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NON-FORMAL AGRICULTURAL EDUCATION IN NEPAL:
AN EXPLORE AND DISCOVER EXERCISE

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William J. Kieffer
Michigan State University

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NON-FORMAL AGRICULTURAL EDUCATION IN NEPAL:
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FOREWORD

Many forces culminated to produce this report. Not only was there the opportunity of traveling to Nepal to engage in field work, made possible by MSU and AID (AID/csd-3279), but much discussion by a weekly mini-seminar* on non-formal education preceded this overseas exercise.

The Nepal experience (6 July-2 September, 1972) was not supposed to be, nor designed to be, an in-depth study; but rather an 'explore and discover' exercise to learn as much as possible about non-formal education in Nepalese agriculture. The main effort was directed at the recipients' (farmers) learning experiences, yet some attention was given to the governmental non-formal education superstructure. The purpose of this report is to describe these findings and to analyze their relationship.

I had been in Nepal in the Peace Corps (1964-65). Having lived and worked there before, I am familiar with the country, the people, the culture, and still remembered some of the language--all of which promoted accessibility to the main area of concern.

Dr. George Axinn, Executive Director of MUCIA and professor of agriculture at MSU, was the supervising professor, both in East Lansing and in Kathmandu.

I also wish to thank Randa Arman, who did most of the laborious job of typing and re-typing this report.

* (Much of this group's thinking is reflected in the paper Toward a Strategy of International Interaction in Non-Formal Education.)

Definitions

Definition of Non-Formal Education

Although non-formal education has been going on longer than formal education and still accounts for more learning than does schooling, one of the difficulties in working in non-formal education is the lack of an adequate definition. This is not to say that definitions have not been offered, for numerous discussions appear in the literature as to the meaning of non-formal education. Such people as Harbison, Callaway, Anderson, Brembeck, Paulston, Guyot, Hilliard, Coombs, Hardin, and others have identified several characteristics of the phenomena. Below is a composite list of non-formal education characteristics as viewed by these men:

- Skills and knowledge that are job related and promote individual and national development.
- Outside of the conventional academic structure of the formal school system.
- Diverse and unstandardized purposes.
- Few, if any, "professional" teachers officially certified by the Government.
- Basically a non-academic methodology.
- No literacy admission criteria.
- Diffused educational responsibility.
- Non-documented educational superstructure.
- A learning environment that is work related, useful, and oriented to immediate action.
- Student-motivated learning.
- Effective learning based on functional needs.
- Much of non-formal education is non-conscious learning.
- Great emphasis on the learner's cognitive style.
- More emphasis on practice than theory.
- Greater emphasis on mass education than on elite education.
- Local control.

Visibility is minimal.

Low monetary admission costs.

Tangible pay-offs geared to daily life and increased productivity.

Close student-teacher interaction.

Discreet and diffuse subject-matter units.

Educational goals square with social values.

Purposeful education.

To date, much of the thinking regarding the definition of non-formal education is defined as what formal educational systems are not, that is, non-formal education does not have many of the characteristics of formal education: literary-skills oriented (3 R's), little need for long-term fact retention (after the test), deferred usage of what is learned, graded by age level, degree or certificate granting, broad-range subject-matter curriculum, long-duration programs, certified teachers, a formal administrative hierarchy that grows more complex and permanent, a separation of students and teachers from each other and from both the society and the world of work, deferred or manufactured rewards to motivate learning, and specific amounts of time devoted to each subject area (each of which is sharply defined). Formal education is sequential and compartmentalized, students must qualify for admissions, control and motivation is teacher-oriented, there are grades to reward learning, and the whole educational effort is elitist. Form and criteria are the hallmarks of the formal end of the educational continuum, whereas substance and function are characteristic of the non-formal end.

In almost every social institution, whether formal or non-formal or informal, all three types of learning (formal, non-formal, and informal) occur. The education offered in a formal structure (university) can be non-formal in that the student may decide to learn for reasons ascribed to non-formal education.

Other Definitions

Throughout this report a number of terms and abbreviations are used that are here defined.

AMC or ASC - the Agriculture Supply Corporation (ASC) changed its name, and supposedly expanded its function, in the summer of '72 to Agricultural Marketing Corporation. The significant role they play is supplying agricultural inputs to the farmers.

DADO - District Agricultural Development Officer. The six regions are divided into districts, the agricultural development of which is overseen by a DADO.

Hills - the mountainous areas of Nepal, i.e., as opposed to the Terai.

Higher Education Degrees -

I.Sc.Ag. Diploma - an Intermediate Science in Agriculture, a 2 year, post-SiC certificate

B.Sc.Ag. Degree - a Bachelor's of Science in Agriculture

M.Sc.Ag. Degree - a Master's of Science in Agriculture

(Only the I.Sc.Ag. was offered in Nepal, to study further one had to go to India or abroad. Plans are to expand the facilities at IAAS to also educate B.Sc.Ag. students.)

HMG - His Majesty's Government

JTA - Junior Technical Assistance is the front-line extension agent. The basic link between the government and the farmers.

JT - a Junior Technician is supposed to assist the DADO and provide support to the JTA's in the agricultural development of the area.

LDC - less developed country.

NFE - non-formal education

Panchayat - a low-level unit of government that consists of a number of villages, who together elect representatives to the next higher level of government and so on through the levels to the National Panchayat, a body of representatives that plays a role in national politics at the highest levels.

Panchayat democracy affords the citizens an opportunity to vote for their representatives.

PCV - Peace Corps Volunteer. Many American volunteers are serving in agriculture in Nepal, and are working through the Nepalese Agriculture Extension Department as PCV/JTA's.

Pradhan Panch - the highest elected official of the local panchayat.

RADO - Regional Agricultural Development Officer. Nepal is divided into six regions for agricultural development, each region has a RADO.

SLC - the School Leaving Certificate is like the American high school diploma.

To earn an SLC, the Nepalese student must pass a government examination.

Terai - the flat lands before the mountains. A twenty mile strip along the whole southern portion of Nepal, from east to west.

LEADING QUESTIONS
-PARAMETERS-

Each social system carries out all vital services needed for that society to function. Therefore, outside forces should first become aware, as much as possible, of how the existing system functions before any meaningful efforts to change that system are undertaken. My overall operating procedure was one of "exploring" the existing non-formal education system in agriculture and "discovering" how it functions.

Several areas of concern are put forth in the end of the paper - Toward a Strategy of International Interaction in Non-Formal Education. Of specific interest to the Nepal study are the questions dealing with the state of non-formal education in a cultural system, with special emphasis on the channels of learning; the nature of the variables within each channel; the kinds of non-formal education associated with the formal educational structure; and the characteristics of government-sponsored and semi-government sponsored non-formal education programs.

The non-formal education concerns developed by the previously mentioned mini-seminar are reproduced here; these are the areas that received special attention during the field exercise -

- 1) What kinds of government-sponsored non-formal agricultural education programs are offered in Nepal?
- 2) Describe the non-formal education that is occurring among Nepal's agriculturists.

2 A) Specifically, what kinds of non-formal education are going on in such places as

- the family
- the productive work place
- the market place, streets, and elsewhere in the village
- the religious establishment
- recreational facilities
- the places where people eat and drink
- and as part of the travel experience as people move from place to place

2 B) What is the nature in each instance of non-formal education with respect to --

what sort of teaching-learning methods are used?

how the material to be taught is organized?

who teaches?

who teaches the teachers?

who is taught and how is he/she selected?

who pays for the education offered (the student)?

how is the program or process administered or organized?

the expected end product: a skill, social behavior, or abstract knowledge?

and, is the educative process supported by the rest of the society?

3) What kind of non-formal agricultural education is going on in association with formal educational system in --

- the public sector
- the private sector
- the primary level
- the secondary level
- the tertiary level

These were the areas of interest in the 'explore and discover' approach to the field survey. Obviously, in eight weeks, no comprehensive study could be conducted, nor were all the above sub-points thoroughly explored; as much as possible was done under the field circumstances. The above listed 'Leading Questions' were used only as a guide to direct the conversations with Nepalese farmers and government personnel.

EXPLORATION--METHODOLOGY

Because of the nature of an "explore and discover" exercise, there were no expected answers or conclusions taken to the task. To discover what was happening in non-formal agricultural education in Nepal, I started by asking some open-ended and some specific questions of farmers who were in fields planting or weeding rice at the time. Since a major concern was the recipient, this was the logical place to start. The investigation led to continual modification of the questions and to other areas of non-formal education in agriculture, e.g., organized governmental efforts.

In terms of a detailed, pre-tested questionnaire, there was none. Indeed, a study within a clearly defined area of investigation is not an "explore and discover" exercise but one in which much is already known, the parameters already well defined, and the need is for greater in-depth understanding of a narrow focus. This study, however, is of a broad design, attempting to discover the parameters and the variables of non-formal education; the only real restraint was that the investigation be limited to non-formal education in Nepalese agriculture and limited by time. Within such demarkations, I was free to "explore and discover."

The information gathered was done so mainly by talking to a wide variety of people--both Nepalese and non-Nepalese--in a variety of positions--both in government and out--in a variety of locations--both in Kathmandu Valley and out--about the nature of non-formal education in agriculture. It was in this manner that the process of discovery was used to study people in their situations.

"Since a major part of what is happening is provided by people in their own terms, one must find out about those terms rather than impose upon them a preconceived or outsider's scheme of what they are about. It is the observer's task to find out what is fundamental or central to the people or world under consideration."*

*John Lofland, Analyzing Social Settings, Wadsworth Publishing Co., 1971, p. 4.

Recipient Oriented:

Nepal during the summer monsoon months offers both advantages and disadvantages to the researcher. The one overwhelming advantage is that the farmers are easily located--all are in their paddies preparing the land, transplanting, or weeding their crop.

I began simply by going to the fields with a translator and asking questions--the first one being, would they be willing to talk to me (an American student studying Nepalese agriculture) and would they mind if I wrote down their answers because their opinions were important to me and I did not want to forget anything they told me.

The use of a translator was necessary, for not all the farmers spoke Nepali. But of those who did, I understood about 50% of their answers without having them translated back into English. A translator was necessary to formulate the questions and to pursue the answers in depth.

The major disadvantage of doing research in Nepal in the summertime is the uncertainty and difficulty of traveling around the country. For example, soon after I arrived in country, the airport closed down because of rain and overcast, and the only road out to the south was closed by landslides. Cancelled flights and a fluid travel schedule plagued the entire project.

With these difficulties as an accepted fact, I went where I could when I could. Farmers were reached by either bicycle, walking, jeep, or in combination. One technique I found most useful was to pick up in the jeep in which I was riding Nepalese walking along the road and ask them about what was going on in the area and where I could find certain kinds of people to talk to. I usually interviewed these passengers, too.

Often an interview started with one, but ended by many answering the questions, for a Westerner being in such unexpected places as rice paddies attracts attention. People began to gather and take part in the information flow.

Organization Oriented:

Exploring the official government agencies about their non-formal education programs in agriculture was somewhat easier. All the officials I encountered spoke English (and therefore no need for a translator) and were all willing to talk with me (not the case with all the farmers).

The following is a list of the governmental personnel contacted:

Director of Agricultural Extension Department

Chief of Agricultural Information Services

Head of In-Service Training for Agriculture Extension Agents

Regional Agricultural Development Officer (RADO)

District Agricultural Development Officer (DADO)

Junior Technician (JT)

Junior Technical Assistant (JTA)

Experimental Farm Personnel

The major obstacle encountered in dealing with some of these officials was the lack of communication in making appointments. One would just have to journey to the official's office in the hope of finding him in, which was not always the case. The other office personnel would smile sympathetically, but they could not say for sure when the official in question would return.

Information was also secured from sources other than Nepalese farmers or government officials. These include Peace Corps Volunteers, ex-PCV's still in Nepal, PCV/JTA termination reports, AID/SIU reports, USAID personnel, and to a lesser extent technicians of aid projects from other countries.

A sample copy of the kinds of questions put to the farmers is included in the Appendix.

Discovery

Since the major focus of the entire exercise is on the recipient, this section starts by describing the findings as gained through discussions with many farmers of different castes in various locations in Nepal. The latter part of this section covers information gained in interviews with government officials and from reports of various agencies.

Some questions were designed to gain an understanding of the background of the farmer being interviewed. A mapping of the farmers' learning process reveals that in the main agricultural attitudes and fundamental skills are learned within the traditional farming family--an internal process of father teaching son and mother teaching daughter. All the farmers interviewed had always been farmers; their fathers before them had all been farmers. Their basic agricultural knowledge had been learned within the context of the family as they were growing up (an internal learning process).

All were married and all had children--some young, some older with children of their own. The size of the families varied. (A mere definition of 'family' was difficult because the farmer considered his grandchildren as part of his family, especially if all were living in one household.)

Other questions attempted to explore the points-of-entry external to the family through which new agricultural information and skills were gained. The sources of useful knowledge of new and different techniques, such as improved seed, chemical fertilizer, and insecticide, and how the farmer learned of these improvements were the focus of the discussions and questions. This information provides for a simple mapping of the sources of learning outside of the family.

The following section consists of one page dealing with farmers' responses to the issue on that page and the following page either summarizing the same

information or discussing these findings. The numbers listed under FARMER identify the individual farmer interviewed and the various answers to characteristics corresponding to each respondent. For example, the third farmer interviewed was a Jyapu (Newar) and he lived and worked in Kathmandu Valley. The blank slots indicated that this information was not obtained, usually for lack of time to get to all items before the interview was interrupted.

<u>FARMER</u>	<u>CASTE</u>	<u>LOCATION</u>
1.	Newar - Jyapu	Kathmandu Valley
2.	Newar - Jyapu	" "
3.	Newar - Jyapu	" "
4.	Newar - Jyapu	" "
5.	Newar - Jyapu	" "
6.	Brahmin	(Inner) Terai
7.	Brahmin	"
8.	Brahmin	Hills
9.	-----	"
10.	Chetri	"
11.	Chetri	"
12.	Brahmin	"
13.	Brahmin	"
14. also an AMC dealer	Brahmin	"
15. also a Pradhan Panch	-----	"

Fifteen farmers were interviewed at different times throughout the study. They were interviewed in the sequence as they appear 1-15. Number 14 was also an AMC dealer and number 15 a pradhan panch.

All the farmers interviewed in the Kathmandu Valley were Jyapurs (Newar), which is representative of that location.

Among several people contacted in the Terai and Inner Terai, the only two farmers interviewed were both Brahmin, one of whom is a progressive farmer.

