1997

An approach to providing professional development with an environmental education component to agriculture teachers in Costa Rica

Lynne Wood Brookes
Iowa State University

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An approach to providing professional development with an environmental education component to agriculture teachers in Costa Rica

by

Lynne Wood Brookes

A dissertation submitted to the graduate faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department: Agricultural Education and Studies

Major: Agricultural Education

Major Professors: Dr. Harold R. Crawford & Dr. David L. Williams

Iowa State University

Ames, Iowa

1997

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This is to certify that the Doctoral dissertation of
Lynne Wood Brookes
has met the dissertation requirements of Iowa State University

Signature was redacted for privacy.
Co-Major Professor

Signature was redacted for privacy.
Co-Major Professor

Signature was redacted for privacy.
For the Major Department

Signature was redacted for privacy.
For the Graduate College
DEDICATION

WITH LOVE, APPRECIATION, AND JOY

TO

JEANNETTE HEISLER WOOD ASHFORD

WITH PROFOUND THANKS

TO

CARLOS CALVO P., MARGARITA MESEGUER Q., HAROLD R. CRAWFORD
DAVID L. WILLIAMS AND DERRICK P. GRIMMER
FOR THEIR PARTNERSHIP, SUPPORT, AND ENCOURAGEMENT

TO

UCRSA, CICET, MEP, AND WWF
INSTITUTIONS CONSISTING OF INDIVIDUALS WHO CAN ENABLE

Y

CON GRAN RESPETO Y CARIÑO

A LOS PROFESORES AGROPECUARIOS

DE LOS COLEGIOS TECNICOS PROFESIONALES DE COSTA RICA
COMPANEROS:

Es necesario hacer conciencia general ante la realidad del grave deterioro que ha venido sufriendo nuestro medio ambiente.

Como educadores tenemos la obligación moral de inculcar en nuestros alumnos . . . un cambio de actitud hacia la necesidad de ser más responsables ante nuestro medio ambiente.

Entonces es necesario reflexionar seriamente al respecto, como educadores, como padres de familia y como miembros de la comunidad. No podemos . . . pasar por alto esta problemática que nos afecta a todos, seres vivos animales y vegetales que estamos en este mundo formando una cadena interdependiente que no debe romperse por falta de conciencia y de respeto.

Prof. Oscar Herrera
Colegio Tecnico Profesional
Valle de Estrella
I TALLER DE ACTUALIZACION 1994

COLLEAGUES:

We need to become aware of the reality of the serious damage that our environment has been suffering.

As teachers, we have the moral obligation to instill in our students . . . a change of attitude toward the necessity of being more responsible toward our environment.

We must think seriously about this, as teachers, as heads of household and as members of the community. We cannot . . . ignore this problem that affects us all, living creatures, animal and vegetable, that are in this world forming an interdependent chain, that must not be broken for a lack of conscience and respect.

Prof. Oscar Herrera
Professional Technical School
Valle de la Estrella
PROFESSIONAL DEVELOPMENT WORKSHOP I 1994
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CHAPTER I
INTRODUCTION

Iowa State University (ISU) and the University of Costa Rica (UCR) have enjoyed a collaborative relationship over a number of years culminating in the establishment of the International Center for Science, Education and Technology (CICET) in March 1991. The purpose of this center is to conduct educational programs through credit and non-credit instruction, to expand knowledge through research, and to extend educational opportunities in agriculture and related areas (CICET, 1995, p. 1). CICET is located at the University of Costa Rica, San Pedro (main) campus (UCRSP), with an office at the Iowa State University campus where the two co-coordinators and their staffs have facilitated numerous collaborative activities over the last five years.

A University Development Linkage Program (UDLP) supported through a grant in 1992 from the United States Agency for International Development (USAID) enabled Iowa State University, the University of Costa Rica, and Prairie View A&M University to initiate a series of development and exchange activities (CICET, p. 5; University Development Linkage Program, n.d.). This research is an outgrowth of sustained international collaboration among the three universities.
The researcher, a full-time ISU International Agriculture Programs staff member at the time of the study, had some experience with education in Latin America. She was a student in Guadalajara, México, had served nearly three years in Perú as a Peace Corps university biology professor and teacher trainer, and had managed a large five-year long Argentine agricultural fellowship project for Winrock International. She came to ISU in late 1990 to become the Midwest Regional Director of a U.S. Agency for International Development (USAID) international fellowship program for training agriculturalists. There she also helped to develop and then managed several education projects including a 12-month program for Ecuadorian agriculture teachers and a 9-month environmental education program for Bolivian professionals.

The researcher first went to Costa Rica in March 1991 to assist with activities accompanying the inauguration of the CICET center at UCRSP. In January 1992 she returned to evaluate a recently completed 12-month USAID environmental education program for 22 teachers and to develop and provide them with a one week follow-on training activity. Their program was part of a larger regional five-year plan aimed at the restoration and management of the Río Segundo watershed north of San José. Seeds for this study were planted when in response to a faxed request for a map to visit the project watershed area and "to perhaps meet with one of the teachers" prior to the program, the researcher was met on arrival by a
university bus filled with 18 of the 22 teachers and the project co-coordinator, MSc. M. Juana Coto, a knowledgeable, dedicated professor at the National Autonomous University (UNA). Each teacher was volunteering precious weekend time to provide this visitor with a thorough day-long introduction to their watershed. This instructive on-site review of the great challenges they faced, the discussions with teachers wanting to further develop skills to actively address these challenges in their communities, and the ensuing week’s intensive follow-on program all helped form the researcher’s direction.

In March 1992 the researcher participated in the second annual CICET seminar and study-tour by organizing a Río Segundo Project teacher presentation and assisting with the study tour. Building on this foundation, she was provided the opportunity in June 1993 to work with faculty at the University of Costa Rica’s Atlantic Regional Center (UCRSA) in Turrialba. UCRSA was exploring the possible development of a new agriculture education and extension degree program and she was asked to assist with the design of a national needs assessment. This was the beginning of a long, productive, and thoroughly enjoyable collaborative relationship--one result of which is this study.

**Origins of the Study**

A core group of faculty with strong administrative support at the University of Costa Rica’s Atlantic Regional
Center (UCRSA) believed that there was need for a new university degree program at their campus in agricultural education and extension. A Comisión (Commission) consisting of these and other UCR professors and administrators had been formed with the approval of the UCR Rector and the Dean of the College of Agronomy to explore development of such a new program (Universidad de Costa Rica, Sede del Atlántico, 1993). Members of the Commission had attended the annual CICET seminars in 1991, 1992, and 1993. In 1993 members attended two CICET contracts and grants workshops and in mid-1993 presented a proposal titled (in English) "Creation of a Curriculum for Agricultural Education and Extension: A Solution to the Problem of Agricultural Knowledge Transfer" (de Baca, n.d.; Universidad de Costa Rica, Sede del Atlántico, 1993).

