams throughout the regions. Many of these dams will include small irrigation schemes and small 'fishpond farms' to augment employment for farmers and increase the off-season supply of food. Most FSCs are likely to wind up with one or more such dams within their jurisdiction. These FSCs will be able to call on irrigation or fishpond specialists whenever need for them arises.

Since the inception of URADEP, about 35 FSCs have become operational. Membership is purely voluntary. As expected, the farm stores with their new deferred payment credit facilities have been the main drawing card. Fertilizer has been in greatest demand, though this may change once the stores are carrying a full range of goods. Initial membership is running at about 20 percent of potential, there being an average of about 1,400 farm families per FSC. This provides more than enough work for FSC staff, who have so far found no need to beat the bushes for customers.

But still, the aim is to reach all farmers equitably. For this to happen, the system being set up will have to grow and this takes time. Meanwhile, existing staff needs training in techniques of multiplying their effects through group communication and the creation of extension surrogates, known in URADEP terms as "contact farmers." In addition, they require extensive back-up support, such as printed extension materials to take advantage of whatever literacy exists in the rural areas, and visual aids specially tailored to each FSC's specific needs.

These considerations gave rise to our most ambitious and far reaching contribution to URADEP: the establishment of the Institute for Field Communication and Agricultural Training (IFCAT).<sup>26</sup> Occupying the premises of a defunct agricultural institute for sons of farmers, IFCAT is responsible for providing inservice training in extension communication for all the agricultural officers deployed in district centers and FSCs. It also provides agricultural training for all the lower level technical assistants being recruited to help out in the FSCs. In addition, it has provided training in organizational communication for the senior staff and management of URADEP, its parent organization.

Communication back-up services have also been located at IFCAT, where a visual communication design center complete with a fully equipped offset printing workshop and photographic studios and darkrooms has now become fully operational. IFCAT is also responsible for training over 20 locally recruited staff members in radio production techniques, in preparation for the inauguration of an Upper Region radio station. An abandoned chicken brooder house on the IFCAT campus was converted into an up-to-date radio training studio.

IFCAT, however, was finally more than URADEP could afford. URADEP's original plan and budget had envisaged a much more modest communication component. IFCAT was also more than we ourselves could handle without additional training personnel. Technical aid needed to be found elsewhere. Our initiatives bore fruit in Holland in the form of a four year, two million dollar project expressly designed to strengthen IFCAT through the infusion of extension communication expertise, visual communication expertise and technology, and radio training specialists and equipment. The Dutch project included back-up from Radio Netherlands and from the Dutch State Publishing Works.<sup>27</sup>

Looking back on all the communication support activities just reviewed, it is evident that there is little emphasis on developing strategies involving techniques of persuasion and motivation directed specifically toward overcoming rural inertia or toward changing attitudes of traditional people. Rather, the emphasis is on organizational change. This is because we recognized ineffective structures of certain existing organization and absence of certain other kinds of organizations as combining to constitute a formidable barrier to rural change. Based on the SRDP supposition that the most effective barriers

to change were located outside the individual peasant farmer rather than inside him, we resolved to take care of the organizational problems we recognized to test the validity of that supposition.

Specifically, we recognized that organizational problems existed on both sides of the government/farmer interface. On the government side of the interface, our activities were dedicated to modifying and rearranging the old institutions responsible for providing agricultural services. Our goal was to create an integrated communication system capable of orchestrated delivery of agricultural information, knowledge and skills to the farmers of the Upper Region.

On the farmer side of the interface, our activities were dedicated to filling an organizational gap--lack of self-determining farmer organizations capable of participating effectively at the interface with the government institutions set up to serve them. Our goal was to create local farmer organizations with management committees capable of representing farmer interests and of exploiting available government services and resources to their benefit.

Regarding URADEP as a large, albeit untidy experiment, these two sets of activities on either side of the government/farmer interface, describe the independent variables we sought to manipulate under the hypothesis that change, exemplified by the adoption of productivity-increasing innovations, would occur on a voluntary basis once all external barriers were removed. The URADEP experiment is still in midstream. It is too early to determine whether our hypothesis is supported.

But, as many researchers have been wont to observe, the indications are pointed in the right direction. In the circumstances, it may be timely for us to state broadly the emergent role of the professional communication specialist in development programming. This role, as we see it so far, has two major functions.

In the first place, the communication specialist is responsible for determining the nature of interaction between government rural assistance services and farmers at the interface. The activities in the URADEP context culminating in the determination of little interaction at the interface

exemplify this responsibility. Creating new institutions and modifying old ones to maximize the quantity of this interaction become the most substantive and demanding aspect of this responsibility.