In the Hills the farmers are of many castes, but it so happened that those contacted were either Brahmin or Chetri. The caste composition of the farmers in the Hills would depend somewhat on the locale within Nepal, i.e., in some areas, certain castes predominate.

Even though rich and poor farmers are found in all castes (caste not guaranteeing success in agriculture), neither do these findings suggest that agricultural success or failure are evenly spread among the castes practicing agriculture. Further study has to be made to determine whether one or another caste tends to be grouped among the richer, poorer, or progressive farmers.

AMOUNT OF LAND CULTIVATED

<u>FARMER</u>	<u>WORKED</u>	<u>OWN</u>	<u>RENT</u>
1	4R	X	
2	--	--	--
3	2R	X	
4	7R		X
5	2-3R	X	
6	19½R	X	
7	5R	X	
8	25R	17	8
9	--	--	--
10	35R	X	
11	4R	2	2
12	48R	X	
13	32R	15	17
14	10-12R		X
15	40R	X	

R = Ropani / 8 Ropani - 1 Acre

15 A

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The amount of land under cultivation by the farmers varied from as low as two (owned) ropani to as much as 48 (owned) ropani, to seven (rented) ropani to various amounts of land both owned and rented.

An important variable to the farmer, in addition to the quantity of land, is the quality of land. Farmers with smaller quantities of good land, i.e., highly productive, are better off than farmers with larger quantities of poorer land.

One shortcoming of this area of investigation was my not determining the quality of land in addition to quantity and whether owned or rented.

MAIN AGRICULTURAL PROBLEMS

- | | | | |
|----|--|---|--|
| 1 | water | } | monsoon was late -
no water in fields |
| 2 | water | | |
| 3 | water; money/credit is little problem | | |
| 4 | water | | |
| 5 | back-breaking work (their fields had a little water) | | |
| 6 | insects (after rain, rice looked healthy). adequate water supply in fields | | |
| 7 | insects & disease; anticipate the crop, adequate water supply | | |
| 8 | irrigation, no laborers | | |
| 9 | water, no laborers | | |
| 10 | money to buy fertilizer; if have money, can buy laborers | | |
| 11 | water, money | | |
| 12 | water, irrigation, disease, labor, money | | |
| 13 | irrigation; water is main problem | | |
| 14 | ----- | | |
| 15 | water, irrigation, money | | |

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The first discussions with farmers were in early July, just after my arrival. The monsoons were late and the future of the rice crop was in question for the lack of water. Not surprising was the same response--water--to the question of their main agricultural problem.

Farmer number six and those following were interviewed sometime later, after the monsoons had started. But still the problem of water was usually in their answers. A continual, adequate supply of water is of main concern.

This suggests a third factor to consider when attempting to evaluate a farmer's productive potential--how much land, quality of land, and water supply.

<u>FARMER</u>	<u>CROPS GROWN</u>
1	- Rice, wheat
2	- Rice, wheat
3	- Rice, wheat
4	- Rice, wheat (no corn or potatoes)
5	- Rice, wheat
6	- Rice, wheat
7	- Rice, wheat
8	- Rice, wheat
9	- Rice, wheat, corn, oil seed, sugar cane, potatoes, other
10	- Rice, wheat, corn, barley
11	- Corn (mainly), rice, wheat
12	- Rice, wheat, corn, barley
13	- Rice, wheat, corn
14	Rice, wheat, corn
15	-----

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The crops raised are, in the main, rice and wheat. There are other crops grown however, but in smaller quantities. Sugar cane is grown in large quantities in the Terai, but only occasionally seen in the Hill areas. Corn is the third most important crop in the Hills. Fruits, potatoes, vegetables, and barley are crops of less importance grown throughout Nepal, local climate permitting.

Since rice and wheat are definitely the two major crops--the mainstay of Nepalese agriculture--most organized effort of HMG is directed at these two grains and directed at Terai production, since the Terai is the most productive area of Nepal.

This area of inquiry was most revealing as to where the farmers in question were located on a continuum of rich or poor. Those who farmed year around tended to appear to me to be richer than those who did not farm throughout the year. The poorer farmers in Kathmandu Valley worked in the construction trades during the off-season, while those in the Hills did not have many viable options to pursue between planting-harvesting-planting. The poorer farmers in the Hills had the worst situation of all the farmers, they either worked on road maintenance crews, in one location a few of their fellows worked on the construction of a Chinese-built power plant, but most seemed to sit around a great deal and engaged in little productive labor.

While traveling around, do you notice agricultural practices, are they different and if so do you ever consider adopting these different practices?

- 1 never notice
- 2 -----
- 3 notices, but only minor differences. Never adopt
- 4 notices different agricultural practices, but not willing to take chance to try
- 5 notices, but differences not so great as to make any difference in production (he thinks)
- 6 notices different tools & practices, and he is willing to adopt them if beneficial to increased production (he is a progressive farmer)
- 7 notices, willing to adopt if increases production
- 8 notices different use of buffalo elsewhere
- 9 notices cultivation by hand elsewhere, by bull here
- 10 notices, but can't adopt these different practices
- 11 notices practices are the same in the hills but different in Kathmandu Valley & the Terai. These different practices can't be adopted in the hills, he has tried. (more stones in hill fields)
- 12 notices, but not change own practice
- 13 never notices
- 14 -----
- 15 -----

The variable of travel had very little impact on those farmers interviewed regarding the adaptation of new agricultural practices. This is not surprising considering the geographic diversity of the country; if one travels but a short distance, conditions in climate and soil change rapidly. Couple this with the traditional suspicions of anything from outside the peasants' immediate world and awareness, and it is understandable why the farmers answered as they did.

It is encouraging to note, however, that in most cases the farmers did at least notice differences in agricultural practices, even though they did not or could not adopt them. This is in full accord with the farmers feeling the need for new information and wanting it--a point I pursued with only a few farmers toward the end of the field survey--the answer was always in terms of a desire for more useful information.

RADIO NEPAL AGRICULTURAL PROGRAM

<u>Farmer</u>	<u>Radio in the area</u>	<u>Listen to Agricultural Program</u>	<u>Helpful</u>
1	-----	-----	-----
2	yes	no	
3	yes	no	
4	yes	no	
5	yes	yes	Advice is not practical. Recommendations are too expensive.
6	yes	yes	yes-introduced new practices
7	yes	sometimes	it is practical
8	yes	no	
9	yes	yes	yes-practical advice. Confidently follow instructions.
10	yes	no	
11	yes	no	
12	yes	-----	
13	yes	no	
4	yes	yes	yes
5			

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The impact of radio on the spread of agricultural information is of questionable value as the situation is now. Most farmers live in an area where there is a radio, but few ever listen to the agricultural programs. The effectiveness of the message when it does get through to the farmer needs more investigation.

The director of Agricultural Information Services, who is responsible for making the agricultural information tapes played on the air by Radio Nepal, said that HMG is proposing that an international agency give a large quantity of inexpensive radios that will be tuned solely to the Radio Nepal frequency, these radios to be distributed to the panchayat centers in numerous villages throughout Nepal. In this way, the message of improved practices would be more likely to have a broader impact.

IF THERE IS A GOOD HARVEST, AND YOU MAKE EXTRA MONEY, HOW DO YOU USE THIS MONEY?

<u>FARMER</u>	<u>RESPONSE</u>
1	Buy more rice, don't grow enough for own use
2	Buy more rice. (Same situation as one)
3	Buy more rice
4	Reinvest in better seed and fertilizer. Beyond that, spend on daughters, grandchildren, clothes.
5	More seed and fertilizer (for insurance), then spend on a party and drinks.
6	Family expenses
7	Agricultural improvements, then family expenses
8	None extra
9	Pay off debts
10	Pay off debts
11	Not enough food now (hunger still here from last year)
12	Buy agricultural improvements and household goods Then pay off debt of 4-500 Rupees/yr.
13	Household goods
14	Previously with extra money he bought food, but now he has enough. He now sells the extra food, reinvests the money, and gives out loans.
15	

This question was asked as a way to help determine the situation of the farmer being interviewed. The poorer farmers responded that they would use any extra money to buy more rice for food; in some situations, they merely laughed at the question, for they were suffering the effects of starvation. On the other hand, the richer farmers would spend the money on non-agricultural commodities after reinvesting in better seed and fertilizer to insure agricultural improvements.

How does the farmer anticipate the harvest of the rice crop now planted?

- 1 poor if no rain soon - he was transplanting when asked
- 2 poor if no rain soon - preparing field for transplanting rice
- 3 poor if no rain soon - transplanting - last year's crop was good for this land
- 4 expected a better crop than last year if it rains - transplanted 10 days before & now weeding
- 5 last year's crop was good, not sure about this year's if no rain - transplanted 10 days before & now weeding
- 6 good - using IR22 (last year's crop was good)
- 7 good now, don't know about the future - last year's crop was good
- 8 okay, but irrigation is difficult
- 9 good
- 10 corn is bad, rice - can't say
- 11 corn on hillside is good, in the valley it is bad
- 12 his whole crop is diseased - insecticide from the JTA is useless
- 13 before it was good, now it's underwater
- 14 -----
- 15 good

In asking this question, I was attempting to determine how the farmers thought about the future of their crop. The nature of the responses are more important than are the specific answers: the farmers were thinking in terms of cause-and-effect, scientific relationships rather than attributing the future of their crops to the will of the gods.

This is not to say, however, that much of their thought patterns are not influenced by animistic forces, for indeed the spirits play a large part in determining behavior. What is encouraging is that scientific thinking (of an elementary level) has an impact in the important area of food production.

From where do farmers in this area borrow money for agricultural purposes?

6. From neighbors, not from the government. Farmers work out among themselves. Don't get involved with government. Even though interest rate is lower if borrow from government, farmers don't need security if borrow from neighbors but need security if borrow from government.
7. Borrow from friends.
8. A six-month coop loan, but only coop members can borrow from coop. If not in a coop, either pay cash or-----
9. From village merchants
10. Merchants
11. Credit from merchants or from each other. Don't borrow from outside.
12. Sell things from own home, then ask merchants.
13. From merchants
14. Farmers sell their own property to neighbors. As a merchant, he also lends money.
- 15.

These responses reflect an inclination by the farmer to meet his financial needs through an arrangement with friends, neighbors, and local merchants rather than government facilities, such as the Agriculture Development Bank. Most farmers were not even aware of such a bank, and even if they were, these responses suggest that they would not use the facilities.

There is a suspicion of ideas, information, facilities, and 'help' from outside the farmers' limits of awareness (and locale). It is not surprising then that these answers are as they are. This says then that any effort toward the 'village-level' must do more than simply offer its services to have an impact; local suspicions must be overcome.

DO YOU USE EITHER CHEMICAL FERTILIZER OR NEW (IMPROVED) SEED OR INSECTICIDE?

<u>FARMER</u>	<u>RESPONSE</u> (use)	<u>WHERE DID YOU FIRST LEARN ABOUT IT?</u>
1	yes	saw neighbors use it
2	yes	ASC (agricultural supply corporation) a semi-governmental corporation
3	yes	Picture-Poster. Bought fertilizer/seed from store and cautiously tried on small patch first to see results. (self-experimentation)
4	yes	others
5	yes	panchayat
6	yes	JT(A)
7	yes	neighbors (more land/older)
8	yes	JTA
9	yes	others (panchayat not dependable)
10	no	
11	yes	JT(A)
12	yes	Pradhan Panch, JTA
13	yes	In Bazaar
14	yes	JTA
15	yes	JTA

} no longer there, now some
self-experimentation

The responses to this question reveal a variety of sources by which farmers learn about new agricultural practices and inputs. The two major channels are 1) neighbors and 2) the JT(A)'s working through the panchayat. If improved effective communication flow is to be improved in the interest of non-formal education, attention should be focused on the natural linkage between the panchayat, the JT(A)'s, and farmers (who all have neighbors and an impact on those neighbors).

Note: The term JT(A)'s means both JT's and JTA's.

From where do you get new agricultural information?

<u>Farmer</u>	<u>Response</u>
1	from neighboring farmers, not from government or panchayat
2	ASC and government
3	-----
4	neighboring farmers and self-experimentation
5	neighboring farmers, government not helpful
6	government helpful, also note neighbors' practices, progressive farmers
7	note neighbors' practices
8	JTA and Bazaar
9	neighboring farmers - if people from outside suggest something, we wait and see
10	no source
11	panchayat members and progressive farmers
12	panchayat
13	merchants
14	
15	from JTA before, now from own experience, experience of others, and the AMC office

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The sources of new agricultural information are as one might expect. Governmental efforts, i.e., Extension Service, seems to have less of an impact than do neighboring farmers. One major channel of government communication is through the panchayat; a JTA (Junior Technical Assistant) is assigned to the panchayat to organize farmers' meetings, identify progressive farmers, and run demonstration plots. This plan of action does not always occur: either there are not enough JTA's for each panchayat, leaving this channel unmanned; or the JTA does not do his job in the panchayat, i.e., he does not put forth the effort when at his post (this is not always the case, but it does happen).

Usually the farmer confessed to taking note of practices of neighboring farmers, waiting for a year to see the results, then cautiously trying the new practice himself, perhaps only on a corner of his plot. If this proves advantageous, then the innovation is put into full practice.

Few farmers mentioned experimenting themselves. It seems that the progressive farmers in the area are the ones through which a new technique can most effectively be introduced. With Extension Service help, he tries the new and hopefully has a diffusion effect among the other farmers in the area.

From where do farmers in this area get help on agricultural problems?

<u>Farmers</u>	<u>Response</u>
8.	JTA will bring insecticides
9.	Nobody, but can contact a private shop in Kathnandu
10.	No help
11.	No where - self-experiment
12.	Bazaar - a shop has insecticide, but not effective
13.	No help / coop of no help
14.	-----
15.	he (pradhan panch) tries to help

The responses to this inquiry reveal 1) a hopelessness by the farmer in need of help, and 2) a lack of communication between help sources (specifically government) and those in need. In talking to several people, one gets the impression that help for many agricultural problems is simply not available in-country. There is a desperate need for basic agricultural research to be applied to the multiple conditions of Nepal; at present, research is conducted in but a few areas and for only some crops.

With limited resources, HMG has had to make some choices regarding agricultural research. Some areas receive help, others do not--yet. In the meantime, most farmers are left to fend for themselves, as they have always done.

Note comments in summary of ex-PCV/JTA reports.

How do you determine when to plant?