This study stemmed directly from the researcher's initial work in June 1993 with Ing. (now M.Sc.) Carlos Calvo P., UCRSA professor and Commission member, M.Sc. Margarita Meseguer Q., and other UCR faculty and Commission members on a needs assessment for the potential program at UCR's Atlantic Region campus in Turrialba.

In July 1993, the collaborative work begun in Turrialba was continued when Carlos Calvo and M.Sc. David Hine A., another UCR faculty and Commission member, traveled to Ames, Iowa under the auspices of UDLP. The purpose of the intensive 10-day visit to ISU was to study program models, develop
curriculum, gather educational materials, and identify faculty and resources to assist in development and later implementation of the newly proposed agricultural program. The visit itinerary was organized by the researcher to provide as many appropriate contacts and experiences as possible to allow for a more solid basis for program planning. Meetings had been arranged with selected faculty, staff, and administrators in the Colleges of Agriculture and Education and with Agricultural Extension faculty and staff. Visits were also made to county extension offices, a community college involved in agricultural outreach, libraries, and bookstores. With input from a variety of sources and after thorough exploration and clarification of program goals, objectives, and implementation considerations, a preliminary plan for the development of a new degree program aimed at training agricultural extensionists and agriculture teachers was completed. An extensive chronogram of steps and activities to be undertaken was developed and is summarized in Table 1. The initial plan was for the development of one new agricultural degree program at UCRSA structured in the second year to be able to prepare either agricultural extensionists or to train high school agriculture teachers depending on the branch of studies selected. In addition it was envisioned that this program might provide some agricultural extension and education outreach component ("social action").
Table 1. Summary of July 1993 chronogram developed by UCRSA Professors Calvo & Hine (at ISU/UDLP) of steps and activities to be undertaken in the development of a new agriculture extension & education degree program and related outreach to agriculture extensionists and educators

<table>
<thead>
<tr>
<th>STEP AND ENTITY INVOLVED</th>
<th>1993 - YEAR/MONTH - 1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop professional profiles</td>
<td></td>
</tr>
<tr>
<td>a. of ag. extensionists</td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td>b. of ag. teachers</td>
<td>XXXXXX</td>
</tr>
<tr>
<td>2. Conduct needs assessment</td>
<td></td>
</tr>
<tr>
<td>a. for ag. extensionists</td>
<td>X</td>
</tr>
<tr>
<td>b. for ag. teachers</td>
<td>X</td>
</tr>
<tr>
<td>3. Develop curriculum</td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td>4. Submit plan to CONARE</td>
<td>XX</td>
</tr>
<tr>
<td>5. Develop UCR staff</td>
<td>XXXXXXX--&gt;1997</td>
</tr>
<tr>
<td>6. Strengthen info. resources</td>
<td>XXXXXXX--&gt;1996</td>
</tr>
<tr>
<td>7. Determine needs for UCRSA outreach (social action)</td>
<td></td>
</tr>
<tr>
<td>a. for ag. extensionists</td>
<td>X</td>
</tr>
<tr>
<td>b. for ag. teachers</td>
<td>X</td>
</tr>
<tr>
<td>8. Develop internal policy</td>
<td></td>
</tr>
<tr>
<td>a. UCRSA</td>
<td>XXXXXXX</td>
</tr>
<tr>
<td>b. UCR Fac. de Agronomia</td>
<td>XXXXXXX</td>
</tr>
<tr>
<td>c. University Council</td>
<td>XXXXXXXXXXX</td>
</tr>
<tr>
<td>9. Develop external policy</td>
<td></td>
</tr>
<tr>
<td>a. Min. of Pub. Ed. (MEP)</td>
<td>XX</td>
</tr>
<tr>
<td>b. MEP-IDB agreement</td>
<td>XX</td>
</tr>
<tr>
<td>c. CIPET-(teacher training section within MEP)</td>
<td>X</td>
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<tr>
<td>d. Ministry of Agriculture</td>
<td>XX</td>
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<tr>
<td>10. Search for funding</td>
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After the two UCR professors returned to Costa Rica, the national needs assessments (Table 1, No. 1) involving agriculturalists, agri-businesses, agriculture teachers, former students, and agriculture education specialists were completed (Velázquez, 1993). Once the results were evaluated it became clear that there were two distinct needs to be addressed. One was the need for more well-trained agricultural extensionists, as had been expected. The other was an urgent need for more high quality professional development opportunities to be provided for the over 400 currently employed agriculture teachers at Costa Rica’s 51 (The literature refers to the number of agricultural technical high schools as being 50 [Velázquez, 1993], 51 [Crawford & González, 1978], and 52 [Velázquez, 1993]) "Professional Technical High Schools" (CTPs)--and not the development of a new university agriculture teacher degree program emphasis as was originally thought.

By the end of 1993, it was decided that UCRSA would continue designing a new degree program to prepare new agricultural extensionists (UCRSA developed a comprehensive plan for a new degree program in agricultural extension and submitted it in 1993 to the National Council of Rectors [CONARE] for approval or denial) and, with approval from the Ministry of Public Education (MEP), to provide in-service professional development programs for CTP agriculture teachers--something never done before by the university (Appendix A).
This study began in late 1993 when UCRSA Commission members and the researcher began exploring ways that the UCRSA could provide in-service professional development opportunities for CTP agriculture teachers. The fact that UCRSA wanted to provide this outreach and that it was a novel undertaking for the individuals and institutions involved, including UCR and the Ministry of Public Education, made for a unique challenge. The planning would have to take place among colleagues in two different countries who, with only intermittent personal contact, would need to rely largely on electronic communications to plan, organize, deal with uncertainties and inevitable changes, encourage each other, and build a successful program. The language of the study was Spanish and the cultural setting, Costa Rican.

The background of events influencing this study and the approach used to develop and implement the program model can be found in Table 2. In addition to serving as a point of reference for this study, this chronology of events suggests the importance of establishing a long-term presence and supporting meaningful interaction for the successful accomplishment of international activities.

