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EVALUATION:

RURAL DEVELOPMENT PROGRAM

AND

CENTER FOR THE DEVELOPMENT OF AGRIBUSINESS
OF THE PAN AMERICAN AGRICULTURAL SCHOOL

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CHAPTER I

INTRODUCTION

The Rural Development Program (RDP)

The Rural Development Program (RDP) was founded in 1987 as "The Kellogg Project". In time, it has become the entity of the Pan American Agricultural School that is in charge of the projection of the School beyond its own boundaries, including both its relationship with the communities located near the School and institutions within and outside of Honduras. The RDP, as such, has developed a rural development and extension program, with the dual purpose of improving the living conditions of the villagers around the School and of providing the students of the School the experience of working in rural development. Thus, the School's students can learn about rural development and agricultural extension in a manner consistent with the School's philosophy of learning by doing.

The Center for the Development of Agribusiness (CDA)

The Center for the Development of Agribusiness (CDA) was founded in 1990 as the technical-administrative arm of the School's Department of Agricultural Economy. Its primary objective is to train organized farmers, through the learning by doing process, in the analysis, planning, and evaluation of their production processes according to established economic criteria. The CDA's activities respond to the same dual purpose with which the RDP works: it is working for the benefit of the School's students at the same time that it works for the benefit of the small-scale producers in the area.

The Evaluation

Both the RDP and the CDA were interested in evaluating the work done during the last few years. They therefore decided to do a joint evaluation of the two institutions. Thus, the following evaluation covers both of these dependencies of the Pan American School. Because of the RDP's size and complexity, the evaluation spent more time learning about and analyzing the activities of the RDP, but we have covered both institutions as thoroughly as possible within the given time frame, including both the methodology and technology being used.

The evaluation's terms of reference are presented in Chapter II and its methodology in Chapter III. A list of the interviews made is included in Appendix 2.

The interviews and field visits were done during the two weeks from March 15 to March 28, 1993, and the evaluation report was written during the week of April 12-16.

The Evaluation Team

The evaluation team included three people:

Roland Bunch, the team coordinator, has a Master's Degree in International Agricultural Development from the California State Polytechnic University. He has twenty-five years' experience in rural development, mostly in Guatemala, Honduras, Mexico, and Bolivia, although he has done paid consultancies in over twenty-five nations. Mr. Bunch is the author of the book, Two Ears of Corn, A Guide to People-Centered Agricultural Improvement, which has presently been published in seven languages. Mr. Bunch is a member of the Advisory Committees of the Cornell International Institute for Food and Agricultural Development (CIIFAD) and the Committee on Agricultural Sustainability for Developing Countries in Washington, D.C. Presently, Mr. Bunch works as a Consultant for the Association of Consultants for a Sustainable, Ecological, and Human Agriculture (COSECHA), and as the Technical Director for Latin America of Trees for People/Germany.

Jorge Iván Restrepo graduated from the Pan American Agricultural School in 1982. Since then, he has worked with the Credit Fund for Agriculture, Industry, and Mining, the CIPAV Foundation, and the Buga Major Farm Institute, all in Colombia. Presently, Mr. Restrepo works as the Director of the Program for Agricultural Development of the Carvajal Foundation. Mr. Restrepo participated in the formation of the African Network for Sheep and Goat Raising in the Cameroun, and is a recipient of a National Science Foundation scholarship to write a manual on the production of salt and mineral blocks, the English translation of which has already been contracted by the Food and Agriculture Organization (FAO) of the United Nations. Mr. Restrepo has lead seminars and done consultancies in several countries and has collaborated on the writing of several published textbooks and manuals.

Dr. María Emilia Muñoz graduated as a Doctor in Veterinary Medicine and Animal Husbandry from the University of Caldas, Colombia, in 1982. She has worked since then in the Integrated Rural Development Program of the Coffee Producers' Committee of Caldas, doing technical training, extension, community organization, consulting, and the management of credit and marketing. Presently, Dr. Muñoz works as the Technical Coordinator of the Agricultural Development Program of the Carvajal Foundation. In this capacity, she provides technical and administrative advice to local non-governmental organizations (NGO's) supported by the Foundation. She also has worked as a consultant for development projects in several Latin American countries.

The Report

Since this report is directed primarily to people closely connected to the Pan American School, it assumes that its readers already have a certain basic knowledge of the School and the programs being evaluated. Therefore, it will not include any detailed description of these programs. Anyone wishing to find out more about these programs can avail themselves of some of the many pamphlets and reports which describe in plentiful detail the nature and objectives of each of these programs.

The following report is organized topically, according to the order of issues as they are addressed in the terms of reference. Under each topic, the relevant observations and recommendations appear more or less in order of decreasing importance.

The evaluation report has been produced in both English and Spanish.

CHAPTER II

THE TERMS OF REFERENCE

The terms of reference (TOR) for the evaluation of the RDP and CDA read as follows (translated from Spanish):

1. Objectives

- 1.1 Generate recommendations for the improvement of the extension programs of the School.
- 1.2 Describe the concept underlying the extension programs of the School.
- 1.3 Enumerate the results achieved to date.
- 1.4 Analyze the methodology followed by the programs.

2. Contents of the evaluation

- 2.1 Perception which the Director of the School, the Department heads, the professors and the students have of the extension programs.
- 2.2 Perception which the farmers in the area have of the objectives, content, and methodology of the programs.
- 2.3 Amount of knowledge, identification with the people, and motivation which the extensionists of the programs have.
- 2.4 Relations which the extension programs have with the research and teaching activities of the School.
- 2.5 Impact of the programs in the region, upon both direct and indirect beneficiaries.
- 2.6 Degree of sustainability of the programs.
- 2.7 Forms of documentation and follow-up of the actions the programs are taking.
- 2.8 Degree to which the administrative structures of the RDP are adequate within the over-all structure of the School.
- 2.9 Principal strengths and weaknesses.
- 2.10 Recommendations for improvement.

3. Expected evaluation methodology

3.1 The evaluation team is expected to follow a participatory methodology. The people who should be interviewed include:

- The Directors of the School: the Director and the Dean
- The Department heads
- Director of the EAP-RFA Project
- Leadership of the RDP and CDA
- Extensionists or employees of other institutions that work in the area
- Extensionists of the RDP
- Farmers

3.2 The zones to visit would be:

- The Zamorano Valley
- Morocelí
- Guinope

3.3 The areas to judge would include:

- Agricultural
- Animal raising
- Administrative
- Nutritional
- Gender
- Health
- Credit
- Communications
- Training
- Appropriate technology

3.4 A workshop should be held to discuss the results of the evaluation and the proposed recommendations. This description of the methodology should be taken only as a suggestion by the evaluators. It can be amplified in order to improve the execution of the evaluation.

Although it is not mentioned in the TOR, it was understood that, of the three sections of the RDP, the evaluation would focus on the extension section only.

Early in the evaluation, the RDP leaders and the evaluation team agreed on two modifications of the TOR. First, since the RDP and CDA have already done a series of evaluations of the impact of their work, there was no need to evaluate or describe numbers of activities done or levels of impact in the villages. It was much more important for this evaluation to judge several more qualitative aspects of the work: the adequacy of the methodologies and technologies being used, the quality of the work in the field, and the appropriateness of the present administrative structure, on the basis of both our own best judgement and that of the interviewees. In short, this was to be a process evaluation, not an evaluation of impact.

The second agreement was that Tatumbula should be added to the list of zones to be visited.

CHAPTER III

THE EVALUATION METHODOLOGY

The evaluation process, in general, included: a) interviewing of as many people as possible (see the list of people interviewed in Appendix 2), b) organizing and analyzing the results, while taking into account the experience and ideas of the evaluation team, and c) discussing these tentative results with the personnel of the programs and of the rest of the School. In this way, a large number of the School's employees could not only provide ideas at the beginning, but discuss, change, or come to understand the evaluation's conclusions. We feel this process not only lowered the normal level of tension accompanying any evaluation, but also achieved a broad level of participation, allowed a maximum number of innovative and valuable ideas to be included in our analysis, gave many people in the School a chance to analyze further the nature of the RDP's role within the School, and, finally, allowed a lot of people to discuss and come to partial agreements as to the conclusions of the evaluation.

This last factor is especially important, as decisions will be best carried out if and when there exists a certain agreement among the institution's personnel as to their desirability.