Farmer

Response

- | | |
|-----|---|
| 6. | Experience and tradition
Note soil and water conditions
Neighbors have no influence |
| 7. | Experience, tradition, and
neighbors' practices |
| 8. | By the calendar |
| 9. | By the calendar, rain, soil conditions
Neighbors have no influence |
| 10. | Soil, rain, month (calendar) |
| 11. | By calendar and the rain |

In an attempt to determine the extent to which neighboring farmers have an impact on each other, I asked how they determined when to plant. Although there are only six responses, it is interesting to note that farmers six and nine are progressive farmers and that their neighbors have no influence on their determining when to plant. I specifically asked these two farmers if neighbors had any impact in this area; the answer in both cases was no.

The other farmers, i.e., not progressive, were asked an open-ended question, not following up their response with specifics about neighbor impact.

This area of specific neighbor impact is worth pursuing in greater depth. I did not do justice to either this question or the concept behind it. Additional studies should include this area.

Have you even seen any agricultural films or pamphlets? And if so, were they helpful?

<u>Farmer</u>	<u>Films</u>	<u>Pamphlets</u>
8.	No	Yes, but no help.
9.	No	Yes, a little helpful.
10.	No	No
11.	No	Doesn't read
12.	No	No
13.	No	No
14.	No	Can't read
15.	No	Yes, Helpful

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The Agricultural Information Center has a mobile van for showing agricultural movies and disseminating information. This van operates primarily in the Terai where 1) a road network of sorts exists, permitting accessibility to a greater number of people, and 2) the Terai is the main agricultural producing area and the focus of governmental effort.

Neither of the two Terai farmers interviewed had ever seen a film on agriculture, nor had any of the farmers who lived along a road in the Hills.

The impact of the pamphlets is also questionable. Either the farmers who need the information and improvement most cannot read or they find the information of questionable usefulness. Many of these pamphlets are used by merchants in which to wrap goods for easy consumer transport--a novel method of distribution, but one of dubitable usefulness.

Are there any progressive farmers in this area, and if so, have you had any personal experience of them?

<u>Farmer</u>	<u>In Area</u>	<u>Personal Experience</u>
8.	Yes	No
9.	He is one	Other farmers come to him to discuss farm improvements.
10.	Yes	No
11.	Yes	No
12.	No	
13.	No	
14.	He is one	He sells to other progressive farmers and exchanges information with them
15.	He is one	Pradhan Panch

Farmers eight, ten, and eleven said they did not have any personal experience with the progressive farmer(s) in their area, but this does not mean that the progressive farmer(s) in each particular locale does not have an impact. Just as an extension agent cannot hope to contact all the farmers in his jurisdiction, he still has an impact by working through progressive farmers who pass along agricultural information through the informal, personal communication network between members of the profession or occupation.

Farmers eight, ten, and eleven may not have had any direct personal experience with a progressive farmer, but they might have benefitted from second or third hand information that came by way of the progressive farmer--an agent for the diffusion of information.

Is there an agricultural association in the area

Personal experience with it

Helpful

1.	No	Never	-----
2.	Ag. Coop	Yes	Very helpful
3.	No	No	-----
4.	No	No gov't help	-----
5.	No	No	-----

In this area, are there

	Ag. Coop	Personal Exp.	ASC	Per. Exp.	Panchayat	Per. Exp.
6.	Yes	No, There was before - but now closed. Didn't do well	Yes	buy seed/ fertilizer from the agent	Yes	Yes
7.	No	No	Maybe	No	-----	-----
8.	Yes	Yes	No	--	Yes	No farmers meetings. Panchayat doesn't follow through.
9.	Yes	Have a share. Now is useless	No	No	Yes	No
10.	No	Used to be a member. Helpful at the time.	No	No	Yes	No farmers' meetings.
11.	--	-----	Yes	--	Yes	-----
12.	No.	-----	No	--	Yes	Limited
13.	Once but not now	Man ran away with the money	Don't know	--	Yes	No
14.			Yes	is a dealer	Yes	Yes
15.			Yes	Yes	Yes	Te - ...adhan Panch...

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In the area is there a

	JTA	JT	DADO	Ever visit your farm	Helpful
6.	Yes	Yes	Yes	Yes (if problem) JT (A)	Technical help
7.	Yes	No	Don't know	No	-----

IN THIS AREA, ARE THERE ANY OF THE FOLLOWING MEN? IF SO, HAVE YOU HAD ANY PERSONAL EXPERIENCE WITH THEM?

<u>FARMER</u>	<u>JTA</u>	<u>JT</u>	<u>DADO</u>	<u>PRADHAN PRANCE</u>	<u>PERSONAL EXPERIENCE</u>
8.	Yes	Yes	Don't know	Yes	Demonstration plot 4 years ago
9.	5 years ago	Yes	Don't know	Yes	-----
10.	No	---	No	Yes	No
11.	No	3-4 yrs. ago	Don't know	Yes	Farmers' meeting. Never go. Only for big-rich people, not little people.
12.	2 years ago	2 yrs. ago	No	Yes	Goes to panchayat meeting every 6 mos.
13.	No	No	Don't know	Yes	No
14.	Before, not now		No	Yes	Yes
15.	Before, not now		Don't know	He is one	He tries to teach agriculture in farmers' meetings, from his own experi- ence

All farmers were aware of the panchayat. It is through the panchayat that the JT, the JTA and the DADO contact and work with the area farmers. The general nature of responses to the questions about farmer awareness of extension people is not encouraging. The most basic linkage, i.e., the men of government who contact their clientele, are, in some cases, either non-existent in the field or they are not doing their jobs adequately.

Although the farmers responded negatively as to whether an agricultural organization or personnel existed or were posted in a number of locations, I was here not interested to know, in fact, such an organization or personnel existed in said district, but rather if the local farmers KNEW of their existence.

One complaint of the Extension Department is that there is a shortage of JTA's, and especially of effective JTA's, to have one or more in each panchayat. The good extension agents are hired away from government service by the sugar and tobacco enterprises in the Terai by offering double the government salary. Many, but not all, poorer quality JTA's simply do not leave the office or make little contact with the farmers. This Extension Service-farmer linkage is vital, but seems to be the weakest link.

Toward the end of the study I asked the question of farmers why they thought some farmers are rich and others poor. The composite answer includes such items as -

- Rich farmers have good land, and much of it.
- Rich farmers have money (to purchase agricultural inputs)
- Rich farmers can plant and harvest at the right time.
- Rich farmers can hire help.
- Agricultural people (JTA-DADO) contact the rich farmers.
- Poor farmers have to sell their land.
- Poor farmers have to work for others.
- Rich farmers have knowledge.
- Rich farmers don't have to work in their fields; those who take loans from them must work in their fields.
- Rich farmers buy good agricultural land with irrigation.
- Poor farmers have land on the hillside and are subject to landslides.

AMC Dealer

Number 14 was a shopkeeper (the only shop on the road for miles in either direction) and an AMC dealer. The Agricultural Marketing Corporation supplies new seed to dealers, who sell it to the farmers. This dealer supplied corn, wheat, and rice seeds plus chemical fertilizer--all secured from the AMC outlet in Kathmandu.

This shopkeeper was a farmer himself, although his sons now do most of the field work and he runs the shop. He has been an AMC dealer for 6 years; he learned about serving as an AMC outlet from the Pradhan Panch. This man uses the AMC-supplied commodities in his own fields.

Before he left two years ago, the JTA told the people how to use new seed and chemical fertilizers. But now that there is no JTA in their panchayat, the AMC dealer tells the farmers how to use these new inputs, for he says he knows. This shopkeeper said he gets agricultural information from the AMC office in Kathmandu, where they tell him how to use these new inputs.

He reports an increased yield from his own fields with the use of new seed and chemical fertilizer, although he does save some seed from year to year and buys new seed only if good seed comes in time--a supply problem, even with his shop located right on one of the few roads in the country.

Many of the questions asked of other farmers were not put to this shopkeeper, for I wanted to use the time and his attention to ask about his AMC dealership and his relationship to others in the area. Some of the questions on the regular schedule were asked and these answers appear in the proper place.

A discussion erupted in the shop between one farmer(?) listening to my questions and my driver-translator. The essence of the conversation was why should the Nepalese give an American such information without getting anything in direct return. The discussion became heated and I felt destroyed the atmosphere for further questions.

Pradhan Panch

Number 15

This Pradhan Panch - the highest elected official of the local panchayat - has held office for five years. His panchayat holds farmers' meetings 2-3 times a year, and are attended by a few farmers (chosen by the villages) from each of the 18 villages in the panchayat. Any farmer can come if he wishes, even if he is not chosen as a village representative, but he usually does not. The Pradhan Panch does not know why more farmers do not come.

The agricultural information that is shared at the farmers' meetings come from the JTA when there is one assigned to the panchayat, but now that there is no JTA, the panchayat members who know and practice successful techniques share the information.

The Pradhan Panch is himself a farmer; he considers himself a progressive farmer. He contacts other farmers in the area if they come to seek help from him, but if they do not ask, he does not go to them.

He uses chemical fertilizer and new seed and gets a much better yield than previously; his land is well irrigated, which helps considerably.

The Pradhan Panch reports about 75% of the farmers in his area use new seed and chemical fertilizer and that 100% of the chemical fertilizer that they can get is used. But it is difficult to get fertilizer at times, even though there is a road passing through the area.

This Pradhan Panch said he has never received any special training that might help him carry out his duties and meet his responsibilities. There is a panchayat training institute in Nepal, but its impact has yet to be felt here in a cluster of villages along a road and close to Kathmandu.

He does criticize the AMC office for not being honest. All they want to do is sell seed, and often the seed is no good.

LANDLORD

The following comments are from an interview with one landlord who I encountered by giving him a ride on a mountain road. His attitudes and answers I cannot claim to be representative of all landlords; but since I was presented with the opportunity of talking with him, I pursued his thoughts in that they might present another viewpoint. Landlord attitudes might be worth further study as a variable in non-formal agricultural education.

This interviewee was a tailor (year-round, so no off-season) and a musician. He acquired the land he now rents as a gift from a temple for services rendered as a musician. He has never been a farmer and knows very little of farmers' problems, nor does he ever talk with other landlords about different agricultural problems.

He knows his tenants grow corn and rice, but he doesn't know for sure if they use new seed or chemical fertilizer. He does not go to see how the crop is doing or what the tenants anticipate for the next harvest. Since the government fixes the rent rates, he has little stake in good or better harvests.

In terms of information sources, he reports a radio in his area, that many people listen, but he never listens to the agriculture program (to learn and make suggestions to his tenants regarding improved practices). He has never seen any agriculture films, nor can he read. He reports that there are progressive farmers in the area, but he never has contact with them on agricultural problems of his tenants, indicating an almost complete lack of knowledge about agriculture. This particular landlord represents one end of the landlord continuum of concern and knowledge of tenants' problems and perspectives. It would be interesting to explore the range of landlord awareness and their impact on non-formal education for the renting agriculturist.

Rich, Middle, Poor Farmer
(My Impression)

- 1 - poor
- 2 - poor
- 3 - middle
- 4 - rich
- 5 - middle
- 6 - progressive
- 7 - middle
- 8 - middle
- 9 - progressive
- 10 - poor
- 11 - poor
- 12 - poor
- 13 - poor
- 14 - progressive
- 15 - progressive

My assigning the various farmers to the categories of poor, middle, rich or progressive is based solely on my impression of them, their appearance, their answers, and their attitudes. These criteria are highly subjective and I may have done an injustice to some of these farmers. I offer no objective evaluation, only my impressions.

The reader may wish to disregard this page; I include it because I did have a reaction as a person to the people I talked with.

Discovery - Organization

The second half of the 'Discovery' section deals with information from various reports, interviews with HMC personnel, and discussions with several Westerners engaged in official assistance efforts.

Director of Agricultural Extension

Director of the Agriculture Information Center

Director of In-Service Training for extension agents

RADO

DADO

IT

Peace Corps Volunteers

Other Reports

Schools

Director of Agriculture Extension
(Mr. Akrur Rana)

Official governmental agricultural extension is mainly conducted through the Department of Extension in the Ministry of Food and Agriculture. The Director of the department has, in addition to his deputy administrators, three special sections: Agricultural Information Center, Rural Youth, and the Gandak Project--plus the entire field extension structure. Field work is organized into six regional offices, each headed by a Regional Agricultural Development Officer (RADO). These regions are, in turn, divided into districts, each headed by a District Agricultural Development Officer (DADO).

The DADO supervises and supports some Junior Technicians (JT) and several more Junior Technical Assistants (JTA), both of whom do the front-line extension work with farmers.

Different areas of Nepal have different programs. The "intensive program" can now be found in 28 districts, mostly in the Terai, but some in the Hills, where institutional inputs (e.g., AMC) are present, developmental infrastructure (roads, communication) are being built or already completed, and the people have a sharper consciousness toward agricultural production and improvement. These intensive districts have a higher proportion of JTA's assigned. Since the Terai has more agricultural potential (fertile area and favorable climate) for increased grain production, it gets the most attention.

Areas with an "intermediate program" have fewer institutional facilities, fewer roads, fewer extension people, and may be adjacent to an "intensive" district.

Two districts are food deficient and have no extensions program and no extension personnel. Future plans provide for an unsophisticated and very limited program in these areas--both in the Hills. Program planning is done by a

procedure called "Program-oriented Budget." Six months before the Fiscal Year, the DADO's have a seminar during which guidelines are given them from the Planning Commission. The DADO returns to his district and formulates his own development plans for the next year within the guidelines. The district development plans are accumulated and passed back to the Planning Commission which scrutinizes them as to whether they square with the guidelines and the Five-Year Plan. To this extent, development plans are up-down and down-up.

Extension Agents

The JT and JTA are the field extension agents in Nepal. The Extension Director reports that the JTA's are chosen from all castes and that candidates with farming backgrounds are given preference.

JTA trainee positions are advertised in the paper. Because of the shortage of qualified personnel, the Extension Department takes all JTA's who apply. The training procedure is not a selection procedure too. The process to eliminate the unqualified is seldom used--Government formality and red tape to remove the unqualified is extremely complicated. Once hired, difficult to remove.

In the future, it is hoped that a more objective evaluation and selection procedure will be instituted for the JTA in training.

The JTA begins with a training program, previously at the College of Agriculture, Ministry of Food and Agriculture, but now at the Institute of Agriculture and Animal Sciences at Tribhuvan University. The training period used to fluctuate in length, now it is for one year.