Rationale for the Study

The need for appropriate professional development opportunities for Costa Rican technical high school agriculture teachers' in-service has been well recognized and is discussed in Chapter II. "CIPET," the Ministry of Education
Table 2. Background for the study and events leading to development of the study approach to providing professional development opportunities with an environmental education component for CTP agriculture teachers

<table>
<thead>
<tr>
<th>Date</th>
<th>Institution(s) Involved</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
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<tr>
<td>1978</td>
<td>ISU, UCR</td>
<td>A review and needs assessment was carried out through collaboration between ISU and UCR to ascertain if there were ways agriculture could be improved through improvements in the (national) agriculture education program. Result: Two basic needs were identified: (a) Teacher preparation and in-service training, and (b) Preparation of agricultural extensionists. A proposal was developed entitled, &quot;A Comprehensive Program for the Development of Agricultural Education in Costa Rica 1980-1984.&quot;</td>
<td>Crawford &amp; González, 1978</td>
</tr>
<tr>
<td>10/88</td>
<td>MIRENEM, WWF, IUCN, UCR, and Others</td>
<td>First Conference on Conservation Strategy for the Sustainable Development of Costa Rica (ECODES) and ECODES established within the Ministry of Natural Resources, Energy and Mines (MIRENEM) of Costa Rica. Carlos Quesada, Director. Supported and inaugurated by President, Dr. Oscar Arias Sánchez.</td>
<td>Quesada &amp; Solís, 1989</td>
</tr>
</tbody>
</table>

¹World Wildlife Fund.

²International Union for the Conservation of Nature and Natural Resources.
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<th>Date</th>
<th>Institution(s) Involved</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/90</td>
<td>MIRENEM WWF-US IUCN</td>
<td>Publication of ECODES, the &quot;Conservation Strategy for the Sustainable Development of Costa Rica,&quot; a guide &quot;for reversing the accelerated deterioration of the nation's natural resources and as a process for formulating a new vision of development&quot; (p. 5).</td>
<td>Quesada, 1990</td>
</tr>
</tbody>
</table>
| 3/91 | CICET ISU UCR UCRSA    | - Inauguration of CICET and first annual seminar and study tour, San José, Costa Rica.  
- Dr. David Williams, head of Agricultural Education and Studies, ISU, visits UCRSA and reports that "This campus is very interested in starting an Agriculture Education Curriculum to prepare agriculture teachers, extension workers, and educational personnel for "opportunities for natural resources and sustainable agriculture education initiatives."
- Interacted with MEP personnel "to learn if need to improve ... agricultural education in secondary schools of Costa Rica."
- Researcher spends 10 days in Costa Rica assisting with seminar and study tour. | deBaca, n.d. Williams, 1991 |
<table>
<thead>
<tr>
<th>Date</th>
<th>Institution(s)</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
</tr>
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<tr>
<td>1/92</td>
<td>USAID¹</td>
<td>Researcher designed and implemented follow-on training for teachers in the Río Segundo watershed (Heredia/Alajuela, Costa Rica) and evaluated the 12-month environmental education program in the U.S. Researcher became more familiar with Costa Rican teachers, educational system, and environmental issues was further enhanced. Researcher makes valuable contacts at UNA.</td>
<td>Brookes, 1992</td>
</tr>
<tr>
<td>3/92</td>
<td>CICET, UDLP, ISU, UCR, UNA²</td>
<td>-Second annual CICET seminar and study tour, San José, Costa Rica -Researcher involved Río Segundo teachers in a seminar presentation regarding their projects, served as discussion leader and helped facilitate study tour for ISU faculty and staff. -Dr. David Williams provided observations on enhancing rural communities and eco-restoration in Costa Rica and seminal suggestions for the UDLP plan focusing on education and agricultural education in trip report.</td>
<td>deBaca, n.d. (Appendix A)</td>
</tr>
<tr>
<td>8/92</td>
<td>MEP</td>
<td>MEP submits proposal for a new &quot;Plan of Study for Technical Education&quot; to the Costa Rican High Council on Education. Emphasis on curricular diversification at the CTPAs, including new courses in ecology, agrocology, environmental studies, eco-tourism, sustainable agriculture, etc.</td>
<td>Ministerio de Educación Pública, 1992</td>
</tr>
</tbody>
</table>

¹USAID: U.S. Agency for International Development.

²UNA: National Autonomous University (Heredia).
<table>
<thead>
<tr>
<th>Date</th>
<th>Institution(s)</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/92</td>
<td>UDLP</td>
<td>UDLP priorities established. UCR Dean Adolfo Soto and the UCR council approved development of an agriculture education and extension program at UCRSA.</td>
<td>deBaca, n.d.</td>
</tr>
<tr>
<td></td>
<td>ISU</td>
<td>Dr. Harold Crawford, Associate Dean and Director, International Agriculture Programs, ISU, visited UCRSA to discuss agriculture education and extension program.</td>
<td>deBaca, n.d.</td>
</tr>
<tr>
<td></td>
<td>UCR</td>
<td>-Third annual CICET Conference and study tour. -UCRSA Director Orlando Salazar and Subdirector Margarita Meseguer discuss new Ag. Ed. &amp; Ext. program possibilities. -UCRSA faculty attend Part I of the Contracts and Grants Workshop presented by H. Crawford and M. deBaca.</td>
<td>deBaca, n.d.</td>
</tr>
<tr>
<td>3/93</td>
<td>CICET</td>
<td>Researcher traveled to UCRSA to help design a needs assessment survey to compliment proposal for new Ag ED &amp; Ext. degree program and to help refine proposal budget. (First collaborative effort, researcher/UCRSA)</td>
<td>Brookes, 1993</td>
</tr>
<tr>
<td>5/93</td>
<td>CICET</td>
<td>-UCRSA (UDLP team) professors, Carlos Calvo and David Hine come to ISU for 10 days to work with researcher (host) and others at ISU on the development of a new ag. ext. program and teacher training program. -Chronology developed as a framework for proceeding. -The need for CTP teacher in-service training was discussed. -Sustainable agriculture and environmental education were identified as current topics of interest in Costa Rica and newly mandated by MEP at the CTPs.</td>
<td>deBaca, n.d.</td>
</tr>
<tr>
<td>6/93</td>
<td>UDLP</td>
<td></td>
<td>Figure 6</td>
</tr>
<tr>
<td></td>
<td>ISU</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UCRSA</td>
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<td></td>
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</tbody>
</table>
Education branch primarily responsible for providing CTP teachers with professional development opportunities, has traditionally provided most of the in-service training. However, a limited budget hampers CIPET's ability to respond to the accelerating needs and expectations of the teachers. In late 1993, providing opportunities for CTP teachers to "update" their knowledge and skills became even more urgent with the adoption by the National Council of Higher Education of a new curriculum developed by MEP for Costa Rica's technical high schools. Not only were there changes in instructional emphasis, methodology, and basic curricula at the CTPs, but it also required new courses to be taught in such areas as sustainable agriculture, environmental education, computer science, ecotourism, and other areas in which most CTP teachers had not received training (Ministerio de Educación Pública, 1992; Universidad de Costa Rica, Sede del Atlántico, 1994).