More specifically, the evaluation team dedicated the first two days to several background interviews (e.g. with the Director and the Dean of the School), a general orientation to the School, and the planning of the evaluation, including lists of people to be interviewed and questions to be asked during the interviews.

The list of people to be interviewed included: the Director and Dean of the School, all the Department heads, at least two professors from each Department, most of the personnel of the RDP and CDA, some twenty-five students (chosen at random, but with certain adjustments in order to make sure that students of each year and gender were well-represented), about thirty villager farmers (including both villagers involved in the programs and those not involved, and including people one of the evaluators has personally known for more than twelve years), and representatives of some ten other organizations that work in the areas covered by the School.

Even though a list of questions was also formulated, the interviews in general were quite open, so that the people interviewed felt free to provide any information or opinions they considered relevant. In this way, the evaluation team tried to create a climate of trust and open communication, rather than that often brought about by formal interviews. Many of the points of view that came out of the first interviews were added to the list of

questions so that the team could get a number of opinions with respect to each recommendation later included in the report.

Members of the team visited twelve communities (one in Moroceli, six in Guinope, two in San Antonio de Oriente, two in Tatumbula and one in the Montaña de Azacualpa), representing all four of the zones in which the RDP and CDA work. During these visits, we observed agricultural practices, experimental plots, animal-raising projects, housing improvements, etc. During each visit, local farmers were interviewed. Furthermore, two team members had visited some of these villages during the 1980's, so comparisons could be made with the previous situation in the villages.

Once each day or two, the team reviewed the information gathered so that each member of the team had knowledge of all the ideas presented up to that time. These meetings also allowed the team to discuss the most important points, add perspectives gleaned from our own experience, decide which questions required more information, and come to a consensus on the nature of the problems and some of their possible solutions.

Toward the end of the first two weeks, two meetings were held in order to discuss the most important recommendations of the evaluation with personnel of the School. The first of these meetings was held with the leaders of the RDP. During this meeting, the evaluation team presented the twenty most important recommendations and the leaders of the RDP suggested certain corrections and modifications. At the end of the meeting, everyone present agreed with those twenty recommendations.

The next day, the team presented fifteen of the recommendations to a group of forty people which included professors, extensionists and students. Once again, with certain modifications and additions, the recommendations received the apparent approval of those present. The one recommendation that received some opposition was that of converting the RDP into a Department. In this case, two people voiced opposition to the idea, but all the others who participated spoke out in favor of the recommendation.

Even though the team tried to create a climate of open discussion and acceptance of any opinion during these meetings, it is quite possible that opposition to one or more of the recommendations was not openly expressed during the latter meeting. Nevertheless, from what we could observe, there was fairly wide agreement in favor of all the recommendations. Those recommendations presented in the latter meeting, which were chosen because the team considered them to be the most important and most potentially controversial, are signaled in the following report by asterisks (*).

The evaluation team also reviewed a fair amount of the pertinent literature, including that dealing with the School and that dealing with education in agriculture and rural development in general.

CHAPTER IV

OBSERVATIONS REGARDING THE RDP AND THE CDA

A. The Concept of Rural Development

*1. The RDP suffers from a lack of definition of the very concept of rural development. Even though many individuals within the RDP have well-defined concepts of rural development, these ideas do not always coincide with those of others within the Program. And even the existing concepts have often not been shared with other people in the RDP, such as the extensionists. We do not believe that everyone must agree completely; such agreement would probably indicate a forced consensus. But we do believe that existing concepts should be shared and discussed, and the results of such discussion (including major variations in thinking) be documented in a well-formulated position paper. Such a process would help the RDP understand its basic goal better than it has in the past.

2. Many people within and outside of the RDP perceive a dilemma between the commitment the School, and therefore the RDP, has with its students, and the commitment the RDP has to improve the living conditions in the villages. Such a dilemma may exist in the case of a few of the School's activities (e.g. the case of the farm module), but we do not believe it is a major problem for the RDP.

The purpose of any extension methodology is to maximize the benefits experienced by the people in the villages per unit of expense or effort invested by the program. At the same time, the students will be most benefitted to the degree that they have the experience of working in a highly efficient extension program. Therefore, the more the extension program benefits the people in the villages, the more the students will be benefitted by having experienced a good quality program. Thus, no basic dilemma exists between the two aims.

3. There is a great deal of talk these days about the sustainability of agricultural development. This term is used in many different ways. Here we will use it in three ways: in its social, economic, and ecological sense.

Agricultural development is socially sustainable when the farmers come to understand the importance of agricultural innovation and have acquired the knowledge and resources necessary for them to continue trying out and adopting new innovations and sharing the results of their experiments with others. The RDP's work is dealing with most of these factors quite well, especially where it

* The asterisks indicate those observations and recommendations that were presented, as part of the evaluation process, to representatives of the different groups within the School.

is using the "experimenting farmer system" of extension, although the farmers still lack experience at sharing the information they have gained. To achieve this, it is important they develop their abilities to share ideas among themselves. This can be achieved through the training of villagers as extensionists.

Economic sustainability refers more to the economic feasibility of specific technologies over the medium and long term. The RDP, and especially the CDA, are quite aware of the need of taking into account all the factors that could enter into the calculation of feasibility, supply and demand, and marketing potential over time.

Ecological sustainability depends on the conservation (i.e. use without destruction) of the natural resources that are necessary or advantageous for the maintenance of high levels of productivity. Commentaries about this kind of sustainability are specific to each technology used, and therefore are included below in the discussion of specific technologies.

B. Structure

*1. We observed that the structure of the RDP is deficient in that there does not exist sufficient conceptual, organizational, or practical support for the extensionists, and the present leadership of the Program does not have the time, what with all its other responsibilities, to cover these very urgent needs.

C. Personnel

1. We wish to congratulate the RDP, in general, for the high levels of communication and participation that exist within the program.

We observed in the RDP a very good level of communication between the personnel at different levels and the extensionists, and between the extensionists and the farmers, as well as an ample amount of participation among all the Program's personnel in the program planning process. We believe that these factors are very important in the achievement of a satisfying work atmosphere and high levels of job satisfaction at different levels of the Program. Of course, there is room for improvement in the levels of virtually any organization, and all organizations must continually work to improve them, but the present situation within the RDP is quite satisfactory.

We make particular mention of the levels of communication and participation within the RDP because these factors are particularly important in an institution of this kind: an institution whose own structure is not participatory will rarely, if ever, allow the space for its personnel to do rural development work in a

participatory manner. It is largely for this very reason that, even though the literature on development recognizes that development projects rarely succeed if they are not participatory, very few development programs in the field ever actually achieve a participatory mode of operation.

We thus congratulate the RDP for having recognized that a participatory management style within the Program is a decisive factor in being able to do participatory rural development in the field.

2. We also wish to congratulate the RDP for the high level of motivation of its extensionists. The actions of the extensionists, statements of the farmers, and the results of the extensionists' previous work all gave testimony to the extensionists' high level of motivation in their work. This very positive motivation has had two more positive effects on the Program: the strong desire on the part of the extensionists to continue learning, and the good relationship they have with the people in the villages.

Perhaps extensionist enthusiasm does not seem to be particularly important, but a good many extension programs have failed for no other reason than a lack of motivation among their field personnel.

3. The extensionists are in need of more technical information and knowledge about theories of extension. Though it was true that the villagers never complained about the extensionists' lack of motivation, it was also true that they did complain at times about the extensionists' inability to answer their technical questions. Even the extensionists themselves said they often did not have the knowledge they needed to respond to the villagers' questions. This problem was admittedly more common in Guinope, where the people's knowledge of agriculture is more advanced because of the previous work of World Neighbors, but it existed in other areas, also.

D. Relation with Other Departments of the School

1. The other professors of the School often have a rather vague, and frequently negative, idea of the RDP, its objectives, and what their own role vis a vis the RDP should be. In some cases, they felt the RDP existed mostly to keep the villagers around the School happy or to demonstrate that the School was interested in more than just its own selfish well-being.

Some professors were unable to respond at all to questions about the role of the RDP within the School. Others said categorically that it had no role in the School, or that its role was limited to public relations. Others felt it could have some role, but one of only minor importance. Still others felt it could have a very important role, but with its present structure, or because of the "poor quality" of the students it had attracted (measured in academic grades), it was not able to properly fulfill that role.