During the training, the JTA receives instruction in extension methodology including method/result demonstration, leader-farmer training, field-day programs, field tour programs, fair exhibit programs, district competitions, and other techniques.

The training in crops (rice and wheat, mainly) is more theoretical than practical, causing many problems. The difficulty is that Nepal represents such a variety of topographies, climates, and growing conditions, that it is almost impossible to train the JTA for all situations and problems he may encounter. Since it is difficult to cover all problems of the various sections of Nepal, the practical training for one area becomes irrelevant for those going to a different area.

Half the cost of the training is paid for by HMG; the student supplies the other half. The JTA must stay with the Government for three years or else pay back HMG the money invested in their training. But since their pay is so low, many leave at the first opportunity, especially if offered a white-collar position (which by definition is a high-prestige job; agriculture is a low-status occupation). Many JTA's become extension agents because of the limited job market for people of their educational level.

The JTA lives in the panchayats in which he works. Working through the Pradhan Panch and farmers' meetings, the JTA identifies the progressive farmers and works primarily with them, hoping that the other farmers in the area will learn from these leader farmers.

The JTA receives technical support in the form of leaflets and posters from the Agriculture Information Center, technical manuals, and a technical diary, plus administrative support from the JT and the DADO in the central district office. The JTA must write a monthly report and spend at least 7-10 days a month in field visits.

The "daily diary" is a practice now being instituted. The JTA is to write an entry daily of the places he visits, farmers talked to, and other activities. This diary is to be filed in the DADO's office, making it possible for the DADO or the JT to double-check the JTA's efforts.

The JTA is not assigned to his home district because, as this was tried in the past, the JTA spent too much time in his own home, not exercising job responsibility nor spending much time on the job. Because of the low pay of 155 rupees per month (10 rupees=\$1 U.S.) and the cost of travel in Nepal, JTA's have difficulty traveling to their home if posted some distance away. Being posted far from their home is one of the JTA's major complaints.

The major complaint is the low pay: 155 rupees per month for a JTA and 250 rupees per month for the JT. Herein lies a major problem for the Extension Department; i.e., the semi-governmental corporations (jute, sugar, tobacco) hire the best and most experienced JTA away from government service to become a JTA for the corporation at 300-350 rupees per month.

To improve its own effectiveness, the Extension Department wants more educated JTA's; i.e., an increased number of School Leaving Certificate (High School Diploma) pass as an entrance requirement. While working in the field, the JTA is eligible for refresher training given on a regional level, based on particular crops and problems of the area, improving the JTA's agricultural expertise.

Another problem on the front-line of extension was (is) a frequent shifting around of JTA's. Although reassignment was to be done once a year--usually in December during the slack season, local political pressure produces more frequent movement. In early 1972, the Extension Department started a policy whereby the JTA was to be posted in a hill assignment for two years or in the Terai for three years, but not enough time has passed to evaluate the effectiveness of this innovation.

The Director of Extension feels the farmers used to be suspicious of the JTA because in the past government people came only to collect taxes. But now, he feels, the farmers know the JTA comes to help.

Subject-Matter Specialists (SMS)

Previously the Extension Service had SMS who served as a technical backstop for the JT(A)'s. This position was eliminated for reasons not entirely clear. Present efforts are to reinstate the SMS (not yet accomplished) because of the technical bankruptcy now facing extension--JTA's do not feel technically competent (and often aren't), for they are not equipped for local problems.

Whereas the JT(A) is a generalist, the SMS is to be the specialist, if reinstated, to serve as the link between agricultural research and the JTA/farmer level.

Rana says there is little need for JTA's to specialize, such as in vegetables or horticulture only. But there is need for SMS to gradually upgrade the technical level of farmers; the SMS should have a B.Sc.Ag. and be stationed at the district level. Promoting the SMS program would be more effective and economical than training JTA's as specialists.

Rana likes the idea of a traveling J.A-SMS team to visit regional high schools' agriculture programs to cross fertilize the agriculture instructional program at these schools. Such a team could bring knowledge of the latest research information and what is generally happening in the field.

DADO--is to be at post for three years before transferring. His performance is evaluated by the RADO. The DADO has at least a B.Sc.Ag. but not administrative or accounting training.

One problem in the DADO's office that affects the internal effectiveness of the program is the high turnover of his office staff.

An effective DADO has leadership qualities in getting the JTA's to increase their field contact. Now the Extension Department has to hire all B.Sc.Ag.'s who apply, because of the qualified personnel shortage--there is very little selection.

WEAKNESSES--Rana identified several weaknesses of the Extension Service in Nepal. Foremost is the lack of the SMS as a technical backstop for the field staff. Other problems are--a shortage of supply input, low-level institutional development, lack of credit facilities for small and middle level farmers (credit only to big farmers), need a sub-district level supply depot or dealership, more elaborate marketing mechanism (there is no price stability or price support- now prices are responsive to and controlled by the Indian market), lack of roads, supply is not geared to the needs of the farmers, and research development is needed to meet the different agricultural, geographic-climatic varieties in Nepal. Much remains to be done.

RESEARCH--Research priorities are presently on the Terai, primarily in paddy and wheat and very little in corn. The situation is slowly improving--previously there was no research done on Hill corn, but now it is starting.

The focus of research should be on farmers' problems, not other priorities. And there is need for a research council to coordinate problems, finance, impact, and expand efforts to needed areas.

RECOMMENDATIONS--Director Rana had several ideas regarding needs and needed changes. A basic need is leadership at all levels of organization. The organization itself should be modified--a director generalship should be established to coordinate the ministry's directors (Research, Extension, Fisheries, Horticulture, etc.).

In future, there must be good communication and cooperation between the Ministry of Food and Agriculture and the Institute of Agriculture and Animal Science at the National University; since both are serving agriculture in Nepal, this linkage is vital.

Also, administrative support must be improved to increase field staff effectiveness. Efforts to decentralize authority to the district level after the Planning Commission approves the overall plan are in the wind.

The Director's final suggestion for improvement was the Land-Grant System of combining agricultural training, research, and extension in the university. This would improve the overall efficiency of official efforts to improve agriculture in that agriculture teachers usually have little idea of agriculture field development activities. If research, teaching, and extension were carried on within the same institution, the speed of communication and increased impact are more likely than if all these functions were carried out by separate, competing agencies.

Agricultural Information Center
of the Ministry of Food and Agriculture

The Director of the Agricultural Information Center provided the following data about the functions of the Center--

The types of non-formal educational activities that the Center conducts are 1) audio/visual, this division prints leaflets and posters, produces movies on Nepal's agriculture, and operates a mobile unit that travels mainly in the Terai and shows movies and conducts agricultural exhibitions; 2) FRISHI, an agriculture bimonthly journal (2-3000 copies) is printed and distributed to JTA's, DADO's, village libraries, and subscribers (paying members); 3) agricultural news is passed on to the National News Agency for newspaper distribution; and 4) a radio division that makes tapes on agricultural topics which are broadcast three times weekly.

Radio Nepal's agriculture programs are produced at the Center in a small but adequate studio, with a staff of four actors, some of whom were trained in Australia in farm broadcasting. The content of the tapes covers a variety of agricultural topics, e.g., seed selection, fruit growing, chicken raising, etc. The Ministry of Food and Agriculture pays for the production of the tapes, as it pays for the operation of the whole Center.

There is no formal evaluation of the effectiveness of the agricultural tapes. Anyone on the staff going out of Kathmandu to the countryside is asked to try to informally assess their impact, usually by talking to farmers. The Director feels that the agricultural advice passed on in the tapes is practical, and he is generally encouraged by farmers' requests for more radio programs. The information on the tapes come from research departments of the different divisions in the Ministry of Food and Agriculture, e.g., horticulture, fisheries, livestock.

The format of the radio tapes is 1) a magazine of the air (interviews and comments), 2) dramatizations (farm family situations), and 3) a "Do You Know" two to four minute program (short messages on agriculture). Women's concerns and their role in agriculture is included in the scope of program subject-matter.

Future plans include requesting help from FAO for a supply of radios (fixed tuner) to be distributed to panchayat headquarters. (There are already 60,000 radios in Nepal.) The scripts of coming programs will be distributed to the JTA's beforehand so he can help interpret the program lesson to the farmers. This new program, called "Farm Forum," will be a demonstration by radio with the help of the JTA's.

The Director faces several problems. There is no distribution center for the productions of the Center outside Kathmandu. The department proposes opening four regional offices to facilitate the dissemination of information.

I observed a five-foot high stack of small packages ready for mailing, but they post office only accepts two packages a day. Others felt this bottleneck could be overcome, but as yet no action has been taken.

As with most institutions, the Director claims the Center suffers from the lack of enough trained staff and equipment. They want their own printing and duplicating shop; last fiscal year they published 740,000 copies of 50 different titles.

There are other problems the government can do little about immediately. Only four percent of the farmers outside Kathmandu Valley are literate (15% in the Valley are literate), which limits printed channels of communication. The radio broadcasts in Nepali, the national language, yet not all the people of Nepal speak Nepali.

PARWANIPUR AGRICULTURE STATION

IN-SERVICE TRAINING OFFICER

Shrestha
(Research and Education Division)

The in-service training program has had only one training session of 16 JTA's and one JT within the last 12 months. Since the program is only one year old--just starting--much is still unsettled and the information below is as the in-service training director sees his program unfolding.

The training is to be one week's duration. The DADO's are to select from among his JT's and JTA's who will attend. (In-service training has an understanding with the DADO's that they not select those who have had in-service training before.)

There will be a training session just before each major crop season begins. There will be two sets of students: one group of 15-20 JT(A)'s, the other group of 15-20 farmers. The DADO will also select these farmers for training; four from each district. The training for farmers will be more practical for the farmer group than for the JT(A)'s.

The content of the JTA portion of the in-service training (including cultural practices, how to calculate seed and fertilizer rate, etc.) will cover a broader background than the farmers' sessions on such practical things as how to use a sprayer.

The JTA will not receive an increase in salary because of the in-service training. In addition to increasing his professional competence, the training may count toward promotion. Several JTA's may wish to attend the training, but the DADO decides. The teaching will be done by the agriculture station staff--minimum of B.Sc.Ag. Degree for teachers, some M.Sc.Ag.

The students are given a pre-test and post-test to measure growth. The pre-test is supposed to direct somewhat the training program. The methodology is not to include lectures, but field demonstrations, practical work, and direct discussions spring from invited questions from the JT(A)'s about their problems. There is a

syllabus of material to be covered, so if questions do not cover all points, the instructor directs the remainder of the instruction.

The training is to emphasize problem-oriented, practical material with little theory. For the JTA's attending the training, travel and per diem is paid for from the DADO's office. Some of the training expenses will be paid by the DADO's office too. For land usage and seeds, the station will use its own resources. The DADO's office will pay for the farmer's transport; each farmer is to bring his own food (caste food problems).

There is now no input from in-service training into original JTA training. This may or may not develop in the future.

Linkages to other institutions and to other branches of some Ministry are doubtful.

The in-service training director feels there is no contribution his operation can make to the Institute of Agriculture and Animal Science. Nor does he feel the Institute can make a contribution to in-service training.

When asked about his major problems in in-service training, he said there is none. Other activities that go on in this same place are primarily in research--wheat, rice, corn, sugar cane, horticulture, plus some work in fisheries. (All JTA's in fisheries are PCV's.)

Shrestha's suggestions for improving Extension Service in Nepal, from a training point of view, is that the JTA's are not confident or qualified (poor technical background) for the field problems. One year is not sufficient for JTA original training. The training they do receive is too theoretical. If the farmer asks a question and the JTA doesn't know the answer, the JTA will not lose face by admitting his ignorance and therefore says something (often wrong), and thus loses credibility with the farmers.

And in the field, the JTA receives relatively little help from the DADO.

RADO
Kathmandu

Mr. Sinha

LEADER-FARMER TRAINING

Because of the limited number of field technicians, the intention of this program is to increase the impact of agricultural innovation. Ten neighboring farmers were to learn from each leader farmer who had received special training. The JTA, who lives and works in the panchayat, selects progressive farmers interested in new methods to attend one to three days of leader-farmer training. Some of these farmers are slightly literate; others are not--literacy is not a criteria for attendance. The sessions last from 10:00 a.m. until 3:00 or 4:00 p.m. The leader-farmer training usually takes place in the panchayat, but can be held at a government farm if one is nearby. (Transportation cost is a problem. Farmers are not willing to pay any cost.)

The teachers during these sessions are the DADO and technicians from the government farms. The JTA does not know enough to teach. There is no special training for the teachers as to how to conduct such programs, but there is, however, a short orientation program for teachers to start next month. The Agricultural Information Center is helping with the visuals aspect of the program.

The Ministry of Food and Agriculture sponsors the leader-farmer training. The MoA controls the content of the training, which is passed down to the DADO and JTA. The farmer input is indirect in that the JTA relates upward the farmers' problems, around which the training is supposed to be based. Previously, the information was always from the book; now it is problem-oriented.

Methodology used is mainly lecture, with few visual aids from Agricultural Information Center. Demonstration plays a minor role in the training.

The content of these programs covers farmers' problems, based on that cereal crop in production that time of year. Plant protection, varieties, planting practices, etc. are covered.

The program has unfortunately become bureaucratized; i.e., the center (targets, content) has become more important than the local situation.

There is at present no method of evaluation of leader-farmer training effectiveness other than the JTA/DADO progress reporting system.

The farmers can go to more than one leader-farmer training. (Demonstrations used to be done on the same farmer's plot, but now try to spread them around.) Three leader-farmer training programs are held each year: rice, wheat, corn (horticulture, fruits, and vegetables where facilities are present. The farmers are not accountable to anyone after training; there is no way to follow up. (Before one leader-farmer was to teach 10 others, but that objective is no longer.)

The managers are accountable, however. The DADO must report to the RADO; the names of the farmers by panchayat who took part are recorded and reported. The leader-farmer training has been in operation for four or five years. The leader-farmer training could not help the Institute of Agriculture and Animal Science (IAAS), but the IAAS could help the leader-farmer training by teaching the extension personnel how to conduct such training.

The advantages of leader-farmer training are that it is easier to work with leader-farmers than with the other farmers in the area, and the leader-farmer serves as a point of entry into the local farming community. It is easier to approach other farmers in the same panchayat in that the rate of suspicion is reduced. And the "value" of the JTA is passed around by word of mouth.

The major problem of the leader-farmer trainers is the lack of research information appropriate for all areas. Reliance on outside literature is not always good. Diversity of conditions makes it difficult. The extension system needs SMS for more technical information. (Used to have SMS but was done away with. Trying to reinstate for three years now.)