In 1993, when teachers were surveyed in a UCR sponsored national needs assessment, they were asked to list "five areas in which [each] would be interested in receiving training." The survey results seemed to clearly reflect educators' concerns about the newly adopted CTP curriculum and, more than likely, the increasing national concern about environmental protection in Costa Rica--which in turn had been a catalyst for some of the new curricula. Significantly, 48% of the respondents listed one or more natural resources management and/or environmental protection oriented topics as being one
of the five areas. No other subject matter area for training was as highly requested. When the agriculture education specialists in the survey were asked about subject matter importance, their responses centered on agro-environmental topics exclusively (Velázquez, 1993).

Costa Rica is an agricultural country depending largely on its natural resources for economic survival. While Costa Rica is moving towards development of a broader economic base with value-added enterprises and new (primarily) light industrial enterprises, agricultural exports still provide the large part of Costa Rica’s economic base, accounting for 70% of exports overall in 1988. Bananas, coffee, and to a lesser extent beef and sugar, are the major export products. The agricultural sector accounted for over 28% of the employment in Costa Rica (Quesada, 1990). Pressure on the natural resource base to maintain or increase production has resulted in a parallel degradation of the environment readily apparent throughout much of the country.

As deforestation increases from clearing land for crops, grazing, timber, roads and other purposes, watersheds are destroyed with resultant loss of biological diversity and damage to human communities. Continued destruction will cause escalating local and national revenue loss through having to deal with the ills brought about by water contamination, flooding, inadequate water supply, loss of arable land, loss of present or potential income from reduced scientific research (such as from biologically-derived pharmaceuticals)
and from eco-tourism interest. Improving environmental understanding and encouraging sustainable agricultural practices that will allow satisfactory standards of living while maintaining the nation's resources and a healthy ecology is of vital importance to Costa Ricans (Quesada, 1990; Quesada & Solís, 1989; World Resources Institute, 1992). Learning how to protect the natural environment is not only sound ecologically, but economically.

Growing environmental awareness and concern was reflected in the new MEP curriculum for the agricultural CTPs, the Commission's needs assessment results, and in the UCRSA professional development program content. UCRSA commission members, administrators, and key faculty were intensely interested in developing a means of providing professional development including an environmental education component to CTP agriculture teachers presently in service (Calvo, 1993). This study is based on the development, implementation, and evaluation of the UCRSA professional development program designed to meet these needs.

Statement of the Problem

The problem addressed in this study was to design an outreach program that would meet various stakeholders' needs that was effective, feasible, and repeatable. Beginning in late 1993, a UCRSA faculty team consisting of the Commission members, the UCRSA Director, and selected staff worked with the researcher under the auspices of UPLP and CICET, with
approval from MEP, to develop an outreach approach for UCRSA to provide agriculture teachers with professional development opportunities. While CTPs are located throughout Costa Rica, it was decided to concentrate first on providing opportunities for teachers at the seven CTPs located in the Atlantic region where UCRSA is also located. The program envisioned would provide the participants with both technical and pedagogic subject matter and would commence in 1994.

**Purpose of the Study**

The purpose of this study was to develop, implement, and evaluate an approach for UCRSA to provide CTP agriculture teachers with relevant professional development opportunities and to encourage them to both apply and share the information, activities, and materials obtained through participation when they returned to their technical high schools (CTPs). The major themes to be addressed were sustainable agriculture, environmental protection, and pedagogy.

**Research Questions**

The research was designed to answer the following questions:

**Research Question 1**

How can an approach to provide professional development for CTP agriculture teachers including pedagogy, sustainable agriculture, and an environmental education component be developed and implemented through UCRSA?
Research Question 2

Would the professional development approach developed and implemented meet the expectations of the participating CTP teachers and other stakeholders?

Research Question 3

What impact did the professional development approach have on the CTP teacher participants?

Organization of the Study

Organization of this developmental study involved integrating the needs, interests, resources, and participation of a number of individuals and institutions in two different countries. The majority of activity took place in Turrialba in the province of Cartago, Costa Rica. Spanish was the primary language of communication and electronic communications played a significant role in this undertaking. The study took place over a two-year period from mid 1993 to fall 1995. Tables 3a and 3b present the setting, sequencing, and multiple facets of this study. Table 3a shows key events in 1992 directly leading to the study and development of the approach for UCRSA to provide professional development programs for CTP teachers. In 1993 the researcher worked at UCRSA and the following month Professors Calvo and Hine worked at ISU laying the groundwork for the study and for development of the approach. The study was initiated towards the end of 1993 when the need for CTP
Table 3a. Key events leading up to the study and study commencement.

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<tbody>
<tr>
<td>UCRSA wishes to serve agricultural community through providing a new agricultural education and extension program</td>
<td>Approach developed for UCRSA to meet CTP teacher need for prof. dev. following &quot;rational model&quot;</td>
<td></td>
</tr>
<tr>
<td>UCR &quot;Commission&quot; established to assess need for &amp; development of a new agricultural extension and education degree program</td>
<td>Commission conducts needs assessment nationally</td>
<td>UCRSA/CICET: Collaborative development of workshop as a means for UCRSA to provide in-service teachers professional development</td>
</tr>
<tr>
<td>Need established for provision of more professional development opportunities for CTP teachers</td>
<td></td>
<td>MEP approval sought for new approach to meeting CTP teacher training needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Funding sought from: Ford Foundation WWF MEP UDLP/CICET</td>
</tr>
<tr>
<td>Researcher works at UCRSA (6/93)</td>
<td>Researcher works at UCRSA (3/94)</td>
<td></td>
</tr>
<tr>
<td>Profs. Calvo and Hine work at ISU (7/93)</td>
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Table 3b. Implementation of the study's workshops, key events, and organization of research activity.

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<tbody>
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<td></td>
<td>8/8-12</td>
<td>2</td>
<td>6/1-3</td>
</tr>
</tbody>
</table>

- **1st UCRSA Workshop Conducted**: (5 days)
- **Planning for 1995 Workshop**
- **2nd UCRA Workshop Conducted**: (3 days)

**4 Questionnaires Administered:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Pretest</th>
<th>Posttest</th>
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<tbody>
<tr>
<td>1994</td>
<td>Q-1</td>
<td>Q-2</td>
<td>Q-3</td>
<td>Q-4</td>
</tr>
</tbody>
</table>

**Prior to Workshop**: 7-10 days
**End of Workshop**: 2 mo.
**Posttest**

**MEP approval obtained for 1st workshop**

**Funding secured from:**
- WWF
- MEP
- UPLP/CICET

**Researcher works at UCRSA (8/94)**

**1995 MEP approval sought**

**Funding for 2nd workshop sought**
- WWF
- MEP
- UPLP/CICET

**Researcher & Dr. Pease work at UCRSA (6/95)**

**Researcher & Dr. Pease work at ISU (2/95)**
teachers to be provided in-service training was clearly established by the results of the Commission's needs assessment. Initiation of the program planning phase is shown under "1993/1994." MEP input and approval of plans is sought and a simultaneous search for partners to help fund the program began. Table 3b shows the sequence of implementation and research data collection activities in 1994, followed by planning, implementation, and research data collection in 1995.