There were also professors who supposed that the RDP would cease to exist once its GTZ funding ended. Most of the professors interviewed felt that the School should not have any financial commitment toward the RDP; if the Program was not able to raise sufficient funding from outside the School to support its activities, it should cease to function.

This lack of knowledge about the RDP would not be particularly worrisome if it were not for another related factor: a deep feeling, not totally universal but nevertheless widespread, that the RDP is of little import, that its role within the School is somewhat denigrating. In part, the lack of knowledge about the RDP reflects this attitude: if the RDP is not important, why take the time to become informed about it? The lack of any sense of financial commitment toward the RDP is another symptom. But there is no need to diagnose the disease by looking for symptoms. Many people openly expressed their opinions that the RDP was not important, that it didn't have much of a future, and that it was not an activity that was fit for a School of this caliber.

Where do these attitudes come from? In part from society in general. Our societies are permeated with unfounded but widely held attitudes such as the incompetence, lack of intelligence, lack of innovativeness, and even outright laziness of villager farmers; the idea that whatever does not involve large amounts of money is of no value; the idea that poor people are useless and that therefore anyone who works with them must also be somehow flawed or of lesser worth. Other negative attitudes toward the RDP have their sources in academia: that the natural sciences are more exact, and therefore more intellectually worthy, than the social sciences; programs that do not include PhD's are not worth as much as those that do; and a "Program" cannot possibly be as important as a "Department".

These attitudes toward the RDP would be no more than a small, insignificant irritant, not worth mentioning in this evaluation, were it not for the fact that this attitude on the part of others very fundamentally affects the ability of the RDP to function well and fulfill its most important objectives within the School.

These negative attitudes impact negatively on the RDP's ability to function in three major ways:

- Little by little, the students perceive and internalize these attitudes, and as a result, the vast majority of the School's better students decide against specializing in rural development. It is, of course, true that many students have already developed negative attitudes about rural development before they ever arrive at the School, and many others have no inclination, and never would have any inclination, even in a different environment, to ever study rural development. Nevertheless, students at all levels of the School, as well as professors from various Departments,

lamented that this negative attitude has convinced many good students who might otherwise have studied rural development that they would be wiser not to. Thus, the RDP has had a difficult time attracting quality students.

- Any training program in rural development must have as part of its over-all objective the motivation of the students to care about rural development and to see it as an activity of crucial importance. As the FAO has written, "The formation [of professionals in agricultural extension] requires motivational training...The motivation that should be created involves first of all a 'consciousness of the needs and urgency' of the problems of large sectors of small-scale producers." (FAO, 1991, pág. 30) This is always a difficult job, but it becomes even more difficult to the extent that other people in the School are creating negative attitudes toward rural development and the village people.

- To the extent that other Departments view the RDP as being of little import, they are less willing to cooperate, to dialogue, and to allow the RDP to develop functions such as bringing research questions to the School and validating new technology in the field. In the end, the relationships with other Departments that are absolutely essential if the RDP is to reach its full potential, are greatly complicated by the existence of these negative attitudes.

We in no way wish to exaggerate this point. There also exists within the School a good deal of support for the RDP and CDA. The very fact that so many people gave so much of their limited time to make suggestions to the evaluation team (the desire to collaborate with the team and help the RDP succeed was palpable in many, many cases) is evidence that a good many people in the School strongly support, and see value in, the RDP and its mission. Nevertheless, there also exists a widespread and profound feeling among the personnel that the impact of the RDP has been to some extent limited by the negative attitudes of others within the School.

E. Relation with the Communities and Other Institutions

1. It is obvious that the RDP has succeeded in markedly improving the image of the School, both in the neighboring villages and among other institutions within Honduras.

*2. The financial support for the RDP is ample, including donations from the Honduran government (through SECPLAN), the Swiss government (through COSUDE), the US government (through AID and the InterAmerican Foundation) and the German government (through GTZ), in addition to the United Nations (through the UN Development Program, or UNDP) and the Kellogg Foundation. The RDP also earns funds through its management of the Kellogg Center and the sale of training courses. Nevertheless, a significant portion of its total income still derives from one single institution: GTZ of Germany.

F. Extension Methodology

*1. We wish to congratulate the CDA for its recognition of the importance of the entrepreneurial aspect of rural development, and especially for its careful management of cost and benefit analyses and economic planning. It perhaps needs to be mentioned here that even though many people and many institutions recognize in theory the importance of these factors, few institutions have been able to integrate these factors as successfully into their daily work in the field as has the CDA.

2. We also wish to congratulate the RDP for having discontinued the use of give-aways in their work with the villagers. Among many other reasons for refusing to use this kind of paternalism, there is the fact that such paternalism distorts the economic feasibility of the technologies involved as well as the economic decisions that farmers make, which in turn makes virtually impossible the accurate validation of these technologies.

3. We also unanimously support the RDP in its decision not to try to introduce totally new crops and farming systems, but rather to look for ways of improving the systems and crops that the people already know about and which already are consumed locally or have proven markets which are accessible to local small-scale farmers.

4. In a majority (though not all) of the cases observed, the extensionists were working with too many different technologies, resulting in a lack of focus, a lack of time to really convince the people of the value of any of them, and, in general, the sacrifice of quality in favor of quantity.

It is important to recognize that as extensionists we have to have a good deal of patience. The people in the villages are not going to change everything overnight, just as we professionals would resist changing how we do everything. One must walk alongside the people, not rush ahead of them. If we try to teach too many technological changes all at once, they will simply forget it all, or choose one or two changes, and the efforts we spend on the rest of the technologies will be totally lost.

5. The present mix of demonstration farms seems to be fine: one "showroom farm," set up by the School in a very accessible location, to show people all the possible technologies that could be used in the area, and then a series of local villagers' farms, not necessarily ideal or totally transformed, but like those of Elías Zelaya in Pacayas or any one of various farms in Lizapa. These latter farms can be shown to other farmers and to visitors interested in seeing what farmers are capable of doing, the kind of technologies that farmers adopt under each set of different environmental conditions, and the level of results that can be expected of an extension program.

G. Documentation and Follow-up

1. The field-level documentation of the CDA was quite adequate, but was managed mostly by the Center's own personnel. In time, it would be advisable to simplify it and motivate the villagers themselves to handle it. The documentation done by the extensionists of the RDP with respect to their own work was deficient. Furthermore, the few forms they were supposed to be filling out were not up-to-date.

CHAPTER V

RECOMMENDATIONS

Under each one of the following recommendations, there will be a description of the recommendation and, where it seems necessary, a list of the reasons for which we are making the recommendation.

A. The Concept of Rural Development

*1. We recommend that the RDP develop a better conceptualization of what rural development is and which are the aspects of rural development that should be included or have priority in an agricultural school.

This effort should probably begin with a review of the literature (or acceptance of some basic analysis already done, such as that by Bernardo Peña and Alonso Moreno, Estudio para la Orientación en Desarrollo Rural) and then the preparation of a brief description of the different points of view that could form a basis for discussion. From there, the concept could be defined through a series of discussion sessions, including some professors from other Departments, all the personnel of the RDP and CDA, some students, and some leaders from the communities where the programs work.

In view of the fact that there are many definitions of rural development which sometimes differ greatly one from another, the objective of this exercise would not be that of reaching total consensus, but rather of 1) hearing the opinions of all those involved, 2) establishing a dialogue in which each person becomes aware of other opinions and lines of reasoning, 3) stimulating the thinking of all, and 4) arriving at some kind of conclusion (likely partial) with which most of the people feel comfortable, while at the same time clarifying the points of disagreement.

On this basis, the RDP could define, in written form, its concept of rural development and to what extent it is going to become involved in each aspect of it.

*2. It is essential that people both in the RDP and the School in general, recognize that the RDP is not training extensionists, but rather is training rural development administrators.

The Department of Animal Husbandry gives the students the experience of milking cows. Nevertheless, this does not in any way indicate that this Department is training milkers. It is training future administrators of dairy farms, future sales managers of products for the dairy industry and future owners of dairy-related industries. The Agronomy Department is not training day-laborers because its students are clearing land of rocks or fumigating

vegetables. The students do this kind of work because the School recognizes, and very rightly, that to be able to competently administer a given kind of work, one should know how to do it.

In exactly the same way, the RDP is not training students to be extensionists just because it is sending them out to work as extensionists. The RDP is training people who will work in the future as extension program administrators, as directors of rural development programs, as high officials in the Ministries of Agriculture or Ministries of Development in their respective nations, or as consultants or owners of agricultural consulting companies. It is training people who will influence how the governmental and non-governmental agencies of Latin America work in the rural areas of their countries, and on the basis of what policies.