Each leader-farmer trainer session has about 10-12 farmers per group. About 300-400 farmers passed through leader-farmer training last year in Kathmandu district. In all of Nepal, about 3,000 per year.

LEADER-FARMER TRAINING	Kathmandu District	1971-72 FY
	<u>Sessions</u>	<u>Participants</u>
Wheat	35	939
Corn	15	132
Rice	26	379

DADO

This DADO has 10 JTA's and 2 JT's to supervise. He supervises them 2 or 3 times a month, depending upon the season. More supervision takes place during the planting and harvesting seasons, and less in the off-seasons.

The DADO feels the background qualifications for the best extension agent are 1) son of a farmer, 2) holds an I.Sc. Diploma, and 3) has four years' experience in agriculture. Those JTA's with a heavy school background have a different mentality, preferring the village to the fields. (DADO prefers a farmer with training in extension methodology than SLC-pass with 1 year training.)

There are JTA's with only three months, six months, and one year training. Those with the more training are preferable. The DADO gives orientation to newly hired JTA's. If the DADO is enthusiastic and follows through on supervision duties, the JTA will perform well as the extension agent.

Regarding the effectiveness of agricultural extension in Nepal, it must be kept in mind that although the operation might seem somewhat inefficient, the extension service has come a long way since it was first organized. It takes time to convince farmers to change since they must perceive a gain--a benefit from change.

When questioned about the major problems he faces as a DADO, he noted unqualified JTA's who had had only 3-6 months training (lectures only.) He expressed a need for extension agents to have practical knowledge. He also noted that the good JTA's are quick to leave their jobs if offered a better one by AMC or by the Jute, Sugar or Tobacco Corporation. Since the JTA's pay is so low, almost any offer is bound to be better.

The problems facing agricultural extension, from the DADO's viewpoint, were, in addition to personnel problems, ones of agricultural supply--too little, too late--and of quality supplies. What Nepal needs is a seed processing plant for better quality inputs and a distribution system.

This DADO felt that the Institute of Agriculture and Animal Science (part of the National University) could help agricultural extension by training better JTA's and by working with a selected panchayat in a model extension program (a laboratory project) on practical, field problems.

A Discussion with a Junior Technician

The Junior Technical Assistant (JTA) and the Junior Technician (JT) are the front-line extension agents for HMG. The following information and impressions were gained in a conversation with a JT who had six months before been promoted from JTA, a post he held for 7½ years.

This JT felt that the JTA training was sufficient to qualify them for field work, especially if the JTA's had an opportunity to take advantage of repeated refresher training. He felt that long training periods are not the best method, especially when the training included big doses of theory that proved irrelevant to the JTA's immediate problems. He suggested more practical field training.

His own training as a JT was a six-month course at Partnager, after 7½ years' experience as a JTA.

ORIENTATION

After the official JTA training and at the beginning of employment as an extension agent, the new JTA's receive a one-week orientation given by the Extension Division of the Ministry of Food and Agriculture to acquaint them with matters of how to contact farmers through the village panchayat, how to talk to farmers, and how the whole Extension Service operates. Yet, this JT felt the orientation was not adequate to help him in his field job.

The main problem of the JTA is that of convincing farmers to adopt new practices; it took too much time to convince especially those in the remote villages. These part-time, poor farmers were not interested in improved practices and had no money for agricultural improvement. The farmers' receptivity in remote areas is very low; farmers in Kathmandu are easy to work with and to convince. Consequently, most work is done with cooperating farmers, i.e., those who are experienced and rich and interested in improved agriculture. (These farmers are identified through the panchayat and by asking the area farmers to organize meetings.)

The JT(A) requests a meeting through the Pradhan Panch (the highest elected official of the panchayat) to make contact with the farmers of the area. Later, many of these farmers are contacted individually, especially the progressive ones. These few progressive farmers are usually rich, educated, experienced, own more land and are landlords; it is hoped they will have an impact on the poorer, less progressive farmers of the area.

The rich farmers grow crops the year-around: rice, wheat, corn. The poorer farmers, often remote, are part-time farmers, i.e., growing but one crop a year--mainly rice, and maybe some corn--and take up other work in the off-season, if possible.

The variables of receptivity seem to be remoteness, communication, amount of good land, education, and full-time farming. The less receptive farmers are remote, with poor communications, are poorly educated if not illiterate, and continue to cultivate in the traditional manner.

Topics covered in leader-farmer training programs in his area include seasonal crops, fertilizer, usage, land, preparation, when-what-and-how to plant, etc.

NON-FORMAL AGRICULTURAL EDUCATION IN SCHOOL

The JT had established a 4 Leaf Club (4-H Club) in the local high school; the club membership is about 30 students (all 9th class), including a few girls. Meetings are either after school or during recess. The club project is growing corn; in the future the JT hopes to expand to wheat. Each member has an individual plot plus the club has a demonstration plot. One difficulty is securing the land from the school for these plots. The school in this location has no agriculture program.

The club membership consists of students from farm families (who are boarding in the village because it is too far to travel daily from home to school.) The school fee is seven rupees per month for 9th class students.

The JT and JTA find it easier to work in a village where one of the 4-H Club members is from, for the student has brought back to his village information about new agricultural techniques learned in club activities. The JTA knows this is so, for he has observed new practices when visiting homes of his students. The DADO provides seeds for club activities, later students take reproduced seed home for parents to plant. It is easy to contact farmers who are parents of club members.

The primary school also has a 4-H Club, but the JT feels these students are too young, for they don't follow club activities and generally are not of the right age. He recommends increasing the age to include 15-21, not 11-13 as it is now. They plan to continue the primary school non-formal education in agriculture, but to change the activities to keep these junior members interested.

It is the policy of the Agriculture Extension Department to have the JT and JTAs establish a 4-H Club in each school or each village in his area.

AGRICULTURAL INFORMATION CENTER

The mobile van has appeared and seemed to be helpful. Radio Nepal's agricultural programs are helpful only to a few farmers. Some farmers listened, others did not care to listen, many did not have a radio. It is the JT's impression that those farmers who listen to Radio Nepal's agricultural programs are mainly literate, with some illiterate; the majority of those who did not listen were illiterate. The JTA would try to contact these latter farmers in remote places but did not have much of an impact because they felt self-sufficient.

BEST JTA's

This JT felt that farmers' children with an education made the best JTA's. Today, however, few JTA's are farmers' children.

Peace Corps Volunteers

The information in this section was gained through either talking with both ex- and active PCV's, or by reading several (20) PCV termination reports of the last few years--all of whom worked in agriculture in Nepal. Their collective comments are not descriptive of all districts or of all HMG or Peace Corps personnel, but they are descriptive of some of the problems facing agricultural development in Nepal as experienced by American volunteers in the field.

The numerous comments taken from these reports were from a variety of PCV's, from a variety of locations, representing a range of opinions and local situations. Some of their experiences were more successful, some less successful, and many in-between. All this produced some contradictory observations to which the reader will be exposed.

The information is grouped under several headings: Observations, Problems, Suggestions, Peace Corps Volunteers.

Observations - HMG

The central bureaucracy is unresponsive (one example, a JTA transferred in spite of his request not to be moved and a petition with 300 signatures.)

Observations - DADO - District Agricultural Development Officer

DADO never goes to the panchayat offices in his district.

High DADO turnover in some areas: 4 DADO's in 2 years.

Three of 4 DADO's in 2 years were office-chair warmers. They never got out to the villages.

Some DADO's were engaged in more paper work than field work.

Some DADO's are of no help to either the PCV or agricultural development in Nepal.

One new DADO was a great help. He went to get new seed himself and came to the villages to help.

Little DADO supervision of JT's and JTA's. No attempt to evaluate JT(A) performance.

Observations - Cooperatives

Village cooperative societies are not always supported by the villagers.

There are many cooperative societies, but few actually work.

Some coop managers are incompetent and/or corrupt.

People don't understand the function of a coop.

(rent land, plant improvement, credit, seed supply, potential to move into irrigation, promote AMC dealership)

Observations - JTA

JTA gets most training during initial training, little or no in-service.

No interest in this district office of posting a JTA here.

Some JTA's don't want to be posted out in small Hill villages far from the conveniences larger settlements have to offer.

JTA keeps pushing fertilizer usage.

Low motivation and low work productivity.

Little or no administrative support.

JTA turned off by lack of cooperation by farmers.

The JTA's let worn out excuses wear them down.

JTA training does not prepare them for the problems encountered.

Shift emphasis from classroom lectures to practical training.

PCV/JTA talked to Nepalese of a panchayat. The people were astounded to hear that there was a Nepalese JTA assigned to their panchayat.

JTA turnover is high in the Terai, lower in the Hills.

Not all JTA's are really interested in agriculture. Last chance and low pay (155R/mo.).

Some JTA's work, others don't, and many in-between. Some do more than they have to.

Farmers are suspicious of the JTA, an outsider.

Most JTA's know something about farming, but questionable how much they really know.

JTA's lose credibility with farmers, then when JTA has a good product, the farmer is unwilling to try it. Farmer does not believe JTA.

Observations - Farmers

There is no great demand for improved agricultural methods. (Change needs time.)

Farmers want improved agriculture.

Traditional agriculture is characterized by poor supply lines and chancy irrigation.

Having long lived under these conditions, farmers are apt to do much talking of improvement but remain extremely skeptical.

Farmers are more willing to experiment with vegetables than with their main crop because it entails a smaller risk.

Farmers sometimes come to PCV/JTA (the American Peace Corps Volunteer who is working in agricultural extension as a JTA) rather than to the Nepalese JTA (even though the Nepalese JTA may be better trained).

Many farmers unaware of supply sources available to them.

Convincing farmers to use improved seed is easier than convincing them to use chemical fertilizer.

Demonstrations convince farmers.

Don't use a wealthy farmer as a cooperating farmer. He doesn't do what you tell him, he tells someone else and usually isn't in the field when the orders are carried out, so nothing is done right.

Observations - Extension Work

Teral cereal grains have priority in research. These findings are superimposed on Hill agriculture with disastrous results because of the different conditions--soils, temperature, maturation time, seed strain, etc.

Hill agriculture suffers from lack of thorough research and from logistics problem of getting supplies on time (if at all).

The DADO is often under pressure to produce figures of increased chemical fertilizer or improved seed consumption and usage. The DADO then pressures the JTAs to promote these inputs. The JTAs in turn answer farmers' questions in the affirmative even though the extension agent does not know the answer, just to sell more seed and make the DADO look good with the increased figures.

Don't buck the system: the Pradhan Panch told the JT he liked the new corn, which in fact he hated.

New improved seed needs fertilizer and insecticide and other inputs that are never available.

Demonstration plots are done by the farmer, not the JTA. If crop fails, tough for the farmer--no government guarantees. The farmer must suffer the loss.

Nepalese do not like the taste of the new rice. The seeds are more susceptible to disease and therefore bad for farmers to try.

Need cooperation of leaders to set up a demonstration plot.

The extension agent needs to have knowledge of agriculture, knowledge of the local farmers, and ability to communicate, which is not always the case.

Visible difference in field crop counts more in demonstration plots than later comparison of yields and profits. Demonstrations convince farmers.

To work with many, have to spread yourself thin.

Improved agricultural techniques and varieties depend on reliable irrigation.

Agricultural Extension programs are not based on the felt needs of farmers.

Need greater flow of supplies from HMG and from India.

Need an Extension Service in horticulture.

There is a greater demand for information and supplies than is supplied.

Seeds come too late or not at all.

AMC sent out bad seed--only 30-40% germination.

The monied of this village (like many other villages) do not put their money into improved agricultural supplies, but rather into radios, watches, guns, etc. They have non-agricultural priorities.

Problems

Getting supplies (new improved seed, chemical fertilizer, insecticide) to the right places in time for planting.

AMC-supplied seeds had only 25% germination.

The unexpected: corn was not grown in this particular location, so the PCV planted a demonstration plot last year, but unfortunately all was eaten by a horse one night.

Attracting people who care about agricultural development and who are interested in farmers.

Water and irrigation become bigger problems if chemical fertilizer is used.

Farmers try new vegetable and tobacco crops and want to grow more, but there is no continuing supply of inputs.

Irrigation needs to be regulated, either too much or too little.

High demand for improved chickens, but problems include supplies, feed, vaccine.

Suggestions

Use local schools, large landholders, and local leaders in promoting agricultural development.

Must identify other agencies or methods to carry on demonstrations in areas where the Extension Department does not function (crop-wise or geographically).

The Extension Department carries out some demonstrations, but not others.

Promote a supply dealership in the area, to get the agricultural supplies through.

This would shorten the distance between the supply depot and the farmer.

The bazaars in Eastern Nepal are held on certain days of the week. Since many people gather to buy and sell on these days, including the area opinion leaders, these bazaar days are excellent opportunities for propaganda and demonstrations--attract attention to agricultural development.

Innovators should try only one experiment or improvement at a time, not a combination (such as new seed, chemical fertilizer, plant protection all in one season).

For farmer demonstration plots, the extension agent needs to identify the leadership and cooperating farmers.

Don't let the government take advantage of the farmers, which often happens.

Agricultural inputs (chemical fertilizer) must be available on credit.

Supplement the generalized IMC Agricultural Extension program, by planning for the particular agricultural development of a panchayat based on the real needs and potentialities of the locale.

Planning should answer three questions:

- 1) What to introduce?
- 2) Through which farmers?
- 3) How best to get these farmers to do what needs to be done?

Capitalize on farmers who are interested in new techniques.

Use farmers who are specifically interested in demonstrating a method.

Help bear some of the expenses.

Concentrate in only one area of improvement, and do something. Don't try to do too much and wind up doing nothing.

Don't move into an area unless there is high probability of success to establish credibility. Move into the less successful areas only after more research has been done.

During the non-planting/non-harvesting periods when not much work is done, it is a good time to work on storage facilities (stored grain is often destroyed by insects and rodents) and kitchen gardens.

Should promote cooperatives to get AMC dealership to assure continuing supply.