Once the institutions are created, the second responsibility of the communication specialist is to create activities to maximize the quality of the interaction at the firing line. This essentially consists of providing the personnel on the government side of the interface with training in principles and techniques of communication to enable them to render their innovative offerings in a manner readily consumable by the farmers.

Finally, we would like to draw attention to the frequency with which the word "create" has been used in the concluding paragraphs of this paper. We wanted to underscore the fact that the role of professional communication specialist is demanding of much creativity often requiring inspired leaps of the imagination. Communication Support is indeed a challenging art. We found that our communication training provided a substantial basis for meeting this challenge. We, therefore, encourage our fellow communication scholars to come on in, the water is fine.





## NOTES

<sup>1</sup>In recent years, the unquestioning acceptance of technological innovation as a development strategy has been queried by some of its most influential past patrons, who point to a 'pro-innovation bias' as one shortcoming of past diffusion research. See Everett Rogers in Communication and Change, Wilbur Schramm and Daniel Lerner, eds., Honolulu, Hawaii: University Press of Hawaii, 1976, p. 220.

<sup>2</sup>The underlying assumption of an evolutionary process of social change is criticized historically in Don Martindale's article "The Crisis in the Contemporary Theory of Social and Cultural Change," in Creating Social Change, Zaltman, G., et. al., eds., New York: Holt, Rinehart and Winston, Inc., 1972, pp. 8-22. An early but specific attack on modernization as a unilinear process of development is found in Richard Bendix's article, "Tradition and Modernity Revisited," Comparative Studies in Society and History, Vol. IX, 1966-67, pp. 292-346.

<sup>3</sup>Rogers, Everett and Shoemaker, F. Floyd. Communication of Innovations: A Cross-Cultural Approach, New York: The Free Press, 1971.

<sup>4</sup>For a broad though brief review of the variety of sociological and psychological theories relating to the failure of Third World citizens to modernize, see Anthony R. de Souza and Philip Porter, The Underdevelopment and Modernization of the Third World, Washington, D.C.: Association of American Geographers, Resource Paper, No. 28, 1974, pp. 16-18. See also, sections of Frederick Frey's chapter, "Communication in Development," in Handbook of Communication, de Sola Pool, I., et. al., eds., Chicago, Illinois: Rand McNally College Publishing Company, 1973, pp. 337-433.

<sup>5</sup>Rogers, Everett M. Modernization Among Peasants: The Impact of Communications, New York: Holt, Rinehart and Winston, Inc., 1969, pp. 19-38.

<sup>6</sup>Functional literacy, the experimental topic of several significant research projects funded principally by UNESCO in the 1960's generated a variety of pilot programs throughout the Third World. However, this experimentation was devoted to only a single communication channel (print) and as found in Ascroft's evaluation of a Kenya pilot project (An Evaluation Report on the Functional Literacy Pilot Project of the Special Rural Development Program of Kenya, Institute of Development Studies, University of Nairobi, 1973) they tended to lack sufficient integration into other development assistance efforts in the client's social system.

<sup>7</sup>The Farm Forum has enjoyed a long history of experimentation mainly in India and Latin America. The authors have no argument with this development strategy per se. However, radio is a channel that continues to be inaccessible by large numbers of the rural population which live in scattered compounds and speak languages without a sufficiently wide base to justify national or even regional broadcasting. The use of cassette tapes as a type of localized forum input which was generated by research on broadcast radio is a more appropriate method in many circumstances.

<sup>8</sup>The Special Rural Development Program grew out of a conference held in Kericho, Kenya in 1965 at which the Government of Kenya as executor, several donor agencies as funders, and the University of Nairobi as evaluator, entered into a tripartite agreement to experiment with new strategies for accelerating rural development.

<sup>9</sup>Ascroft, J. "The Tetu Extension Pilot Project," in "Strategies for Improving Rural Welfare," Nairobi, Kenya: University of Nairobi, Institute for Development Studies, Occasional Paper 4, 1971.

<sup>10</sup>Roling, N.; Ascroft, J.; and Chege, F. "The Diffusion of Innovations and the Issue of Equity in Rural Development," in Communication Research, Vol. 3, No. 2, Sage Publications, Inc., 1976. (Reprinted in International Review of Community Development, Rome, 1977).

<sup>11</sup>Ascroft, J.; Roling, N.; Kariuki, F. Extension and the Forgotten Farmer, Wageningen, Netherlands: Afdelingen Sociale Wetenschappen van de Landbouwhogeschool, Report 37, 1973.

<sup>12</sup>Ascroft, J. (coordinator). "The Overall Evaluation of the Special Rural Development Programme," Nairobi, Kenya: University of Nairobi, Institute for Development Studies, Occasional Paper 8, 1973.