If the RDP adopts this concept of its role within the School and Latin American society in general, the training it is providing to its students and extensionists would have to be significantly broadened. The training would have to include major components of the following topics:

- **business administration.** The proper administration of a development agency requires many of the same ideas, techniques, and abilities that are required to manage any other large business or institution, including personnel management, financial management, planning, etc.

- **training of professionals and paraprofessionals.** Not just the manager, but virtually all the personnel in a development agency must understand its development philosophy, as well as a long list of techniques and methods of rural extension and development. The training of all the personnel, hopefully through a process of learning by doing, is a very important task of any top administrator or middle manager of a development agency.

- **fund-raising.** The ability to raise funds is an important part of the work of many leaders of development agencies, especially non-governmental ones, although this is increasingly becoming a fact of life in governmental agencies, too.

- **computerization.** Every development agency administrator is going to have to be very familiar with computers and their potential use within development organizations.

- **program monitoring and evaluation.** Monitoring is an activity all development programs need to carry out from their very inception. The importance of evaluation (which, in most cases, should be largely self-evaluation) is going to increase as the competition for funding becomes more and more intense.

The Reasons:

a. It is totally unrealistic to think that people as competent and well-trained as Zamorano graduates will work as extensionists. First, it would be almost as poor a use of their knowledge and abilities as would be hiring a Zamorano graduate to milk cows. There is in the development field a great need for people who can manage well extension personnel. To use a Pan American Agricultural School graduate for anything less would represent a sad waste of human resources.

Second, no institution that we know of pays an extensionist anywhere near what a Zamorano graduate earns. If an institution is going to pay a salary anywhere near what the School's graduates earn, it is going to pay that salary to someone who is going to accomplish a lot more than train thirty or forty villagers. Zamorano graduates who study rural development will, therefore, be occupying positions with much better salaries and broader impact than those of an extensionist.

And, in fact, this is what has already been happening. The Zamorano graduates we know who are working in rural development have positions of considerable importance and impact. Jorge Iván Restrepo, a member of this evaluation team, directs the agricultural work of one of the largest foundations in Colombia. Through his work, he is influencing not only how a large number of NGO's in Colombia do agricultural extension, but he is also influencing the work of a number of NGO's in other Latin American nations.

Rafael Díaz Donaire, another Zamorano graduate, directed one of the largest of the organizations in the Honduran cooperative movement, and presently is the Country Director for World Neighbors, one of the most highly respected NGO's in Honduras.

Milton Flores, another Zamorano graduate, has been the Director, since its founding, of CIDICCO, the International Cover Crops Clearinghouse, an institution that is providing information on this increasingly important subject to more than 200 organizations in more than 60 nations around the world. Without a doubt, Milton has become one of the world's most well-known experts in the field of ecological agriculture.

b. More and more, NGO's and governmental organizations around the world are recognizing that no one has sufficient money to pay agronomists to train groups of villagers. Both because of a lack of financial resources, and because of the constant search for more efficient ways of operating, more and more institutions are employing paraprofessionals to work as extensionists, and agronomists to work in coordinating and supporting those paraprofessionals. Just in the center of Honduras, near the School, for example, World Neighbors, COSECHA, the Rural

Reconstruction Program, Global Village and Partners of the Americas have employed paraprofessionals, and RRNN has already employed villagers as "liaison farmers" in various parts of the country. The wave of the future will likely be that of using villagers to train each other. (See, for example, Two Ears of Corn, A Guide to People-Centered Agricultural Improvement, by Roland Bunch, the coordinator of this evaluation, and Desarrollo Agropecuario, De la Dependencia al Protagonismo del Agricultor, by the FAO Office for Latin America and the Caribbean).

Thus, the role of agronomists, in the best and most innovative of institutions, is increasingly that of coordinating, training, motivating and supporting villager paraprofessionals, not that of working directly as extensionists. This will be at least as true of Zamorano graduates as for any other agronomists.

c. The present image of the RDP as a "program that is training extensionists," and is therefore training people who will "hardly earn enough to be able to eat," as some people in the School stated it, will be totally abolished by this change in its purpose. Instead of training poorly paid extensionists, the RDP will be training managers who will likely be well-paid and who could well come to play major roles not only in relation to the situation of the majority of the people in Latin America, but in relation to the development policies and political economy of their respective nations. And this change of attitude toward the RDP will not be the result of some sort of public relations campaign, but rather of the wider acceptance of an already existing truth which fully deserves to be more widely recognized.

3. More consensus is needed within the RDP in relation to the conservation of natural resources.

We observed that in one zone the RDP's extensionists were trying out levels of fertilization several times higher than those used by Guinope farmers, while other RDP extensionists were telling Guinope farmers that they were already using too much fertilizer. Also, there are some ecological problems within the Yeguaré Valley which, among other things, are resulting in an insufficient supply of water for the School.

The whole topic of natural resource conservation and sustainable agriculture is very complex, and there is certainly no consensus on this issue in the world outside the School. Nevertheless, it would be highly advisable that the extensionists receive more orientation on this subject (provided, presumably, by the new Natural Resources Department) and that they then discuss some of these issues. It would also be advisable that they arrive at some kind of agreement as to what their message to the farmers will be, so they avoid causing confusion among the farmers.

Another important activity would be that the RDP, together with the School's Department of Natural Resources, the Ministry of Natural Resources of the Honduran government and farmers of the area, develop and implement a plan for the management of the Yeguaré Valley. Such a plan would not only respond to the urgent need of the School to assure its future water supply, but could provide an important experience of "learning by doing" for the School's students and a very positive example for many other institutions and communities in Latin America.

B. Structure

*1. We recommend that the RDP become a Department of the School.

As a Department, the RDP would have its own team of professors with specializations in topics related to rural development, such as, for example, the administration of rural development programs, theories of economic development, theories and methods of agricultural extension, rural sociology, communications, agricultural ecology and program evaluation.

This team of professors would have the capacity to do research in rural development, including studies of different extension methodologies and the impact of different development processes. It would have the time and expertise to write articles and books and have them published. And these professors would have the time to organize high quality concrete experiences in development for their students, so that they could experience first-hand the different methodologies and their impact.

Once the RDP was organized as a Department, the present activities of extension, as well as the courses in the Kellogg Center, could serve as the Department's equivalent of the production activities of the other Departments. The extension activities would provide the students with concrete experiences in development and material for their theses, while the courses would provide a source of income to help finance the Department.

One risk in making the RDP a Department is that it might then feel more independent and separate from the other Departments. It would be very important that the RDP, upon becoming a Department, continue making major efforts to dialogue, communicate with, and, when possible, coordinate its efforts with the other Departments. This is so because, just as in the case of the new Department of Natural Resources, the Department of Rural Development has as its specialization a topic that is closely related to that of all the other Departments. Just as natural resource management issues impact on the Agronomy and Animal Husbandry Departments, knowing the situation of small-scale producers, investigating what technologies small producers can and will use, learning how best to communicate these technologies to small farmers, and validating

these technologies are all activities that are of importance for each and all of the School's present Departments.

The Reasons:

a. The main reason for converting the RDP into a Department is that agricultural and rural development are areas of study and research that are well recognized internationally as important fields of study with their own ample and rapidly growing body of literature. Furthermore, rural development is a major part of the central purpose for the School's existence ever since it was founded: "to improve the standard of living of Latin America" (Escuela Agrícola Panamericana, p. 3). Establishing a Department of Rural Development would not be so much a move in a new direction as it would be a recognition of the crucial importance of one of the main reasons the School was established in the first place.

b. With a team of professors recognized as authorities in the field of rural development, the Department would have sufficient personnel, and the necessary depth of knowledge of the field, to give the extensionists and the students the theoretical and administrative support they need and so richly deserve. This team would also have the time to develop relationships with other institutions, organize field trips for the students to observe development programs in action, direct sessions of analysis of the experiences already had, in order to take full advantage of that experience, document more completely the nature and impact of these experiences, help the extensionists and students become more aware of what their colleagues are doing and learning, etc. That is, with this team of professors, the work in the field could be of better quality, provide a much richer learning experience for the students and extensionists and even the development community in general, and achieve more impact for the villagers with whom the School is working.

c. Just as the professors of each Department in the School help others to appreciate the role, the importance, and the unique characteristics of their own areas of specialization, the professors of the Department of Rural Development could also help the School as an institution recognize the importance, value, and unique characteristics of development, both as a human activity and as an area of research and study. This, also, would help improve the image of rural development within the School.

d. The simple fact of being a Department would help to clarify a whole series of doubts and ambiguities that personnel of the other Departments presently have in regard to the RDP. There would no longer exist so much confusion about the role of the RDP in the School, about what is and should be its relationship with the other Departments, nor about its sustainability as an institution. Nor would there be so many doubts about the status or importance of rural development in the School. Furthermore, the fact of being a

Department would help the RDP itself feel like it has become recognized as a valuable entity within the School.

e. As things are now, students in rural development have to look for classes in a series of other Departments, without there being any single entity which can provide courses on subjects missing in other Departments, help relate one course or point of view with another, or assure that their curriculum is complete and well-balanced. Once the RDP was a Department, it would be much easier for the rural development students to have the courses they need within a balanced and adequate curriculum, taught by a staff of professors that could coordinate their learning experience and give them whatever practical and theoretical support they might need.