Farm visits:

90% of extension is on personal basis

- 1) have an attainable object in mind
- 2) know as much as possible about the farmer and his area before seeing him
- 3) know what you want to say--simple language, not technical terms
- 4) Time visit to coincide with farmer's schedule, go at a time when he is not busy
- 5) Mixed up social and business activities
- 6) Limit first contact to basics. Don't make wild claims or talk about the ideal
- 7) If don't know - say so, then find out correct answer
- 8) Use successful examples of private projects (by farmer at same economic level)
- 9) Don't press for commitment on first visit
- 10) Let farmer do most of talking and don't interrupt
- 11) Leave something with the farmer - poster, pamphlet, etc. - as a reminder
- 12) Make a follow-up visit (is he still interested) and show him you're interested in him
- 13) Talk to other people in village - get people talking
- 14) Make record for yourself of visit - reminder of information

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Nepal - much informal group discussion. Use these to develop interest and awareness of your program and for making contacts.

- A) Have in mind a minimum body of knowledge to impart
- B) Have something to draw people's attention
- C) Make use of existing meetings - tea shops, bazaar days, panchayat meetings, gossip sessions
- D) Avoid speeches

Use other farmers for extension work. Use farmer #1 to show farmer #2; let farmer #1 do the talking.

Demonstrations must be REALISTIC. Use only those materials that are available to private farmers.

Make yourself known to the people, so farmers know to whom they should turn when in need.

One PCV mentioned a variable to be taken note of - the extension worker's caste and the caste of those farmers he works with.

Use high schools as an information dissemination tool. Arrange to have a certain number of class periods devoted to visits from the JT(A) or DADO or a team of traveling agriculture extension workers. The program can include lectures, practicums, demonstrations, etc. After presenting credible, useful information, these visiting-inputs can move on to another high school.

Identify good farmers.

Peace Corps Volunteer (PCV) - Outside Influence

If the PCV establishes a demonstration plot, the DADO's office should supply the seed and the land.

Get on the DADO to get demonstration materials as early as possible.

PC reports on particular locations Identify local leadership, in terms of with whom one can promote a program. Know the community.

Work in cooperation with the JTA and the DADO, supplement their efforts

PCV to work with the JTA, demonstrate mutual effort and encouragement to the farmer.

PCV contribution - attitude and example. Show that PCV's are willing to sweat.

Most JTA's do more talking than action.

Let the people know your role.

PCV went door-to-door selling seed, made people aware that government personnel are supposed to get out and work, talked to many people.

PCV has ability to procure things (exploit this advantage), yet lacks knowledge and experience in agriculture (this can be remedied).

Make farmers aware of all available resources--physical and human.

PCV tried to work with English teacher in high school to make English lessons with agricultural content - didn't work.

PCV had his own class on agricultural development in local school.

PCV taught a class how to use a sprayer (insecticides); brought an infected plant to use in demonstration.

Teach students to identify plant diseases and what to do about it.

Take class to the demonstration plot.

One student requested help (to spray insecticide) for his own fields. The parents and neighboring farmers were so impressed that three pooled their resources and bought a sprayer themselves.

Set up an agriculture exhibit at village festivals: a booth with posters and displays of a variety of agricultural supplies, handed out pamphlets, and sold seeds.

Miscellaneous

To induce change, the means to change must be made available. (This is a government responsibility.) The government must make irrigation and supply available.

The more one can adapt the program to fit the existing system, the greater chance of success. The more one understands the system and the more one is a part of that system, the greater will be one's ability to adapt the program.

Extension Continuum of the Local Villagers

1. Awareness - knows that program exists
2. Interest - becomes interested in program
3. Evaluation - decides whether program is good or not
4. Trial - try program for himself on small scale
5. Adoption - changes to new practice

Schools

An investigation of the non-formal agricultural education going on in the various levels of formal education received the least emphasis of any of the areas I investigated, primarily because of the lack of time or when I was on my way to the school (on two different occasions in two different locations) I was told the schools were having their summer vacation then. There were other obstacles such as the university students closing down the National University and the calling out of the police in force to subdue the nation-wide (university) student demonstration.

In spite of these difficulties I did talk to some people about what non-formal agricultural education is going on in the various categories of schools. In general, there is not much cause for enthusiasm, for almost nothing is being done in this area.

The private school sector in Nepal is almost non-existent, only one private school exists in all of Nepal--a section for boys and one for girls, at both the primary and secondary levels. In the public sector at the primary level, nothing in non-formal agricultural education is done other than whatever 4-H Club program the JTA wishes to conduct. (Many locations do not have a JTA.) At the secondary level, there is some formal agricultural education going on, but only in a minority of schools. (The New Education Plan for Nepal calls for all secondary schools to offer agricultural education.) In those areas that have a JTA and in those schools without a formal agricultural program (which is the majority of schools), the JTA is supposed to start a 4-H Club (non-formal agricultural education).

When I visited the National Vocational Training Center (NVTC), where secondary teachers of vocational subjects are trained, I enquired about the kinds of non-formal educational programs they teach the teachers to conduct once these teachers are posted in their schools. The answer was 'none'. I feel the potential in this

area has a bright future once these teachers are trained to promote and conduct non-formal educational programs, in addition to their formal course of instruction.

The non-formal agricultural education going on in any college or university is virtually nil. The students at the tertiary level are too concerned about passing the hurdles of the formal system to be engaged in any non-formal programs.

Summary Analysis

Recipient

Organization

Problems or Opportunities

Infrastructure

Summary

This section attempts to summarize and analyze the research findings of both the recipient and organization phases of the study. The end of this section will point up some of the problems or opportunities facing non-formal agricultural education in Nepal. Throughout this report thus far there are several allusions to problems (especially in the Peace Corps Volunteer Reports section) and analytical statements regarding the findings (especially the pages accompanying and facing the research data sheets in the Discovery Recipient section. The following is an attempt to pull it all together for easier reference and consideration.

Recipient - Analytical Summary

In comparing the immediate, felt impact of non-formal agricultural education on the village agriculturalist, the neighboring farmer seems to have more influence on his fellow farmers than did governmental efforts.

The most efficient channel of communication for the rural farmer, in terms of learning new inputs, is other farmers.

Many farmers, especially the poor ones and those in the Hills, are in a desperate condition. I saw many who were starving. For example, on one trip we stopped by the roadside to eat a box lunch. Children immediately gathered, and when I shared a banana with them, they ate everything--peeling and all. There is an urgent need.

Those farmers in the best situation are those with large quantities of good land, and those worst off are with small quantities of poor land. The rank order of from better to worse situations are--

		<u>quality</u>	
		poor	good
<u>quantity</u>	large	1	3
	small	2	4

Positions two and three depend of course on how small and how poor the land. To develop a categorization of farmers and their land quantity/quality might relate to which farmers have more of an impact on which other farmers.

It was my impression that whether a farmer owned or rented his land was less of a factor in his prosperity than the quality and quantity of the land he cultivated. In this respect, for more conclusive information one might look into the impact of 'land reform' in Nepal on tenancy-wealth patterns.

One of the main agricultural problems of the farmers is water for irrigation. This area might prove to be a useful area to try a non-formal education program through a coop or panchayat cooperative effort.

Travel appears to be an insignificant variable in the farmers' learning pattern. But farmers did report that they noticed different agricultural practices elsewhere, indicating an awareness and perhaps a curiosity about the differences. I think this reflects a potential willingness for change if introduced to the farmers in the proper manner.

Off-season activities of poorer farmers, especially those in the Hills who have no other work, provides a fantastic pool of labor for development and non-formal education activities. A simple beginning would be developing and promoting the cultivation of other crops--vegetables, fruits.

The fact that farmers prefer borrowing money from neighbors or merchants and not from outsiders (such as the government) merely reflects the suspicion they have for people and forces from outside their world. This means that any non-formal education originating from outside the local citizens' world must try to overcome that suspicion.

As has been mentioned several times throughout and needs repeating, local farmers are suspicious of the government and of outsiders. This suspicion can be reduced somewhat as the outsider tries to become like the insider (or relatively so--note the efforts of Peace Corps Volunteers).

The agriculture programs on Radio Nepal seem to be of questionable value as a non-formal educational exercise. With better researched programming, this channel of education might have great impact.

Both rich and poor farmers were distributed among the castes randomly encountered. Even though caste did not appear to be a determining factor in successful agriculture, this question might be further pursued.

The differences between the farmers--rich, middle, poor--suggests different kinds of roles these varying levels of the peasantry might play. The non-formal educational programs should be designed so as to accommodate different people who have different resources to offer.

The most effective government effort to reach the farmer is the JTA, when there is one posted in the panchayat and if he gets out of the office to make contact with the farmers.

Those farmers who seem to be more difficult to change or influence than other farmers are characterized by

- a low level of education, probably illiterate
- a part-time farmer who grows but one or two crops during only part of the year
- poor financially, probably in debt, never any 'extra' money
- suspicious of outsiders (alien to his village area), including their own government personnel
- some in a desperate situation, even starving

The conditions these poorer farmers find themselves living and working under are

- living in more remote areas of the countryside
- working land of poor quality, (probably on the hillside in drier areas)
- a poor irrigation system or water supply
- poor communication with the world outside the village
- poor transportation facilities
- little or no contact with the JT(A)
- unaware of sources of outside help
- little or no direct contact with progressive farmers in the area
- little or no personal experience with local or national organizations
- cannot hire help when it is time to plant (must rely on family, but if family is small--trouble)
- sometimes forced to sell land because of inability to pay debts

Those variables that seemed to have little or no influence on whether a farmer is rich or poor, or more likely to be influenced by new forces are--

- whether a farmer rents or owns his land (this needs more research)
- the variety of crops grown (usually rich and poor alike grew but a few crops)
- anticipation of next year's crop (all responding in cause and effect logic, not in spiritual terms)
- almost all farmers interviewed used new seed or chemical fertilizer

Summary Analysis - Organization

Much of the information below has been presented elsewhere in this report, but here all of these bits-and-pieces of information have been pulled together in a more concise presentation.

Because the main organization effort in non-formal agricultural education in Nepal is made by the Department of Agricultural Extension of the Ministry of Food and Agriculture, the comments below are restricted to that governmental department, although other specialized extension education is carried on by semi-governmental corporations.

ORGANIZATION - The Extension Department has three special service subdivisions - Agricultural Information Center, Rural Youth, and the Gandak Project--one of which is explained in the body of this report. But the major job of agricultural extension (non-formal education) is carried on by the majority of Extension Department personnel. The country is divided into 6 regions, each headed by a Regional Agricultural Extension Officer (RADO) and each of these regions further subdivided into districts, in each of which a District Agricultural Development Officer (DADO) is responsible for agricultural development. The DADO is supposed to supervise and support a couple of Junior Technicians (JT's) and a number of Junior Technical Assistants (JTA's). The JTA is to serve as the DADO's assistant and further support the JT, but both the JT and the JTA are considered the front-line extension agents in Nepal.

Several years before and hopefully again in the future the Extension Service will have Subject-Matter Specialists (SMS) who will be posted at the district level and will serve as a technical backstop to the extension agents in the field. The SMS's particular contribution is to help with any special problems of the area that the JTA's are not equipped to handle. The reinstatement of these SMS's is in the process of discussion within the proper HMG channels, hopefully the near future will show results in their re-entry to service.

STAFF - The personnel in the leadership, middle echelon, and front-line worker positions are all of varying educational backgrounds. The head of the Extension Department, Akur Rana, has an M.A. in rural extension from Cornell University. Those in the middle management positions usually have a B.Sc.Ag. or an M.Sc.Ag., depending upon their mid-level position. And the front-line JTA's are now SLC-pass, for the most part. Previously many JTA's did not have an SLC, but in an attempt to upgrade the Extension Service, the SLC is a requirement for the incoming JTA's. The JT usually has several years' experience as a JTA and maybe additional short training about the time of promotion.

I suspect most of the higher and middle echelon people gained entry to their jobs and positions in the bureaucracy by virtue of their educational attainment and degrees rather than by working their way up through the ranks. The selection process for most JTA's is, however, quite different. The aspirations of many high school graduates includes gaining entry to higher education in medicine or engineering, and not agriculture. The typical background of a JTA might well be an SLC-pass, but not good enough to gain entry to any institute of higher education either in Nepal or in India. This young man then decides to become a JTA, usually as a last resort.

Many people familiar with the Nepal situation feel that most JTA's are not really equipped to do an adequate, or even a reasonable, job as extension agents. Much of the fault for this is that the JTA has the wrong background to meet the challenge. Although there is a reported preference for JTA applicants with agricultural backgrounds, the suggestion has been made that because the JTA is already an SLC-pass he is the wrong person for the job. Most boys with farming backgrounds never make it to high school much less pass the SLC. The best JTA might well be either the farmer's son with only a minimum of formal education, if that much, or a successful farmer given training in extension methodology.

Although more than once did a middle and high level official in extension admit that the best JTA would be one with more agricultural experience (being from a farm family) than formal education (an SLC-pass), they were not optimistic about securing these types of people as JTA's because of the trend to define upgrading in government as requiring more formal education to gain entry.

A word might be added here about the cultural aspect of this problem. Not unlike other LDC's, education is not considered a tooling-up for a life of service so much as is the degree interpreted as a license to avoid hard work, and especially manual labor in the fields. So, it is not altogether surprising that JTA's with an SLC-pass (and thereby having attained some degree of prestige) does not engage in as much direct agricultural development as might be expected or possible.

JTA training previously consisted of a variety of training periods: some three months, some six months, some nine months, and some one year. This training was conducted by the College of Agriculture in the Ministry of Food and Agriculture. The major criticism of this training is that it really does not prepare the extension agent for the task of agricultural development on the lowest level, i.e., dealing with individual farmers. The training is almost wholly theoretically based with little or no practical preparation for field problems. As a consequence, when the JTA arrives at post, he does not feel prepared (nor is he) to do the job at hand, and much of the contact he has with farmers only serves to alienate the farmers because 1) the JTA is an outsider, 2) he represents the government, and 3) he is really not equipped to advise the farmers on agricultural problems. There is apparently no formal selection process that runs simultaneously during training. I was told that Nepal is so short on 'qualified' personnel at this level (and at all levels) that once an applicant starts training his is never (or hardly ever) selected out as being unqualified.

I do not wish to imply that every JTA was or is ineffective or not now (after much experience and some leadership) prepared to face the challenge. What I am saying is that much of what I have related has enough truth to it that it warrants serious consideration.

The selection process as outlined above has not changed, but the future of the training program is cause for at least some degree of optimism. During the summer of 1972, higher education in agriculture--I.Sc.Ag. (Intermediate degree in Agricultural Science) and the JTA training--was transferred from the Ministry of Food and Agriculture's College of Agriculture to the Institute of Agriculture and Animal Science of the National University. At the time this transfer took place, MUCIA was engaged in a study of that institution; among the items considered were 1) the addition of the B.Sc.Ag. Degree (Bachelor's in Agricultural Science), 2) a full one-year training program for all JTA's and 3) the nature of that training to be much more practical than theoretical in the hope of better preparing the JTA for the task of front-line agricultural development. (See MUCIA report, Higher Education in Agriculture in Nepal.)