<sup>13</sup>The Development Support Communication Branch of the Information Division of the Food and Agriculture Organization sent a two-person project formulation team to Ghana. It consisted of Kay Killingsworth, a project evaluation officer, and Joe Ascroft, a communication consultant from the University of Iowa. They spent two weeks in 1975 working with the Ghana Government to formulate a project which was finally operationalized in February 1976.

<sup>14</sup>This position was eventually filled by one of the authors, Gary Gleason. He was recruited by FAO from the doctoral program in mass communication research at the University of Iowa.

<sup>15</sup>URADEP grew out of a joint World Bank, United Kingdom, Ghana Government Appraisal mission in 1975. The program is an adaptation of similar, infrastructure-institution-service projects funded through World Bank loans in Malawi and Northern Nigeria. The operational model for the project was contained in Report No. 1061a-GH, Appraisal of Upper Region Agricultural Development Project Ghana, World Bank Document, June 3, 1976.

<sup>16</sup>The Ghana Government has similar integrated programs in the planning stages for Western, Northern, Volta and Brong Afro regions. Foreign exchange and administrative and technical assistance for these programs will likely come from the European Economic Community, the Canadian Agency for International Development, and the World Bank.

<sup>17</sup>The Farmer Services Company was established as a condition of the World Bank loan effectiveness. The ownership of the company would be jointly held by the Government, a consortium of Ghana banking institutions, and by the region's farmers. A similar company has proven highly effective in generating farmer participation and efficient farmer supply and marketing systems in Malawi.

<sup>18</sup>Korem, Albin. "The Dying Soil of Small-Scale Farming," in The Ghana Farmer, Accra, Ghana: Information Support Unit, Ministry of Agriculture, Vol. XXVIII, No. 1, 1978, pp. 15-17.

<sup>19</sup>While the URADEP appraisal report listed chemical fertilizer as an essential innovation for increased production on Upper Region's small-scale farms, its escalating cost based on increased petroleum prices, transportation problems and gradual reduction of Government subsidies required reevaluation of its suitability by URADEP and FASCOM during its first three years of operation. Emphasis on production and use of organic fertilizer has been increased substantially and may prove to be the most appropriate alternative for most small farmers. The URADEP, unlike many projects, is capable of reworking its goals to accommodate such a major change if necessary.

<sup>20</sup>A baseline survey of a sample of 427 farmers in one subdistrict of Ghana's Upper Region provided the authors with data on pre-URADEP farming practices, informal and formal communication systems, extension contact, adopter rates, awareness rates, and demographics.

The URADEP's Monitoring and Evaluation Division is charged with periodic replication of similar surveys on a regional basis.

<sup>21</sup>The authors conducted a series of "familiarization" courses for over 200 extension workers in early 1977. While these personnel had the structure and goals of URADEP explained to them a forum was opened to obtain information from them about pre-URADEP institutional conditions and their expectations for the program.

During these courses, the authors determined that the technical skills of the majority of officers was much higher than the appraisal report implied. However, their knowledge of communication and community organizational skills was found to be low. Their major immediate concerns were with job resources such as transportation, and organizational problems such as job benefits and pay.

<sup>22</sup>The FSC structure outlined in the Appraisal Report held only elements of input sales (FASCOM) and farm implement repair (URADEP).

<sup>23</sup>Extension officer transportation means was viewed as a component of the interpersonal communication systems potential coverage of the region. In addition, motorcycles and bicycles given through zero interest loans was an effective method of improving staff loyalty and boosting morale.

24 In each step toward decentralization and increased participation there was also an element of control which could not be ignored given the problems of past corruption and smuggling of inputs to neighboring countries.

25 Although the primary interface for development remains in our perspective that between the farmer and the service institutions several others higher up within the institutional system itself and between, for example, URADEP and the Ministries, URADEP and its funding agencies and URADEP and other potential resource institutions were not eliminated from the overall communication support system. Ultimately, changes in the institutions affecting these interfaces and ultimately, the ability of URADEP to service the farmers required considerable and various types of communication related input.

26 IFCAT is a 50 acre facility located outside of Navrongo in Ghana's Upper Region. It has numerous classroom facilities, dormitory space for 100, a visual communication block, radio training studio, administrative offices, staff housing, gardens, workshop and agricultural facilities. The rehabilitation of the Farm Institute and additions required to create a modern facility was funded by URADEP, the Regional Administration and the Dutch Government at a cost of over three million dollars. Annual budget is over one and a half million dollars. The originally planned staff was for one expatriot and nine Ghanaians. The original budget for the Communication and Training Division including IFCAT for five years was \$280,000.

27 The Dutch input into URADEP reflected a desire by the International Agricultural Centrum (IAC) to move a component of its Agricultural Extension Communication Training into a Third World country. The tailoring of this goal to the needs of communication support of URADEP resulted in inclusion of project components from the three government institutions. The resulting project was named Training in Rural Extension for National Development (TREND).