*2. We believe the CDA needs to achieve a more participatory management style. Such a style of work could be better achieved through the adoption of some of the following activities, among others:

- A more ample discussion among the organized villagers (women as well as men) about the specific activities they wish to become involved in.

- Frequent, perhaps weekly, sessions of different groups of reflection among the personnel (with and without villagers present) to reflect on their experiences, in order to learn from them and communicate among the personnel, and between the personnel and villagers, the different ideas they have. In these sessions it would be very important that 100% of the people present have the time to express themselves and the experience of doing so.

- One good exercise, which could be done once a month, would be to write down a list of the twenty most important decisions made by the Center during the month, and after each one, record who originated the idea and who made the decision to adopt the idea as policy. In this way, the Center can become more accurately aware of the sources of its decisions and to what extent these sources of decisions respond to a participatory process of development.

Of course, some decisions in any institution are made, and must be made, at the top. But if the style of development we are using is one which is to truly favor the formation of village-level entrepreneurs through a system of learning by doing, the villager farmers must also be making a good number of decisions. Decision-making is, after all, an important part of being a competent entrepreneur.

3. If the experiment of establishing the School's rules of conduct in a more participatory manner is continued, we would suggest that good conduct and superior academic performance should be prerequisites for taking part in these decisions.

This suggestion is consistent with two principles which we believe are important in the field of human behavior:

- Discipline should not include negative sanctions only, but rather, should include positive sanctions as well. If the students know that they will earn certain privileges (such as being able to participate in the decision-making with regard to the rules of conduct), this positive reinforcement will also help them to respect more those very rules.

- In society in general, rights and responsibilities go together. People earn rights and privileges to the extent that they demonstrate their responsibility, and rights (even those as basic as life and liberty) are withdrawn from those who demonstrate significant irresponsibility. The same principle should be observed within the School: those students who demonstrate their sense of responsibility deserve to have special rights, such as those of participating in the making of important decisions.

This kind of a system of participation by the more exemplary students will also avoid the problem of less responsible students weakening the rules because of their own desire to act irresponsibly. This problem is precisely what has occurred in some of the other institutions of higher learning in Central America, to their tremendous detriment.

C. Personnel

*1. We were asked to include in the evaluation some suggestions on the profile of the new Dean of Projection. Here we present a few points on which virtually all the people interviewed agreed upon:

- That he/she be open to dialogue, with significant communication skills.

- That he/she have ample experience in the administration of rural development projects in Latin America, and that these projects have produced well-substantiated positive results.

- That he/she have proven skills in leadership and conceptualization.

- That he/she be, preferably, Latin American.

- That he/she have credibility as a researcher (that is, that this person be amply published).

*2. We recommend that the induction of students and extensionists into rural development studies and the RDP be improved. It is important that, from the very beginning, the students have a good

impression not only of the RDP and CDA, but of rural development in general. Therefore, we suggest:

- That the farm and extension modules be strengthened. The mere visiting of a series of village farms without any real basis for judgement or tools of analysis seemed to many students to be a waste of time. These visits therefore created in some of them a negative attitude about rural development. We feel that farm visits should be part of a whole process for the student which should begin with the study of traditional agricultural systems (there is now very good material in books such as Gene Wilken's Good Farmers, Traditional Agricultural Resource Management in Mexico and Central America and Indigenous Agricultural Revolution by Paul Richards), ideas about how to observe and analyze traditional agriculture, the practice of participatory rural appraisal (PRA), and exercises of social sensibility. A different theme could be developed for each visit. For example, one visit could revolve around the ways small-scale farmers maximize the use of the family's labor supply during each season of the year, another could be used to analyze the role of trees or of organic matter in traditional agriculture, and another to investigate the role of women in villager agriculture. After each visit, a reflection session could allow the students to share among themselves the ideas learned during the visit.

In this manner, the module could be of much more benefit to the students, and it would give them much more appreciation of the intelligence and rationality of villager producers. It would also give them an idea of the tremendous challenge that is inherent in this field of endeavor we call agricultural development.

There were complaints on the part of farmers that they lost a lot of time because of the rural development modules. This problem, of which the School is already aware, must be dealt with.

- The extension module needs to be modified. Some students commented that the students in the extension module do not yet have enough knowledge to be able to offer anything of use to the farmers. It would therefore be better for students to enter this module during their third year or to have fortified their knowledge of certain specific technologies which would be of use to the communities visited.

- The farm and extension modules should be taught by professors from the Department of Rural Development. Various students told us that the people who taught them these modules did not seem to be very interested in rural development themselves. An additional advantage of having a Department of Rural Development with its own professors is that of being able to manage these modules in such a way that the students would become interested in the field, in part through the very example of their professors, who obviously would have a strong interest in the topic.

- That the induction seminar begun last year be strengthened so that the students in rural development and the extensionists are well-oriented with respect to the RDP and its objectives. Such an induction should probably include most of the following points:

a) the RDP's concept of rural development, b) a practical workshop in communication, c) notions of how to treat villagers, how to talk with them (i.e. their distinctive vocabulary), how to dress properly in the field, etc., d) some basic principles of rural development program management, including techniques for stimulating discussion, notions of group dynamics, program evaluation, etc., e) an introduction to the theories of extension, f) the nature of appropriate technology, g) an introduction to the topic of sustainable agriculture, and h) some basic data about the area around the School in which they will be working.

3. We believe there is a need for more continuity in the RDP's extension work. Therefore, three-year terms for each of the extensionists would seem to be preferable to the present two-year terms. Also, more effort needs to be made to ensure that each extensionist overlaps with his/her predecessor for at least three months. A monthly or bimonthly report by each extensionist on what he/she has done in the field would also be useful to the extensionists who follow them.

Another way of addressing the continuity problem is through the use of other personnel that is more permanent. Paraprofessionals from the communities themselves, as well as professors who would be in charge of supporting the extensionists would be more permanent, and therefore could help to orient new extensionists.

4. It would be useful to the students in rural development to have more experience in attending conferences, forums, workshops, etc. Some Zamorano graduates voiced the opinion that they felt well prepared for most everything they do in their professional lives, except for that of participating in conferences and forums. Activities such as preparing papers for conferences, presenting papers, serving on panels, managing workshops, and using group dynamics techniques, were the one thing they felt unprepared to do. We congratulate the RDP and CDA for already having provided some of their students experiences of this nature, and believe that more such experiences should be provided for the students in the future.

D. Relation with Other Departments of the School

1. There should be a stronger relationship of mutual support between the RDP and the other Departments. Many of the School's Departments have extension or other activities in the villages around the School. We recognize that it is necessary to respect the traditional independence of each of the School's Departments, even in cases such as this. Nevertheless, there should be at least some level of communication between the Departments and the RDP so

that each group knows what it is the others are doing and can learn from each other's experiences with new methodologies and technologies. While it is true that the independence of the different Departments has favored an internal dialogue rich in its diversity of viewpoints, it is also important that these differing viewpoints enter into dialogue and that their interplay enrich and stimulate that dialogue, not that they remain as quiet, isolated islands of knowledge, unchallenged and stagnant.

Some dependencies of the School expressed a desire for more coordination with the RDP and CDA. The Food Technology Project was one.