To summarize, the study originated with UCRSA's desire to build on its strengths and provide programs and service to the agricultural community and country. Study activities stemmed directly from the researcher's work with Carlos Calvo and other UCRSA faculty in Turrialba in June 1993 and their joint work in Ames in July 1993. When the Commission's national needs assessment results were evaluated in late 1993 (Velázquez, 1993), UCRSA began seeking an approach to provide professional development for CTP agriculture teachers in-service (Appendix A).

Data collection for this study was originally planned to take place from late 1993 to late 1994, the year that UCRSA first provided CTP teachers with an in-service program, a five-day workshop. However, because of the success of the first workshop, a second workshop was requested, approved, and planned for 1995 (Appendix A). The researcher collected data on this additional workshop comparable to that on the first.
In the four chapters that follow, relevant literature is reviewed (Chapter II), methods and procedures are described (Chapter III), findings are discussed (Chapter IV), and a summary with implications and recommendations is presented (Chapter V). Four appendices follow: (A) Development of the Approach and In-service Programs containing reports and correspondence supporting needs, goals, strategy, and program development for 1994 and 1995; (B) Professional Development Workshop Agendas with related methodology documentation for 1994 & 1995 in English and in Spanish; (C) Questionnaires for 1994 & 1995 in English and in Spanish; and (D) Approach Follow-up in 1994 & 1995 containing program evaluation, impact and follow-on reports and correspondence. A bibliography is included in the final section. Most translations were done by the author.

Definition of Terms and Acronyms

The following terms and acronyms are used in various sections of the text:

**Agricultural Education** - Broad instructional and program area concerned primarily with technical/vocational agriculture. Curriculum structured to provide an understanding of agriculture and often leading to careers in this field.

**Agropecuarios (Colegios Técnicos Profesionales Agropecuarios)** - Former designation of the 51 (50-52) secondary schools established in the seventies with curricular
emphasis on technical agricultural programs. (See "Professional Technical High Schools").

Agro-environmental - Relationship and/or interaction between agriculture and the natural environment.

ALEAS - Asociación Latinoamericana de Educación Agrícola Superior. Latin American Association for Higher Education.

Appropriate Agriculture - Agriculture practiced with an understanding of and within the limits of local environmental characteristics and conditions (see sustainable agriculture).


C.I.P.E.T. (also CIPET) - Acronym for the Centro de Investigación y Perfeccionamiento para la Educación Técnica, the Research and Preparation Center for Technical Education. This institution of higher education, a decentralized branch of the Ministry of Public Education, is responsible for preparing CTP teachers and providing in-service professional development. (Located in Alajuela.)

Colegios Agropecuarios - See Agropecuarios.

CONARE - (Consejo Nacional de Rectores) National Council of Rectors (UCR)

CTP/CTPs (Colegios Técnicos Profesionales, Agropecuarios (Colegios Agropecuarios) - See Professional Technical High Schools.

ECODES - (Estrategia de Conservación para el Desarrollo Sostenible de Costa Rica) Conservation Strategy for the
Sustainable Development of Costa Rica. The name both of a publication (Quesada, 1990) and a department of the Ministry of Natural Resources, Energy, and Mines (MIRENEM).

**Environmental Education** - Education about environmental interactions and issues focused on developing environmentally responsible knowledge, attitudes, and behavior (Hungerford & Volk, 1990).

**Extractive Agriculture** - Agriculture practiced to maximize immediate benefits while destroying the resource base.

**FAQ** - Food and Agriculture Organization.

**In-service Professional Development** - Organized learning experience providing technical opportunities to strengthen knowledge, attitudes, and skills and/or pedagogy of practicing teachers.

**ISU** - Iowa State University, Ames.

**LA&C** - Latin America and the Caribbean.

**Pedagogy** - "The profession or function of a teacher; teaching. 2. the art or science of teaching; esp., instruction in teaching methods." (Guralnik, 1980 p. 1046)

**Professional Technical High Schools** - *(Colegios Técnicos Profesionales)*: Refers to the 51 secondary schools (high schools) established in Costa Rica to provide youth with a diverse technical training programs in the agricultural, industrial, and service areas. Until 1993, these secondary schools were commonly referred to as "Agricultural" High Schools *(Colegios Agropecuarios)* reflecting the former
emphasis on agricultural curriculum (Crawford & Gonzalez R., 1984; Ministerio de Educacion Publica, 1992.)

**Sustainable Agriculture** - Agriculture contributing to sustainable rural development defined by Hudgens as "intended to increase food supply and employment opportunities and improve standards of living while maintaining the quality of the environment" (Hudgens, 1992, p. 30).

**Technical High Schools** - see Professional Technical High Schools.

**UCR** - University of Costa Rica with the main campus near San José and four other regional centers (sedes regionales).

**UCRSA** - University of Costa Rica, (Sede del Atlántico) Atlantic Regional Center (campus) in Turrialba.

**UCR SP** - University of Costa Rica, San Pedro (Main) campus near San José.

**USAID** - United States Agency for International Development.

**WWF** - World Wildlife Fund
CHAPTER II
LITERATURE REVIEW

The purpose of this study was to develop an approach to provide professional development opportunities for Costa Rican high school agriculture teachers. As agriculture is performed within the environmental matrix of a country, there is an intimate relationship between the two. As Costa Rica grapples with growing environmental destruction and its historical dependence on agriculture, the different aspects of environmental education have assumed national prominence. This relatively new national concern has been manifested in the revised "Plan of Studies" for the nation's 51 Professional Technical Secondary Schools prepared by the Ministry of Public Education (1992).

This study was designed to develop an approach that would meet two needs of CTP agriculture teachers: professional development opportunities, and components of environmental education.

The literature review concentrated on (1) environmental concerns and agriculture in Costa Rica; (2) agriculture education in Costa Rican secondary schools; (3) the need for CTP teacher professional development in Costa Rica; (4) social reconstruction philosophy; and (5) the rational model.
Environmental Concerns and Agriculture in Costa Rica

Costa Rica has earned the reputation of being one of the most environmentally concerned countries in the western hemisphere and is referred to as a world leader in preservation. The land of Costa Rica arose from the sea bed millions of years ago due to tectonic plate movements and volcanic activity. Positioned as it is between the North American and South American continents and between the Pacific Ocean and the Caribbean it is a bridge connecting, supporting, and nurturing a great diversity of neotropical flora and fauna. Costa Rica is renowned for this treasure of biological diversity and the stunning beauty of its countryside. Together, these two factors annually attract great scientific and tourism interest and earn increasing amounts of income locally and nationally.