As I indicated above, JTA performance in the field is not what it could be, with notable exceptions. (These exceptions should be duly noted and rewarded by the Extension Service, but they apparently are not. The good JTA's are recognized by the Sugar, Tobacco, or Jute Corporation and hired away from HMG for more than twice the government salary.) In a few instances during the field research, however, I noticed that JTA performance was sometimes related to the leadership and support of the DADO. But if the DADO himself never left the office, naturally the JTA performance was low. This suggests that the fault is not entirely with JTA selection and training, but also with the quality and enthusiasm of the DADO and everyone up and down the line of command.

Plans for improving JTA performance evaluation procedure were instituted during the late spring of 1972. The plan calls for a 'daily diary' to be filled in each day by the JTA as to whom he saw--by name and panchayat--and where he went and what exactly he did. This diary is to be kept on file in the DADO's office and used by either the DADO or the JT to check and see if the JTA is in fact doing all he is claiming. So little time had passed since this innovation was begun that an accurate evaluation of it was impossible by mid-summer. The key to this 'new scheme' for performance evaluation is, of course, whether the DADO or JT actually do get out of the office to check on the JTA's work or whether they merely continue to take his word for it (only now, written).

Salary administration is a real problem at the lower levels of the Extension Service, as I mentioned earlier. The base salary of the JTA is only 155 rupees a month with post differentials that have little real effect because of the low base. Because of this, the JTA leaves government service at first opportunity--almost any other position will offer him more money than he makes as a JTA in the Extension Service. The salary problem will have to be improved, if not solved, if the quality of extension agents is to improve over the long run.

PROGRAM - The goal of the program is simply to improve agriculture in Nepal. The means of achieving this goal are mainly through extension activities at the panchayat level. The extension agents are supposed to conduct demonstration plots, identify and work through progressive farmers, hold production competitions, promote the use of new seed, chemical fertilizer, and insecticides, hold agricultural exhibitions, organize field trip programs, etc. The leader-farmer training programs are supposed to be conducted by the DADO, but when talking with a JT, I learned that at least his DADO never in fact did so, and the program was left to the JT and the JTA.

Experiment stations also hold programs for local farmers to introduce them to new crops, such as fruit or vegetables, but these efforts are minor to their main function of experimentation.

Because of limited resources to finance different programs and priorities, some areas of Nepal have no extension program at all, some have intermediate programs and others have intensive programs. The latter are concentrated in the Terai, which is the area of the greatest agricultural production and has the greatest potential for further development. The lesser programs are found in the Hills, where transportation and communication are more difficult and conditions of soil and climate more diverse and production less than that of the Terai.

As to whether extension activities and programs are achieving their goal of agricultural improvement is difficult to evaluate. As was pointed out to me by one DADO, the Extension Service suffers from many defects and deficiencies, but yet it has come a long way since it began several years ago. As outsiders, we must not be quick to judge situations solely on their present state without knowing their history. And they are a less developed country--if they weren't, they would not have these problems.

Perhaps a better question is whether the Extension Service could more effectively work toward its goal of agricultural development than it is now, and the answer would have to be yes. Although Nepal has come a long way since 1950, still much needs to be done. Some progress is evident--farmers claim increased yields in recent years because of new inputs--still much more could be done if not only the farmer changes his attitudes, but also many in the Extension Service change their habits and simply put forth more effort.

While researching this topic, I learned of some extension personnel--DADO's and JTAs--who were truly outstanding workers and achievers, but these people are exceptions. The task is to make them the rule.

Other Reports

The information and suggestions in this section came from some reports on file with USAID. The reports were written by Westerners who worked in Nepal for some time and base their comments on their experiences. Although many of their recommendations are for improving a more formal system of education, their thoughts are also relevant to non-formal education programs. Some of these people conducted some non-formal education programs, and their comments are also included.

To conduct an effective non-formal education program, the following conditions should be created:

Viable programs must be based on local needs, potential, and limitations in order to meet the needs of the country and the people.

Utilize local resources--materials used should be available to all citizens of the area and people from the locale should be called upon to contribute their skills (full utilize human resources).

Coordinate all non-formal education programs and training units, not only within one sponsoring agency or ministry, but between agencies and ministries.

A short-term in-service training program for food handlers died for the lack of cooperation between the Ministries of Health and Education.

Seek support of various ministries for non-formal education field programs.

Select students with interest and aptitude. Develop their skill competence and not their factual memory capacity.

One advisor tried to help teachers improve teaching techniques, but almost every time a practical demonstration was made no teachers were present.

It is imperative to the success of a non-formal education program that the participants be, above all, interested.

Non-formal education teachers and coordinators should work closely with the community.

Do not require literacy for entrance to the program.

Do not require SLC (high school diploma) for training in many service jobs.

No academic requirement is needed for students in the short courses offered to upgrade the skills of those in cast occupations and service skills already working.

It is possible to conduct special workshops during vacations for teachers of various topics. This is a kind of non-formal education program for formal educators. Assist teachers in how to conduct a non-formal education program themselves.

Some felt it best to avoid post-graduation employment problems by training those already on the job.

These same people further argued that the non-formal education training program is not so much to produce people with marketable skills, but rather to improve the skills of those already employed.

"It is extremely doubtful that the clothing majors will be able to secure jobs upon graduation, or will want to do so. They are not skillful enough and not very interested. Many of them have indicated an interest in teaching."

Work with local craftsmen and bring these skilled tradesmen into the program.

Replicate real life in learning situations.

Don't bring students into the capital city for training. Once there, they'll want to stay. Take the non-formal education program to them, it reduces their expense and increases accessibility.

Use available resources, such as tools, and introduce modifications only if practical.

Be sure the teachers of non-formal education have on-the-job experience and that they are more practice than theory oriented.

Another advisor tried to develop some teaching aids but the teachers showed no interest since the students were not to be examined on practical work (formal education system).

When designing a short course of a non-formal educational nature, there are several tasks to be kept in mind, among these are--

develop teaching aids and materials

write a curriculum and course content

improve teaching techniques

conduct short teacher training courses in how to organize and teach certain kinds of non-formal education. Outside training of key personnel.

plan local field trips

supervise the teachers and the whole program

adequate materials must be supplied

need a clear definition of responsibility and degree of autonomy

Conduct regional workshops at schools by bringing in local craftsmen to work with teachers to share experiences and skills.

The orientation of non-formal education training is toward totally marketable skills and future skill needs.

This philosophy is somewhat contrary to the great emphasis placed on theory by the Nepalese.

The host-country nationals involved must feel that vocational training and non-formal educational efforts are worthy and noble. Plus they must have knowledge and an understanding of the world of work.

Seek joint sponsorship and perhaps carry out the non-formal education program at a combination of existing institutes, if feasible.

The methodology should be more doing than watching, including on-the-job applied experience.

Problems or Opportunities

JTA - the extension agents are engaged in non-formal education with farmers; to do this more effectively, the agent must be better trained than he now is. The problem is that this training in the past was more theory than practice, which does not help in field situations.

The problem of low pay for the extension agents is a serious one. Many of the best JTA's leave government service as soon as possible to take higher paying jobs--almost anything is higher paying.

Some JTA's do not get out to see the farmers. Need more effort on the part of some JTA's and DADO's.

PCV/JTA's complained about the lack of administrative support. Had I had equal exposure to equally open Nepalese JTA's, they might have pointed up the same problem.

The Extension Service personnel in the higher ranks complain of the high turnover rate of the extension agents (JTA's) in the lower ranks.

The whole problem of the JTA's is whether to recruit, train, and reward fewer extension agents of quality and suffer a shortage (not every district having a full staff of extension personnel) or to accept all those who apply, including the unqualified, and simply fill positions with people, some of whom do little to promote agricultural development.

Farmers and local citizens are suspicious of anyone from outside their village area.

Farmers do not know where to go for help with agricultural problems.

If a farmer agrees to carry out a demonstration and the exercise fails, there is no government help for him. He is penalized for agreeing to try something new, which reduces the credibility between government and farmer.

The seed that comes from the AMC is not always of high quality. With less than a 50% germination ratio, credibility suffers.

Often the requested supplies and other inputs do not arrive in time for use.

For example, seed has been known to arrive AFTER planting time has passed.

A basic problem facing suppliers (AMC) is that they cannot keep up with the demand. Farmers request more new seed and chemical fertilizers than they can get. I suspect this to be especially true in the isolated Hill regions that are far from roads or air strips.

Some have criticized the extension system for not being more responsive to the needs of the people.

One panchayat official criticized the AMC for being more interested in selling seed and not whether their seed was any good or not. Like many organizations the world over, organization functionaries become more concerned about internal pressures to produce than they do about the product.

One high ranking government official reported that research done in Nepal is not passed on either to JTA training or to the Extension Service. The research units are not always willing to help the extension phase of the effort.

Infrastructure

The objective of assistance programs is to change the host system, to help it move from where it's at to somewhere else, hopefully 'forward'. For want of a better term, this process is called 'modernization' or 'industrialization'. When attacking such a task, it becomes quickly apparent that the job is a rather complicated one. To achieve one simple objective presupposes that several prior conditions have been met, which is usually not the case.

A basic aim of improving the agriculture of a predominantly agricultural country presupposes a host of conditions necessary to achieve that objective. These pre-conditions I will label the 'infrastructure'. I shall not outline the necessary infrastructure in detail, but I do want to at least mention some of the basic elements that are absent and therefore hinder agricultural development, much of which is a non-formal education exercise.

If the host-country government holds the long-range goal to be prosperity (however they define that, but usually achieved through 'modernization'), the only way to build and sustain that effort is through education--both formal and non-formal. The intermediate conditions that must be met to achieve that long-range objective are the very things that are lacking and are the barriers to further progress.

The needed infrastructure to develop agriculture are basic and unfortunately numerous. Among these are adequate research facilities to seek the answers to farmers' problems in all areas of Nepal; a communication system (Extension Service) that can take the answers from the research station directly and immediately to the farmer in need of that information; an adequate supply mechanism to produce the newer inputs demanded by farmers; a transportation network to get these supplies to the farmers on time; adequate outside assistance to build and finance an irrigation system that will supply water enough to gain full advantage of

other inputs; a source of credit at a rate farmers can afford; and a modern marketing mechanism that will provide the farmer with maximum return for his effort and investment.

These are some of the physical conditions that must either precede or accompany agricultural development. Human development is not only the end product, but also a simultaneous requirement to any change for the better. In attempting to change attitudes of the masses, it is necessary to change attitudes of a few key people first, especially those in government in charge of development programs. To increase human effectiveness in the face of the development challenge, there must be administrative support for those in the field, coordination of organizations involved in similar efforts, and dynamic and imaginative leadership. Without these elements, the more physical inputs will mean little.

Parameters Revisited

Phase II

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Parameters Revisited

Much like the methodology revisited section, this one is a reconsideration of the areas that should be further explored.

First, those areas of investigation dealing with the kinds of NFE (2A) that proved particularly useful in this study were about family and farmer background, the work place, and the market place. Of less yield were questions dealing with religious establishments, recreational facilities, and the places people eat and drink.

A new set of guidelines for questions should include the impact of neighboring farmers in the learning process, specifically which farmers affect who and how the role of the progressive farmer in the agricultural community. Closely related to this, the new parameters should include a more in-depth investigation of the impact of the JTA and the DADO to shed light on how this may be improved by using the neighboring farmer communication network.

Considering those questions dealing with the nature of non-formal education (2B), the areas of more feedback dealt with the methods of teaching-learning, who teaches, who teaches the teachers and who is taught. Less rewarding, especially for the recipient-oriented investigation, were those questions dealing with how the materials are organized, who pays, how the NFE program is organized and administered, and the expected product.

Of special importance is to develop categories of farmers - poor, middle, rich, progressive - based on more than mere impressions. The criteria of these classifications should reflect both quantity and quality of land under cultivation, irrigation facilities for that land, the productivity of the land, whether the land is owned or rented, and rent rates. Other parameters will probably make themselves apparent when the researcher begins working to further develop the categorization.

The investigation of government-sponsored NFE programs is necessary to understand the potential for change, in addition to what is actually going on at the time in the areas of organization-recipient effectiveness. Revised parameters for investigating government-sponsored programs should include a broader range of activities than I was able to research. Further suggestions in this area are presented in the methodology revisited section.

It might be worth the effort to investigate the relationship of landlords to the agricultural education of their tenants.

The area of non-formal agricultural education in the formal school system did not prove of much impact in the past in Nepal. But I do not suggest eliminating this research area from future field studies. As was pointed out in other portions of this report, this area has a great potential.

In doing comparative studies, it is important to retain and expand the question areas to include all important non-formal education contributing factors. What may be unimportant in Nepal may be of significance in some other country. A comprehensive list of research areas cannot be compiled after just one case study.

ARMY

While conducting a farmer interview in a roadside tea shop, I met a major in the Nepalese Army out on a training exercise. He told me that the army was also engaging in non-formal agricultural education.

The army is attempting to supply some of its own food (and reduce costs) by designating some military units to cultivate land and raise certain crops. Some of the soldiers do not come from agricultural families, so they must be taught whatever they need to know to produce food. This program is apparently just getting started, but it would be worth following up after it has been underway for a time.

Another part of the army's non-formal agricultural education program is giving new seeds to soldiers to take back to their home villages when they return home on leave. Which seeds of which crops went where are all recorded. Then the soldiers are asked to report back the next time they go home on leave as to the success or failure of these new seeds in their home areas.

Much might be gained if the Extension Service and the army combine efforts wherever they have mutual concerns and contributions to make.

Methodology Revisited

Phase II

Methodology Revisited
Phase II

This section is designed to give future field researchers, and especially those in non-formal agricultural education in Nepal, the benefit of my experience regarding methodology. Having engaged in an 'explore and discover' exercise, which I believe is a necessary first step, the following is a methodological design such that a more in-depth study of non-formal agricultural education in Nepal can be researched and produced. It was in the initial 'explore and discover' stage that the following comments and suggestions came to mind, but impossible to implement in that stage because of limitations of time and season. (Also, had I pursued the first of these methodological revisions, the rest of these suggestions may not have come to light.)

As I explored in the various realms of Nepal's non-formal agricultural education, the following Phase Two methods came to my attention.