*2. The RDP could serve as a bridge between the School and the communities, both communicating to the School the nature of the problems that Honduran farmers encounter, and helping to validate the technology developed by the School.

It was a particularly poignant moment during the evaluation when we asked the RDP's extensionists to tell us which of the technologies they were using had had the most acceptance and impact within the communities. Two out of the four technologies they decided on were technologies neither taught by, nor developed by, the School. If technology is neutral (or even if it is not neutral and the School has as its goal the development of technology for different levels of producers), this is an indication that the technology taught in and produced by the School is not responding very well to the felt needs of a large part of its target group. That is, there are objective indications that the research activities of the School could be better oriented if there were more communication between the communities and the researchers.

Furthermore, even though some Departments are already making efforts to validate their technologies in the villages, there is a good deal more of such work that could be done.

We therefore believe that, converted into a Department, the RDP could serve quite well as a bridge of communication between the communities and other organizations in Honduras, on one side, and the research activities of the School, on the other. This bridge could serve both to communicate farmers' needs to the School's researchers and to validate the technologies of the School's researchers in the field.

The RDP is already fulfilling this role to a certain extent, especially in conjunction with the Agronomy Department. But it could do a good deal more along these lines. This would be a function quite natural to the Department of Rural Development, because of its considerable involvement with the villagers--and relationships with other institutions--through which it becomes aware of the farmers' problems and the levels of acceptance of a good many technologies.

To the extent that the School in general is going to strengthen its research activities in the near future, this role of liaison with the communities becomes more important.

E. Relation with the Communities and Other Institutions

1. In view of the fact that Honduras' NGO's, and those of Latin America in general, have quite a varied, and in some cases, successful experience in rural development, it would be worthwhile to develop a series of interchanges of ideas and experiences with these organizations.

Various specific activities could be included among these interchanges:

- Increase the number of field trips to NGO projects so that the students can come to know these experiences first-hand.

- Do an in-depth study of the success or failure of the technologies already promoted by NGO's, in order to find out what technologies have already been tried and what are the advantages and disadvantages of each technology from the farmers' viewpoint.

One example of the value that such a study could have is the fact that of some fifteen rabbit raising projects that one or the other of the evaluators has known, there has not been a single success. Nevertheless, the RDP is promoting rabbit raising. It was no surprise at all for the evaluators that of the four families with active rabbit projects that we visited, two (in Silisgualagua and Azacualpa) had suffered major setbacks during the two weeks prior to our visits.

- Search out opportunities to deepen the understanding of the methodologies used by these organizations. This could be done, for instance, through week-long visits of individual extensionists to selected NGO's to observe much more in depth the extension methodologies used and their impact.

- Provide opportunities for the students to do their theses on aspects of the methodologies or technologies used by the various better quality NGO's.

The Reasons:

a. The subjects of rural development and extension are in a period of rapid change. New experiences are providing us with new techniques, new guidelines, and increased potential almost daily. If the School is to stay abreast of recent developments in rural development, it is very important that it make contact with a good many sources of information and experience. To that end, the School has many very good resources near at hand:

- The experiences of Honduras' and Central America's NGO's have been, in some cases, quite successful--so much so that even institutions in Africa and Asia have adopted some of the methodologies and technologies developed in these countries.

- The experience of Central America's NGO's is highly varied, providing examples of what does not function as well as what does. It is very important to become aware of what does not work well, in order to avoid that all too common phenomenon in the field of development: the re-invention of wheels that so often turn out to be square.

- Honduras and Guatemala are probably among the countries with the densest population of NGO's, both national and international, in the world. Therefore, the gamut of experiences geographically close to the School is particularly rich.

b. As the FAO states, "The [agricultural] professional should know, and be able to interact with, the the public and private institutions supporting rural development, in order to be able to critically analyze their organization and effectiveness, and be able to contribute to a higher level of efficiency in the carrying out of their functions."(FAO, 1987, p. 48) This, also, the School's students and extensionists should learn by doing it.

2. We believe that the RDP urgently needs to diversify its funding sources. With the very good reputation the School enjoys, the significant influence that the RDP could have on the future of development in Latin America, and the multiplier effect that the School's students represent, the RDP should have no problem at all in attracting more financial support from a whole series of different sources. Other recommendations included in this evaluation should also help the RDP in its fund-raising: the better conceptualization of rural development and the School's proper role in it, the up-dating of the School's methodologies in rural development, and the increased interchanges with other institutions. But it will also be necessary to dedicate more time to the researching of funding sources, the preparation of proposals, and dialogue with different potential funding sources.

F. Extension Methodology

*1. Although the RDP already has quite a comprehensive system of planning, we believe it would be possible to strengthen it. With that purpose in mind, we make the following suggestions:

- The first step in over-all planning for the RDP is to establish its general conception of rural development, and then establish the RDP's over-all objectives on the basis of this general conception. From this base, then, the short- and medium-term goals should arise directly from these over-all objectives.

- It is important that the planning process start as close as possible to the farmers in the communities, and that the entire process of analysis and decision-making involves people at all levels of the organization.

- It is much more important to measure the impact in the field (for example, increases in productivity or in incomes) than to measure either activities of the RDP's personnel (for example, number of talks given or visits made) or activities of the farmers (for example, hectares of land or number of experimental plots planted). Nevertheless, in various RDP progress reports we read, the indicators of progress consisted mostly of personnel activities. Indicators of positive impact were almost entirely absent. It would probably be better for the program to have fewer indicators (too many indicators can cause confusion and a lack of flexibility in a program), but make sure that most of the indicators that are used be indicators of program impact. For more information, see Two Ears of Corn, op. cit., pp. 59-63.

***2. The role of women in the extension program should be strengthened.** We wish to congratulate the RDP and CDA for the level of participation that women have in their programs, but we also believe that there are some ways in which women's participation could be increased and improved:

- Make sure that women have the same opportunities for participating as men do, especially in income-producing activities. In order to accomplish this, it is important to disaggregate the impact on women from total impact, from the beginning of the planning and goal setting process clear through to the reporting of results, in order to know for certain the relative impact on each gender. In this way, also, the projects' impact by gender will be better documented.

- Separate groups for women are only justified in those cases in which women have a special need to meet alone (for example, when they are not used to participating in joint meetings and therefore need practice in speaking up in meetings). Otherwise, women and men should work together in groups of mutual interest.

- Since Honduras' agrarian laws have recently changed so that women now have an equal right to, among other things, possess land, the spread of information about these changes in the law should form an integral part of the Program.

3. We have some doubts as to the way the risk factor has been calculated in the CDA's work. For example, we feel the recent history of corn cultivation in the Moroceli area would indicate that growing corn without irrigation has a high enough risk that it would not be at all advisable in this area (considering that the profit margin is fairly low even in a good year). Calculations of risk are always somewhat subjective, but perhaps methods of

calculating it in drought-prone areas such as this could be studied further.

*4. A majority of the training courses should be carried out in the villages rather than in the Kellogg Center. Furthermore, they should be shorter (one day, or even half a day, is easier for villagers), with the specific topics to be covered timed according to the agricultural calendar, and with more use of audiovisual aids. This procedure would probably lower the cost of the courses, would allow more women to participate (it is difficult for them to leave their children while they attend two- and three-day courses a long distance from home) and would permit the incorporation into the courses of more field visits to local farms and of more practical activities in those fields. There are also benefits to be had from farmers' observing activities and processes which go on in the School, but this can be arranged through occasional visits to the School.

*5. The extensionists need more audiovisual aids. Presently the extensionists' field work is being done with virtually no such materials. Probably the most valuable equipment right now would be one or two cameras and two or three small slide projectors with rechargeable batteries (see World Neighbors' catalogue), in order to show farmers the successes of other farmers in the area or in Honduras. Some flipcharts and filmstrips would also be useful.

6. If the RDP decides to establish a credit program, it would be advisable to:

- study the experiences of other credit systems in Honduras, paying special attention to repayment rates and methods of achieving good repayment rates.

- make a plan for the management of the credit program, including the possible formation of credit groups in the villages, maximum loan sizes, credit terms, and the system for recovering loans.

7. The extension work of the RDP could and should make much more use of villager extensionists. There already exist, within the villages covered by the RDP, villager leaders who have been trained as extensionists, or even have years of experience as such. These people, together with those being trained by the RDP directly, could form a good team of paraprofessional extensionists, so the School's students and extensionists could also acquire the experience of supporting and managing paraprofessionals. The training of villager extensionists, who would remain in the communities when the School's work terminates, would also provide more sustainability to the RDP's work. Plans (and budgets?) should very soon be made so that this human resource can be incorporated into the program as soon as possible.