Simultaneously, environmental degradation continues at an alarming rate. From the address by Dr. Oscar Arias S., former president of Costa Rica and Nobel Laureate, to the 1988 Strategic Congress of Conservation for the Sustainable Development of Costa Rica (Quesada, 1990, p. 21), to school kids putting up signs in Heredia, there are clear expressions of concern over the degradation of the environment. Deforestation has progressed at an alarming rate causing widespread watershed deterioration. (See Figure 1.)

Agriculture is the most important sector of the Costa Rican economy due to the contribution it makes to the gross
Figure 1. Evolution of the deforestation in Costa Rica between the years 1940-1987 (Quesada, 1990, p. 30).

Historically, Costa Rica is an agricultural country, but it is presently in transition towards development of a broader economic base with value-added enterprises and new (primarily) light industrial enterprises growing in importance. However, agricultural export still provides Costa Rica's economic base, accounting for 70% of exports overall in 1988. Bananas, coffee, and to a lesser extent beef and sugar, are the major export products (Quesada, 1990, pp. 23 & 59). In 1990 it was reported that the agricultural sector accounted for more than 20% of the national gross product and generated more than 28% of the employment (Quesada, 1990). Pressure on the natural resource base to maintain and ever increase production has
resulted in a parallel degradation of the environment readily apparent throughout much of the country.

Primary reasons for increasing pressure on the resource base are dramatic population growth and the simultaneous concentration of land into large holdings (more than 100 hectares) and a growth in the number of small holdings (less than 5 hectares). In 1950, the number of inhabitants in Costa Rica was 850,000; in 1963, 1,330,000; in 1985, 2,642,000; and in 1990, 3,000,000. A population of 6,000,000 is projected by the year 2020. This rapid growth has primarily come about through the reduction in infant mortality over the last half century. While the population growth rate is going down (over 3.5% in 1950 to 2.5% in 1976, and presently around 2.8%) the geometric pattern of growth will continue to place tremendous, probably destructive, pressure on Costa Rica’s natural resources (Quesada, 1990).

**Agricultural Education in Costa Rican Secondary Schools**

Through national laws enacted in 1886 and 1957 and subsequent amendments, present-day Costa Ricans are provided public education that is mandatory, free, and assured to all without bias. Table 4 outlines events shaping Costa Rican
<table>
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<th>Date</th>
<th>Events</th>
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<tr>
<td>1886</td>
<td>The &quot;General Education Law&quot; (La Ley de la Educación Común) was enacted which established a major role for government at all educational levels.</td>
<td>Anderson, 1983</td>
</tr>
<tr>
<td>1949</td>
<td>Costa Rican Constitutional articles 77 and 78 provided for a pre-school to university system and mandatory &quot;basic general education&quot; free to all.</td>
<td>Anderson, 1983</td>
</tr>
<tr>
<td>1957</td>
<td>The &quot;Basic Education Law&quot; (La Ley Fundamental de Educación) replaced the General Education Law of 1886. This law states that primary education is mandatory and that the state will provide funding. It also assured equal opportunity.</td>
<td>Anderson, 1983</td>
</tr>
<tr>
<td>1960-1970</td>
<td>Initiation of agricultural education in Costa Rica. Programs were developed and personnel were selected.</td>
<td>Velázquez, 1993</td>
</tr>
<tr>
<td>1970-1974</td>
<td>51 agricultural high schools were established each with its own land (av. 48 ha.) and &quot;laboratory farm.&quot; Planning, equipment, and construction was undertaken by the MEP in conjunction with institutions of higher education and IICA.</td>
<td>Anderson, 1983, Crawford &amp; González, 1978</td>
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<td>1980-1990</td>
<td>The national agricultural education program enters a period of crisis. There is a rupture between the program philosophy at the agricultural high schools and development of the country. The rural zones and students expect more options than an agriculture program at the high schools. Student enrollment drops.</td>
<td>Anderson, 1983, Crawford &amp; González, 1978, Velázquez, 1993</td>
</tr>
<tr>
<td>Date</td>
<td>Events</td>
<td>Reference</td>
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<tr>
<td>1985-1991</td>
<td>Successive international (LA &amp; C) round tables, subregional seminars, and conferences were held by FAO and ALEAS to examine the profound changes in regional economies (brought about by severe macroeconomic and sectoral adjustments). Result: The urgent need to reorient agricultural programs to meet the needs of rural development, to prepare students for new sources of employment (as the role of the State as employer is sharply reduced), and to prepare agriculturalists to respond to the progressive deterioration of natural resources.</td>
<td>Oficina Regional de la América Latina y el Caribe, 1991</td>
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<tr>
<td>1990</td>
<td>Publication and dissemination of ECODES throughout Costa Rica (MIRENM).</td>
<td>Quesada, 1990</td>
</tr>
<tr>
<td>1992</td>
<td>Ministry of Public Education (MEP) revises and restructures the technical high school program with new goals and curriculum diversification. MEP proposed new three-pronged approach to the High Council of Education entitled, &quot;Plan of Studies for Technical Education.&quot; The plan called for a new focus on preparing technical high school students for entry into the agricultural, industrial, and service sectors of the national economy. A practical approach and community orientation were to be incorporated.</td>
<td>Ministerio de Educación Pública, 1992</td>
</tr>
<tr>
<td>1993</td>
<td>FAO document outlining urgent need for &quot;modernization&quot; of the agricultural sector through adoption of an agricultural development model that enables agriculturalists to act more independently, self-reliantly, and knowledgeably. Formation of professionals in the agricultural sciences stated as being &quot;absolutely indispensable.&quot; (p. 8)</td>
<td>Oficina Regional de la América Latina y el Caribe, 1993</td>
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Table 4 (Continued)

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<th>Date</th>
<th>Events</th>
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<tr>
<td>1993</td>
<td>New (1992) &quot;Plan of studies for technical education&quot; approved by the High Council of Education. Former agricultural high schools to be known as &quot;Professional Technical High Schools&quot; reflecting the diversification of the curriculum.</td>
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</table>

public education and development of the secondary technical agriculture schools and programs.