First, more time than eight weeks is necessary to do an in-depth study in a country like Nepal and its poor transportation and communication facilities. The time should be of sufficient duration to include the monsoon, the December harvest, and the off-season in between. Such would allow the researcher an exposure to the two main activities of rice cultivation--planting and harvesting--and time to talk to farmers when they are not busy. More time would give one opportunity to do the following.

Recipient - The researcher should attend at least one, preferably more, panchayat farmers' meetings.

Recipient - The researcher should observe the operation of at least one well-run agricultural cooperative.

Recipient - The researcher should visit a variety of areas - East, Central, West, Terai, Hills, poor, rich--to further investigate the phenomena being studied.

Not only would traveling to these areas require time, but much of this travel could not be done during the monsoon summer months because of lack of reliable transportation during this time.

Recipient - The researcher should deliberately seek out farmers who represent different castes and poor-moderate-rich-progressive agriculturalists.

Government - The researcher should spend time with a number of JTA's and DADO's, at least one good and one bad of each.

Government - The researcher should deliberately seek out areas where there are and where there are no JTA's, to learn how the farmers learn and to assess the impact of the JTA.

Government - The researcher should visit demonstration plots conducted by the extension agents and follow up with interviews of the farmers who were part of the demonstration exercise to learn of its impact on them.

Government - The researcher should familiarize himself with and extensively visit the JTA training program to learn of the non-formal education techniques they are taught.

Government - The researcher should attend a leader-farmer training program and follow up the impact the participants have on other farmers.

Government - The researcher should attend at least one experimental farm program for local farmers and then attempt to follow up the program effectiveness.

Government - The researcher should visit several 4-Leaf Clubs (4-H Clubs) in session and comment on the non-formal education going on.

Government - The researcher should investigate the programs carried on by the Rural Youth section of the Department of Extension.

Government - The researcher should visit the Panchayat Training Institute to learn if they train their Pradhan Panch students any non-formal agricultural education to be passed on to the area farmers.

Government - The researcher should try to determine if JTA's of a certain caste work predominantly with or only with farmers of a certain caste.

Government - The researcher should investigate what the Army of Nepal is doing to train its soldiers in agriculture.

General - The researcher should visit the projects of other aid giving agencies and talk to their personnel to learn of their experiences in non-formal education.

General - The researcher should visit several PCV/JTA's at their posts and spend some time with them to learn of what is going on in non-formal agricultural education. (That is, in addition to talking with the Nepalese government personnel at each of these posts.)

General - The researcher should spend time with USAID personnel who are posted in the field. I felt my one experience in this area was very rewarding.

General - The researcher should visit the locations of and talk with ex-Peace Corps Volunteers who felt motivated to stay on in Nepal to engage in further agricultural activities.

The main thrust of this expanded methodology is to further observe, question, and get the opinions of more people engaged in a variety of aspects of non-formal education in Nepal's agriculture.

These methodology-revisited procedures are designed for a 'next stage' of the investigation, not a substitute for the first phase of 'explore and discover'

Recommendations

- Non-Formal Education in Nepal's Agriculture
- Some suggested projects
- Non-Formal Education, in general

Recommendations

No one of the following suggestions will provide the only guideline necessary for fruitful non-formal education programs. Rather, the recommendations below are to be considered as a number of preconditions and mini-solutions that are necessary and will lead to success. The following entries are grouped under four major sub-headings. Other sections of this report have numerous suggestions, the most important of which are re-grouped here; but for a more thorough review, return to those sections.

Non-Formal Education in Agriculture

Capitalize on farmers wanting improved agriculture and willing to venture something on new methods.

Make farmers aware of sources of information, supply, help, credit, and other inputs.

Continue to stress the use of result demonstrations--they are effective, they convince farmers.

Agriculture cooperatives are an excellent channel of communication and vehicle for non-formal education. After studying those coops that function well, establish some guidelines for organizing and operating coops. Be sure to include the coop in the training of the extension agents.

Extension agents need better training.

The high-level officers of the Extension Department all recommended the establishment of a Subject-Matter Specialist position in each area as a technical backstop to the more generally-trained and more numerous extension agents.

For a more effective impact, there should be more coordination between all the agencies engaged in trying to improve agriculture--Development Bank, Marketing Corporation Cooperatives, Extension Service, Experimental Farms, the Institute of Agriculture and Animal Science of the National University, etc.

Attempt to link the government's non-formal education efforts in agriculture and the formal school system. Agricultural pamphlets and periodicals should be furnished free to every school agriculture class. Government movies and exhibits should also be shown in the schools.

The content of literacy training materials should concentrate on agriculture, especially for classes held in the countryside.

Organizational modifications should be promoted to improve the linkage between problems and answers: farmers in need should be made aware of research findings.

Radio Nepal's agriculture programs should start with the farmers and their problems, not with what those in the capital think the problems to be and giving solutions that some feel to be impractical. Presently the Agricultural Information Center has no evaluation system to check on their effectiveness or the relevance of their taped programs. It might be good if they engaged in some 'explore and discover' with their clientele.

Capitalize on the progressive farmers and supply dealers as a channel of information flow to teach a greater number of farmers new agriculture techniques. The advantage of using these people is that they are already of the area and will not be held in suspicion as an outsider with the same message might. Use these linkages between the Extension Service and the farmers.

Include in the extension agents' training how to run a 4-H Club and to conduct other youth activities in agriculture, especially in schools that have no agriculture program. The seeds and the land should be provided by the district agricultural officer.

Provide short-term training for those who conduct leader-farmer training sessions.

Train and provide the opportunity for high school teachers of agriculture to conduct non-formal education programs in the area primary schools and for area farmers. The specifics of such a program would obviously have to fit the peculiarities of each culture and government.

There must be closer cooperation, perhaps in the form of a formal linkage, between the Extension Service and the extension-agent training institute and agricultural research. Such cooperation should assist the extension agent in doing a better job at this non-formal education function.

Provide for closer cooperation between the high school agriculture teacher and the area extension personnel. In Nepal there seemed to be little or no linkage, although the value of such cooperation seems obvious.

Those district agriculture officers who get out of the office and help their subordinates and the farmers are obviously the better men--men who care. Not only should men with these characteristics be chosen to fill these positions, but the reward structure must be altered to attract and retain such people. Reward activity, production, and decisiveness, not loyalty, nepotism, and inaction.

In addition to recruiting the more able people, design procedures that will reward the agents who get out and work with their clientele.

The government should guarantee a cash rebate to a farmer who agrees to conduct a demonstration or experimentation plot for the extension agent and that demonstration or experiment fails.

Start with a sure thing, like vegetables, to create credibility before moving into other areas.

Develop ways to increase the effectiveness of progressive farmers as a means to disseminating information among other farmers (non-formal education). To do this, one might start with U.S. Extension Service techniques.

Base the extension program on adequate agricultural research.

Use the off-season (between planting-harvesting-planting) for non-formal educational projects that deal with areas contiguous to plant production (e.g., storage facilities, plant disease) and in the production of other kinds of plants, like vegetables or fruits.

Improve and regularize the in-service training of extension agents so they can build on both their basic training and their field experience.

Good harvests produce higher incomes for farmers, and with increased use of new agricultural inputs, the future looks bright. One major task of non-formal education is to convince the richer farmers to invest this extra income in projects that will not only improve their own future crops, but also in non-formal education projects that will improve the livelihood of other citizens willing to work.

More complete administrative support for the extension agent can be achieved by coordinating the efforts those agencies working in the same general area. Coordinate especially the various resource efforts and the communication channels to spread the word about research finding.

Establish a linkage between the Ministry of Food and Agriculture and the Institute of Agriculture and Animal Science (which trains the JTA's) to facilitate the flow of information between these institutions.

Use festivals, which are of religious significance and also recreational, to communicate with farmers who concentrate in the villages on these occasions.

The ability of the central government to pay the extension agent more is unlikely, at least for the immediate future. But quality people can be rewarded in other ways, such as posting them in their home districts and thereby removing their frustration of separation from home and family. By rewarding high motivation and productivity in this way, the high turnover rate of extension agents should become lower. Plus, by posting a local person back in his own district, the area farmers should demonstrate lower suspicion than they would for an outside. Doing the same job.

The most important single area of concern that needs strengthening is the linkage between the farmer and the governmental structure. The message is of no value unless it gets through.

Non-Formal Education - A Few Suggested Projects & Methods

A government-operated fish farm hired local farmers to plant government-supplied corn on government land for future fish food. As the corn grew to maturity, the farmers, passing the government corn field each day, observed that the corn they were hired to plant and having done so in the traditional manner (only different input was the new seed) was much better than their own corn crop planted in their own fields. These farmers inquired if they could get some of the new corn seed for themselves; an arrangement was made whereby they could bring as much of their own corn as they wished, to be traded in equal measure for the new corn. (It apparently made little difference to the fish which corn they ate.)

In this way, the local farmers were asked to risk nothing in trying new seed before they saw the result, and then their requests for this new seed were supplied from the stock they had planted.

Develop a part-time trade extension program to help local craftsmen in the countryside upgrade and share their skills. This program should eventually cover a combination of related skills.

National Radio - This channel of communication is one with great potential.

There seemed to have been a reluctance by the Nepalese officials to repeat agricultural tapes already played on the air. There was lack of enthusiasm for the suggestion of producing and playing two new tapes a week in addition re-playing several times a week tapes already produced (from the growing tape library) containing relevant information at the proper season.

The chief of the Extension Service reacted favorably to the suggestion of creating a team of extension agents to travel around to the schools in an area to expand, update, and assist in agriculture classes already offered, or present an agriculture

program of a few days to a week's duration in schools without agriculture classes. Periodic visits would keep teachers and students abreast of the latest information.

If the government can supply an inexpensive fixed-tuner radio to each school conducting classes in agriculture and notify each of these schools as to the time (during school hours) the country's radio station will broadcast the agriculture programs (for farmers and students alike), the schools could schedule their classes around this broadcast time. In this way, new information and effective techniques could be more effectively disseminated, and the agriculture curriculum could be kept up to date.

If the above arrangement is realized, the next step would be for the Agriculture Ministry to supply supplementary information to schools receiving the radio broadcasts.

Supply simple agricultural leaflets to primary schools for supplementary reading practice (schools in LDC's are notoriously short of books), then suggest to students that they read them to their parents (farmers) in the evening.

4-II Club students took seeds back to their villages. When the extension agent later visited these remoter villages, he found the new seeds being used and new crops being grown--all as a result of having these club members bring these new inputs to their families and villages.

Even for those farmers who farm the whole year, they should be introduced to a wider variety of crops. Not that fruits and vegetables are not already available in Nepal, they are. But if more people began raising these supplementary crops, the price might come down and make the product available to more people. And the poorest farmers could grow their own and therefore not have to rely on the market for their supply.

Non-formal education - in general

Try to use existing institutions rather than creating new ones. This is often difficult because existing organizations are threatened by proposed change or shared use of either physical facility or staff. But if such a shared use can be negotiated (with the support of all concerned) not only will very scarce financial resources be saved and increased use of existing organizations produce more return on their investment, but the clientele (students) will be faced, not with a new institution trying to establish credibility, but with an institution that already exists.

Identify community leaders and secure their cooperation and support for any proposed non-formal education program.

Recruit skilled workers into teaching in the non-formal education program. Teachers with only a theoretical background and no practical experience are of limited value in such a program.

Focus on local students not only as recipients of non-formal education, but as a means to gain entry and acceptance to their families and villages for non-formal programs.

It almost goes without saying but is so obviously lacking in some areas--recruit people who will work for development and who are interested in the clientele. This is as true for non-formal educational as for more formal efforts.

Devote more research to areas with low probability of success before trying to educate and convince students of their value.

Any program, including non-formal education, must have adequate administrative support in order to operate successfully.

To stir interest and attract attention, posters and short bulletins should be scattered throughout the schools and marketplace to make people aware of non-formal educational programs.

More radios should be located at central points to increase the audience, especially among the poor. Couple this increase with non-formal education programs in agriculture, health care, nutrition, government, national history, etc. Such exposure will hopefully increase awareness and stir local interest.

The central government should establish district centers to administer area development, generally, and non-formal education programs, specifically. This would let the area leaders know that the central government does have an interest in the development of that area. Such district centers would hopefully tend to be less bureaucratic and closer to local needs. It is important that these district posts be staffed with people who are willing to make a decision and take action, and not defer to the central bureaucracy. (This requires well-drawn lines of authority and assigned responsibility.)

Any non-formal education program should be based more on the student doing than watching or simply listening. This means that some on-the-job or in-the-field experience is essential.

Base any non-formal education program on the needs of the people and of the country. If such a program does not reflect felt needs, at least in the beginning, there is little chance of success.

The administrators of non-formal education must do more than simply offer the service or program at the local level. They must try either to become part of the locale or work through those leaders already known to the area residents. The program must have something more than 'good' to offer, it must also overcome suspicion of people and forces from outside.

Be sure all those who conduct non-formal education programs have received some training in how to do the job effectively. This should include knowledge of the subject matter (no problem if the 'teacher' is a skilled craftsman himself), knowledge of the clientele and the locale (no problem if the 'teacher' is locally recruited) and an ability to organize and communicate that which is to be learned.

Before a non-formal education program has a chance of success, especially with farmers, the program organizers should demonstrate some real value and advantage to the clientele. What is offered must be of practical use.

When the program has been successful, attract attention to that success in order to get more people interested and learning.

When starting a non-formal education program, have an objective that is clearly understandable. While talking to the people and becoming known, keep the language of the explanations simple--limit discussions to basics.

Work to secure an element of trust from the people. If you don't know the answer to a question, say so.

Appendix

- Where do farmers in this area go for help with agricultural problems?
- Where do farmers borrow money in this area for agricultural purposes?
- Is there a radio in the area?
Do you ever listen to the agriculture programs?
Are they helpful?
- If you have a good harvest and make extra money, what do you do with that extra money?
- Where do farmers in this area get agricultural information?
- Are there any progressive farmers in this area?
Do you have any personal experience with any of these progressive farmers?
- Have you ever seen any films on agriculture in Nepal?
- Have you ever seen any pamphlets on agriculture? (Can you read?)
- How do you determine when to plant?
(Are your neighbors an influence?)
- Do you feel you need information about new agricultural practices?
- What are the reasons for some farmers being rich and others being poor?

(After about 40 minutes of interviewing, the farmers began to lose interest in the discussion. These questions, with translation, took about three-quarters of an hour.)