One of the reasons behind this recommendation is that we believe that the ability to train, support, manage, and motivate paraprofessionals is one of the skills which is most needed and most lacking among the agronomists in Latin America.

8. The extension work would be much more efficient, and provide a more valuable experience for the extensionists, if it were organized around village groups rather than individuals.

*9. We doubt that it is a good idea for the RDP personnel to teach primary school students directly. It would be better to train the school teachers and for them, in turn, to teach their students.

We also believe it would be advisable to define more precisely what the specific concrete objectives of this activity are.

G. Documentation and follow-up

Our only suggestions with respect to documentation and follow-up have already been mentioned above.

H. Technologies Being Used

Here we will make a list of the technologies the RDP is promoting, along with some very brief commentaries on each one. Of course, much more could be said about them, but it is not the purpose of this evaluation to write a book, or several books, about sustainable agricultural technologies.

In general, we believe that the most serious problem with regard to technologies is that the RDP is promoting too many of them. The whole human process of agricultural improvement advances better, and in a much more sustainable manner, when the technologies are introduced in a more gradual fashion.

Soil conservation and restoration

Living barriers. There is no reason to work with only one species in the living barriers. A good mix of four or five species can be more useful to the farmer. For example, one can have two barriers of Kinggrass or napiergrass to feed his or her animals, some twenty meters of lemongrass to make tea, another ten meters of vetiver for medicinal use, and 200 meters of sugarcane in order to sell sugarcane juice or provide feed for cattle during the dry season. Where there is a shortage of firewood, one or two firewood species can also be used, although these require more labor during the seasons when the demand for labor is highest (the wet season).

Contour ditches. After some twenty-five years of promoting contour

ditches, we are about ready to abandon them, for various reasons. One is that with in-row tillage, they are no longer necessary. The second reason is that we are becoming more and more convinced that keeping the soil covered is much more important than any kind of physical barriers. And now, with intercropped green manures, we are able to achieve this cover quite easily. A very small, shallow ditch could provide more soil humidity for fodder grown in the barriers for use during the dry season, but the large ditches do not seem worth the effort, unless they are needed for drainage.

Rock barriers. These should only be used when the quantity of rocks in the field is such that it causes serious problems for other agricultural operations. In most cases, small lines of rocks every two or three meters, instead of larger rock walls every eight meters, are just as practical, and require much less work.

Green manures. After working with intercropped green manures some nine years, we are coming to the conclusion that this technology is the most important and most appropriate technology for small farmers that we have ever worked with. Green manures provide soil cover, fertilize the soil, control weeds, and provide high protein foods, all at virtually no cost. We still need to do a great deal of research about these crops, but we already know of species to intercrop with corn, beans, potatoes, strawberries, etc. In parts of southern Brazil, no crop is planted without its accompanying green manure crop.

For intercropping with corn at the higher altitudes (from 1,600 mts. on up), we should be experimenting with scarlet runner beans (Phaseolus coccineus) or sweet clover (Melilotus spp.), among others. In lower areas, we should be using velvetbeans (Mucuna spp.) and trying lablab beans (Lablab purpureum) or jack beans (Canavalia ensiformis). Lablab beans are quite edible and also serve as a high quality forage.

Basic grains

Corn. Introducing improved varieties is easy, but it does not respond to the limiting factors of the system (in this case, soil fertility and shortages of rain water). Furthermore, new varieties may improve yields, but only over the short term and for one species, while improving soil fertility or water retention can provide the basis for long-term increases in yields--of any crop.

We believe that the technology that will most benefit the farmers' corn production in a sustainable manner is the use of green manures and a little urea to supplement them.

One precaution: in the Yeguaré Valley near the highway, the farmers are presently using chicken manure, and are only going to adopt intercropped green manures when the price of chicken manure rises to levels a good deal higher than it is now.

Beans. It seems to us that, in many villages, your search for mosaic resistant varieties of beans is precisely the right approach. For places where bean mosaic is not a problem, proper cultivation methods with appropriate fertility and plant populations can raise traditional bean yields by five times. Where beans are planted during the second season, intercropping velvetbeans with the first season corn crop is a practice that would be well worth trying.

Potatoes. The idea of raised beds for potatoes seems to be an excellent innovation, and one which has obviously awakened the interest of the farmers.

Instead of continuing the experiments with higher levels of fertilizer, we believe it would be good to research the intercropping of green manures among potatoes. This would be a totally new technology for Honduras.

Soybeans. In spite of this crop's tremendous popularity in other countries because of its protein value, we do not recommend its use among small farmers in Honduras. Basically, there is nothing soybeans can give us that lablab beans or scarlet runner beans cannot provide for one fourth of the cost and/or labor. For the small subsistence farmer, the percentage protein in the grain is of no importance whatever. What interests him or her is the cost (in money or labor) per kilo of protein. What matters to the cook is the quantity of work that goes into the preparation of each kilo of protein. Soybeans are too expensive by both these criteria.

When scarlet runner beans or lablab beans are planted as green manures and cover crops, the grain is a by-product of the farming operation, costing only the value of the labor used to harvest it. Soybeans, on the other hand, cost money and a good deal of work. Both lablab beans and scarlet runner beans can be cooked just like the common red dry beans, thereby requiring much less labor than soybeans in their preparation.

After many years of working with soybeans, most of our villager extensionists no longer recommend them, ever.

Other crops

Garlics and onions. These crops are the mainstay of several villages which now probably have the highest incomes of all the small-scale producers in the area. Working with these farmers should therefore probably not be a major priority of the RDP. Nevertheless, introducing these crops to other communities that are ready to use them (that have irrigation water and well-prepared, fertile soils) could be a very valuable effort.

Diversification. Small-scale farmers in the center of Honduras

will only rarely diversify if they cannot produce all the corn and beans they need for each year's consumption. Nevertheless, the moment they can produce more corn and beans than they need, they realize that corn is not a good cash crop, and begin to look for commercial crops to plant, whether anyone pushes them to diversify or not. This phenomenon is already widely apparent in many villages of Guinope where World Neighbors worked, such as Casitas (where many plant roasting ears), Lizapa (irrigated vegetables), Pacayas and Mansaragua (garlics and onions), and La Mesa de Oropolí (tomatos and green peppers).

Although it seems ironic, the best way to achieve crop diversification in a sustainable manner is thus to improve the soils for people's traditional crops. This process has already occurred in many of Guinope's and Tatumbla's villages, but in Moroceli diversification should probably start with basic grain improvement.

Home gardens. Hondurans do not, by custom, plant annual crops in the gardens around their homes. On the contrary, they plant citrus fruit, bananas, avocados, mangos, sugarcane, coffee, medicinal plants, etc. Even the chiles they plant in their gardens are usually perennials. Why? Probably because the perennials:

a) require much less work per unit of harvest, b) provide shade for the home, c) are easy to harvest, and therefore easy to steal, so they must be close to people's homes, d) are not damaged by chickens and pigs, e) do not require inputs such as seed, pesticides, and fertilizers every year, and f) provide all the vitamins and minerals that the annuals provide.

We would suggest that the RDP research ways of improving (in the nutritional as well as the productive sense) the traditional gardens of the villagers, rather than trying to totally change the (very likely superior) concept the people already have.

Animal raising

Cattle. The programs have identified quite well the limiting factor in cattle production: fodder during the last months of the dry season. But the use of silage is probably not the ideal solution for small-scale producers.

We would suggest that cattle could be well fed during these months through the use of sugarcane, green manures, and fodder bushes or trees that are high in protein. If lablab beans are used as a green manure, they can frequently provide abundant feed until February or March. Then sugarcane (planted in living barriers), supplemented by lablab seeds and leaves from fodder trees (for example, Glyricidia sepum) can provide a very good diet for the remaining two or three months.

Although sugarcane in large fields dries out toward the end of the

dry season, there are several cases of sugarcane planted in living barriers or very narrow plots that were still quite green in the middle of March when we did the field work for this evaluation.

Goats. According to an evaluation of the long-term experience that Heifers, Int., had with small animals in Honduras, goats were the one species which worked out well among small farmers. But even so, that experience is not particularly heartening. First, it has been observed that people tend to keep their goats until they can buy a cow, and then they often lose interest in their goats. Second, goats are ecologically dangerous (their introduction could be responsible for a major ecological disaster). And while it is quite possible that the farmers the program works with directly will maintain them in pens, what will happen with the farmers who buy the goats later on?