Education is widespread in Costa Rica with adult literacy having grown from 79% in 1950 to the high rate in 1984 of 94% (Europa Publications, 1991; Quesada, 1990). While this laudable literacy rate is presently the highest in the region, increasingly higher drop out and repetition rates are occurring as students progress from the elementary grades to secondary (Graham-Brown, 1991; Quesada, 1990; Wirth, 1993; World Bank, 1985). According to the 1984 census, of the population over 12 years of age: 7.3% had no formal education, 54.4% had attained a partial or complete elementary level education, 17.2% had attained a partial or complete secondary level education, and 7.9% had continued on to higher education. Since mid-1981, when the economic crisis due to external debt came to a head, government expenditure on public education in Costa Rica has declined with negative repercussions apparent throughout the system. National

Table 5 presents educational indicators before and after the 1980 debt crisis (Graham-Brown, 1991, p. 109, Table 8.2) indicating the economic difficulties presently confronting public education in Costa Rica.

Table 5. Costa Rica: educational indicators through the economic crisis period, 1975-88 (growth rate: 2.7%).

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<tr>
<td>Education expenditure</td>
<td>6.2</td>
<td>6.2</td>
<td>4.3</td>
<td>4.3</td>
<td>4.3</td>
<td>--</td>
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<tr>
<td>as a % of GDP</td>
<td></td>
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<td></td>
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<tr>
<td>Primary school</td>
<td>354.0</td>
<td>348.7</td>
<td>342.5</td>
<td>350.7</td>
<td>380.4</td>
<td>409.6</td>
</tr>
<tr>
<td>enrollments (000)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Secondary school</td>
<td>169.3</td>
<td>137.8</td>
<td>165.7</td>
<td>147.6</td>
<td>141.7</td>
<td>143.1</td>
</tr>
<tr>
<td>enrollments (000)</td>
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Literature review (ibid.) and researcher's personal observations in Costa Rica suggest that increasing enrollment and overcrowding due to rapid absolute population growth; poorly equipped and sometimes crumbling facilities; often undertrained teachers with low salaries, low prestige, and poor incentives; and the growing economic need for older children to work (especially boys) are attributes of and contributors to this worsening situation. The overall effect is one of frustration--for the students, the teachers, the administrators, and MEP--who either remember that the educational situation was better before and/or wish that it
could be better than it is now. Hope for improvement appears stronger than despair—but frustration is evident. As Costa Ricans well know, they can neither afford to be complacent about a past remarkably high level of public education nor currently "afford" to take many of the corrective measures needed to maintain their high level of literacy and other results of a functioning public education system.

The establishment of agricultural high schools came about in the 1970s when a system of technical high schools were established throughout Costa Rica (Anderson, 1983; Crawford & González, 1978; Velázquez, 1993). As can be seen in Table 4, by 1974, 51 Colegios Técnicos Profesionales Agropecuarios (CTPs), "technical agricultural high schools" had been initiated located throughout the country (Figure 2). Each had its own land for use as a "laboratory farm" averaging about 48 hectares. Each provided the students with a basic education and in addition a vocational technical focus on agriculture as part of a national plan to increase agricultural production nationally (ibid.). The establishment of these technical training schools did not happen in Costa Rica alone but were being advocated in the 1970s by such international entities as the World Bank, the Interamerican Development Bank, FAO, and others with the intention of boosting agricultural production (Food and Agriculture Organization of the United Nations, 1983; Graham-Brown, 1991; World Bank, 1985.
Figure 2. Total number of Technical Agricultural High Schools in Costa Rica indicated by region with the approximate number of agriculture teachers in each region shown in parentheses (González, 1983, p. 21; Velázquez, 1993).
By the end of the 70s and clearly in the 80s, the once "model" agriculture high schools and their curriculum were no longer meeting the needs of the young people and communities they were originally designed to serve (Graham-Brown, 1991; Velázquez, 1993; World Bank, 1985). The drop out rate was increasing yearly; the laboratory farms were falling into disrepair; and teachers were discouraged by growingly disinterested students, by aging facilities, low prestige, low salaries, and lack of opportunity to grow professionally (Anderson, 1983; Crawford & González, 1978).

The Costa Rican system of secondary agriculture schools was not alone in experiencing unrest in the area of agricultural education. From 1985 through 1991, a succession of LA&C international round tables and subregional seminars and conferences were held by the Food and Agriculture Organization (FAO) and the Latin American Higher Education Association (ALEAS) (Oficina Regional de la FAO para América Latina y el Caribe, 1991; 1993). These meetings were convened to examine the profound changes occurring in the region due to severe macroeconomic and structural adjustments, impacts on agricultural sector, and implications for agricultural education. Strong concern was expressed about the "progressive deterioration of the natural resources"; the need to bring technology into line with the concept of sustainable development (Oficina Regional de la FAO para América Latina y el Caribe, 1991, p. 10); and the need to overhaul
regional agricultural programs to deal with the changing realities. Secondary agriculture education programs throughout the region were as hard pressed dealing with these realities as was higher education.

The Need for CTP Teacher Professional Development in Costa Rica

During this period of flux and search for new directions, then Costa Rican President, Dr. Oscar Arias Sánchez, a leader in international relations and Nobel Peace Prize winner, inaugurated the 1st Costa Rican Sustainable Development Strategy Conference in 1988 and authorized the establishment of a Commission to develop a "Conservation Strategy for Sustainable Development in Costa Rica" (ECODES) (Quesada & Solís, 1989; Quesada, 1990). The following statement was taken from his ECODES inaugural address:

This project that I now present to you has a great pedagogical content. . . . Costa Rica of the 21st Century is already forming itself with the day to day actions we undertake. That Costa Rica will be [a] valuable inheritance as a result of our efforts together for a just and sustainable style of development; or it could be the sad evidence of our failure. (Quesada, 1990, p. I. Translation and emphasis researcher's)

In 1992, the Costa Rican Ministry of Public Education, cognizant of the great changes that were occurring, proposed a new curriculum for the technical high schools which was adopted in 1993 and implemented the next school year (1994).
The new curriculum would now offer three basic vocational area options: (1) technical agriculture; (2) industrial technology; and (3) preparation for the service sector. These three programs were designed to better meet the present day needs of young people and their communities reflecting changing expectations and employment opportunities in Costa Rica (Ministerio de Educación Pública, 1992).

The revised agriculture curriculum contained a number of new courses to be taught in response to concern in Costa Rica regarding mounting environmental problems related to both population growth and agricultural practices. A teacher training component was planned to prepare CTP staff for presenting the new curriculum, but this (costly) training was not generally provided to the teachers prior to implementation in 1994. The teachers began using the new curriculum without the preparation or resources needed for the most effective presentation of the new material.