One alternative that will probably be more sustainable, both in the social and ecological sense of the word, would be to provide loans for people who already have sufficient fodder and sugarcane, so they can acquire a milk cow.

Rabbits. We are of the unanimous opinion that the work with rabbits should be discontinued. As explained above, no rabbit projects we know of have ever succeeded among small farmers. The fact that two of the four families we visited with rabbits had had major losses in the two weeks before we arrived is typical. Poorly managed, rabbits die from an incredible variety of diseases. Well managed, they cost so much that their meat is the most expensive meat in the village. Furthermore, if the people have enough red beans, lablab beans or scarlet runner beans, meat is, dietarily, an unnecessary luxury.

Fish. No one is going to become rich raising fish, especially in the cooler climates of Guinope and Tatumbla, but fish ponds seem to have shown themselves to have a certain popularity and sustainability in the area. And their advantages with respect to people's diets are obvious: they can be harvested little by little as the family wants to eat them.

Twenty-five years of experience with Tilapia in dozens of countries tells us that the three greatest obstacles in small-scale fish raising are the locale, the digging of the pond, and the harvest.

To raise fish, one needs a year-round source of water and nearly impermeable subsoils. The digging is always hard work, but can be maintained at a minimum if the ponds are less than five meters wide (so the dirt can be thrown up on the side with a shovel or hoe) and less than a meter and a half deep. (see the World Neighbors filmstrip on fish raising)

Fish are the only case in which, having a product ready to harvest, people often do not use it. One must think right from the start in

easy ways for the people to harvest the fish (hand-thrown fishnets?) and be sure that the people realize that Tilapia are better to eat when they are still fairly small.

Vaccination. Vaccination is a cheap technology that is easy to learn and often quite popular. Its limitations consist of the availability of **dependable** sources of vaccine for small numbers of animals, and the "cold chain". The important factor, then, is to ensure that the people buy the vaccines themselves and learn (by doing) how to use them. Also, it is generally better to use only those vaccines that do not require refrigeration.

Reforestación

There are many forests in the area still, but they are being uselessly and widely damaged. We believe that the protection and improved use of already existing forests would have a much better cost-benefit ratio than does reforestation.

The planting of living barriers with firewood species and the making of fuel-efficient stoves can help, but probably the most valuable activity would be a series of demonstrations and reflections on the relation between forests and rainfall and the fact that, if things continue as they are going, the droughts will likely be more and more severe.

Housing improvement

Lorena stoves. We see the lorena stoves as a well-chosen technology to promote.

The most important factor in this respect is that getting the people to use the stoves well after they have built them is just as important, and can take just as much time, as the construction itself. Also, one must always be aware of what the women want in terms of the size and shape of the stoves and the secondary factors such as the platform on which to put utensils and pots. One should encourage them to make suggestions and modifications before and during the construction, so that the stove making, like the process of agricultural innovation, is a learning process which fully recognizes the creativity and intelligence of the village people. This process should help the people not only to feel that they own the technology and know it well, but are capable of being creative and modifying this and other technologies in the future.

Composting latrines. None of us on the team has ever seen a villager make a composting latrine with his/her own resources. When one considers the cost, one understands why. This project has virtually no possibility of sustainability. We would recommend that it be discontinued.

Grain storage bins. Especially in the warmer areas (where grain storage losses are usually higher) this technology is one which has widespread acceptance and a very important and sustainable role within the communities. The largest barrier to its adoption is its initial cost: people need to buy the bins at precisely the period of the year when they are least able to afford them. If they sell their grain to buy the bins, they no longer have anything to put in them. Therefore, the use of credit, as the Program is doing with the woman in Guinope, can be very useful. In just a few months, people can pay the loan by selling the grain at a much better price than they could at harvest time.

It is important that people use some sort of fumigant in their bins, such as ashes, ground chile peppers, or cooking oil.

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APPENDIX 1

ABBREVIATIONS AND DEFINITIONS

CDA	The Center for the Development of Agribusiness, an institution which serves as the technical-administrative arm of the Department of Agricultural Economics of the Pan American Agricultural School.
CIDICCO	The International Cover Crop Clearinghouse, an NGO in Honduras which provides information on cover crops and green manures to institutions in more than 60 nations around the world.
COSECHA	The Association of Consultants for a Sustainable, Ecological and People-Centered Agriculture, a Honduran NGO established to disseminate throughout Latin America a series of new but proven ideas about people-centered agricultural development.
FAO	The United Nations' Food and Agriculture Organization.
GTZ	Gesellschaft Fur Technische Zusammenarbeit, the development organization of the German government.
NGO's	Non-governmental organizations.
PRA	Participatory rural appraisal. This consists of a series of techniques presently used by many of best quality development institutions to learn about the communities in which they are going to work, gain the confidence of the people in those communities, and measure the progress of the program as it progresses.
RDP	The Rural Development Program of the Pan American Agricultural School.
RFA	Spanish acronym for the Federal Republic of Germany.
SECPLAN	The National Ministry of Planning of the Honduran government.
TOR	Terms of Reference of this evaluation.
UNDP	The United Nations Development Program
USAID	The United States Agency for International Development, the agency of the United States

government which manages that nation's aid for economic development.

World
Neighbors

An NGO based in Oklahoma, USA, which has done rural development work in Honduras since the 1970's

Zamorano

Another name often used for the Pan American Agricultural School because it is situated on a piece of property which was previously known by this name. The word is also used to refer to students and graduates of the same School.

APPENDIX 2

LIST OF INTERVIEWS

The evaluation team had at least one interview with each of the following people. Some of the interviews were done with groups of four to five people, but the majority were carried out individually.

Position:	Name:
Director of the School	Keith Andrews
Dean of the School	Mario Contreras
Head, Agronomy Dept.	Juan Carlos Rosas
Head, Horticulture Dept.	Alfredo Montes
Head, Animal Husbandry Dept.	Miguel Vélez
Head, Plant Protection Dept.	Alfredo Rueda
Head, Agricultural Economics Dept.	Jorge Moya
Head, Natural Resources Dept.	Jay Hughes
Head, Planning and Development	Eduardo Aguilar
Professor	Margoth de Andrews
Professor	Isabel Pérez
Professor	Aurelio Revilla
Professor	Marcos Esnaola
Professor	Mayra Falck
Professor	Héctor Murcia
Professor	Marcelo Espinosa
Professor	Rodolfo Cojulún
Professor	Jeffrey Bentley
Head of EAP-RFA Project	Alonso Moreno
Director, RDP	Raúl Zelaya
Sub-director, RDP	Ernesto Palacios
Head, Communication Section, RDP	Jaime Rojas
Supervisor of extensionists, RDP	Marcos Granadino
Most of the RDP's extensionists	
The RDP's promoters	
Head, CDA	Marcos Rojas
Training Supervisor, RDP	Dennys de Moreno
Project Assistant, CDA	Luis Gamero
5 Students, first year	
5 Students, second year	
5 Students, third year	
5 Students, fourth year and in the RDP	
5 Students, fourth year and not in the RDP	

National Director, World Neighbors	Rafael Díaz Donaire
Extensionist, World Neighbors, Cantarranas	
Extensionistas, RR. NN., Lizapa office	
Extensionist, Ministry of Health, Guinope office	
Director, CIDICCO	Milton Flores
Director, ACORDE	Elías Sánchez
Director, school in San Francisco	
Teachers, school in San Francisco	
Extensionist, Foster Parents Plan of Honduras, Villa de San Francisco	Mario Colindres
Supervisor, Demonstration farm of the RDP	
Women's group, Guinope	
Women's group in a village of Morocelí	
Members, October Third Cooperative	
Members, Morocelí Cooperative	
Farmers, Montaña de Azacualpa	
Small-scale entrepreneur, village of Tatumbula	Hermelinda Zelaya
Farmers, villages of Tatumbula	
Farmers, Lizapa	Nila de Barahona Cristóbal Barahona Mario Barahona Jorge Durón
Farmers, Casitas	
Farmers, Galeras	
Farmers, Pacayas	Emilio Espinal Elías Zelaya Nila de Zelaya
Farmer, Silisgualagua	
Farmers, Guinope	

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