The majority of the CTP agriculture teachers are trained in some aspect of technical agriculture, secondary pedagogy, or, ideally (but not necessarily), some mixture of the two. Most study at the National Autonomous University (UNA) (which had its origins as a "normal" school) where there are programs in agricultural sciences and an agricultural sciences teaching program; the University of Costa Rica; and the Technical Institute of Costa Rica (ITCR). In addition, some teachers receive training through CIPET (MEP's "Research and
Preparation Center for Technical Education") and through cooperative programs developed by combinations of institutions such as UNA and CIPET or ITCR and UCR. Finally, some CTP teachers receive varying degrees of training through other sources such as the State University at a Distance (UNED) or technological institutes. Some (more common in the past) even begin teaching immediately after graduating from CTPs (Anderson, 1983; Crawford and González, 1978).

The CTPs have been hard pressed to secure properly trained and "up-to-date" teaching staff due to a number of factors, including the sudden creation and rapid expansion of the agricultural high schools (1970-1974), rapid growth in enrollment, at a time of economic downturn (1980's), and the demands of the new curriculum. Keeping their facilities in good repair and having adequate teaching materials available have constituted additional challenges. Crawford and González (1978, p. 7) present data collected by J.R. Bustamante from MEP which shows the educational levels of the agriculture high school (agropecuarios) teachers at that time. They note that only 23 of the 392 teachers were adequately trained to teach at the high school level (four year degree with both a specialty area plus pedagogy); 249 of the 392 teachers, 64%, had no preparation to teach agriculture. CIPET and other institutions have offered in-service programs over the years, but between growing needs and shrinking budgets, a great demand still exists for professional development for CTP
agriculture teachers.

Previous studies as well as this one (Chapter IV) have shown that Costa Rican CTP teachers desire to grow professionally (Calivá, 1990; Velázquez, 1993). Calivá found in a survey he conducted that when CTP teachers were asked to rank professionalism maintenance competencies, the highest ranking was "to keep up-to-date in technical areas" (4.81 on a scale of 1-5 with 5 = very high importance) and the second highest ranking was "keep up-to-date in educative/sociological areas required for effective work" (receiving a 4.54 on the same scale) (Calivá, 1990, pp. 76-81).

If Dr. Arias's positive view of Costa Rica in the 21st century is to be realized, it is imperative that the teachers be provided professional development opportunities to support them in their efforts to serve their students, schools, and communities. Well or poorly trained agriculture teachers will influence many thousands of students who will be "on the front lines" making technological choices and social decisions when confronting present and future agricultural challenges in Costa Rica.

In response then to national concerns and the need for more appropriate curricula for the CTPs, the Ministry of Public Education developed the 1992 "Plan of Studies for Technical Education" (Ministerio de Educación Pública, 1992). When the Ministry of Public Education developed the new curriculum it was well aware of the critical and urgent need
for providing more professional development opportunities for teachers in-service to be able to implement the changes being urged both in course content and teaching methodology. In addressing the administrative implications of the "Plan" the following six points were made (ibid., pp. 57-58):

1. The establishment of a truly (effective) in-service professional development program for administrative, teaching, and technical personal is urgent.
2. CIPET should define the part of the training it was capable of providing and coordinate with other training institutions to help provide the rest.
3. Regionalize training efforts, especially those under its jurisdiction.
4. Develop agreements with institutions or businesses to provide technical or other training.
5. To begin pedagogic and technical training for teachers with the least preparation.
6. To give incentives to those teachers attend regularly the training programs.

MEP, national (and international) leaders, authors of past studies, and the teachers themselves clearly agree that more professional development opportunities are necessary for teachers at the Professional Technical High Schools. The Costa Rican institution with the primary responsibility of providing preparation and in-service professional development programs for CTP teachers is best known by its acronym, "CIPET." This
institution of higher education, the "Research and Preparation Center for Technical Education" (Centro de Investigación y Perfeccionamiento para la Educación Técnica), is a decentralized branch of the Ministry of Public Education, located in Alajuela, north of San José. Many CTP teachers have earned initial or advanced certification through attending courses offered at this center or through programs offered jointly by CIPET and other institutions such as the Technological Institute of Costa Rica (ITRC). Typical programs are offered to teachers on Friday afternoons and all day on Saturday. A program to earn the title of "Professor of the State" would take three years (MEP, 1995). However, it is difficult for CIPET to play its designated role for several reasons. Two major reasons are that it is difficult for many teachers to travel and stay in San José for courses offered at the Center. Most importantly, while the need for in-service training is great, funding for CIPET (as for the Ministry of Public Education) is limited hampering their role fulfillment.

Social Reconstruction Philosophy: Agriculture, Environment, and Education

Social reconstructionist theory contends that specially designed education can bring about behavioral and social change (McNeil, 1990). "Social reconstructionists are interested in the relationship between curriculum and the social, political, and economic development of society"
Social reconstructionist curriculum's primary purpose is to confront the learner with severe problems facing society.

Considering the economic importance of agriculture and the detrimental side effects of agricultural activity in Costa Rica, it is believed that current agricultural practices must be modified in order to reduce the environmental damage being done (National Research Council, 1989; Quesada, 1990; World Resources Institute, 1992). To improve agricultural practices in Costa Rica it is necessary for agriculturalists to develop knowledge, attitudes, and behaviors that will result in protection of the environment—the "medium" in which they farm and live—through the adoption of sustainable agricultural practices (Ehrlich & Ehrlich, 1991; Hudgens, 1989; National Research Council, 1992; Steger & Bowermaster, 1990).

One means of trying to effect change by reaching an agricultural community with new information and encouraging new attitudes and agricultural practices is through the curriculum offered students at agricultural high schools. Modifying agricultural curricula and instruction offered at the CTPs would be an approach to improve agricultural practices overall throughout the country in light of the changing economic, technological, and environmental conditions. In order to provide this education to the students at the CTPs, the agriculture teachers must be provided opportunities and stimulus to learn new information and
develop both new teaching skills and attitudes towards agriculture, education, and their roles as change agents.

Until 1994, little or no environmental education was provided through the agriculture curricula preparing students attending the country's 51 agriculture high schools (CTPs) (Macias-Lopez, 1990; Universidad de Costa Rica, Sede del Atlantico, 1993). Reaching developing agriculturalists by well prepared agriculture teachers could contribute to the development of environmentally responsible agriculturalists (Hungerford & Volk, 1990; McNeil, 1990; National Research Council, 1989; Steger & Bowermaster, 1990). Hungerford and Volk (1990), researchers studying curriculum in the new field of "environmental education," have shown that environmental education programs can influence the knowledge, attitudes, and behavior of those participating and lead to greater environmental responsibility. Key to this approach is providing well-designed in-service training in environmental education to CTP agriculture teachers.

Infusing environmental education into agricultural curricula with the intent to develop environmentally responsible agriculturalists to change "status quo" contains tenets of social reconstruction philosophy. Social reconstructionism seems to have contributed to the philosophical underpinning in the design of the Ministry of Public Education's 1992 new "Technical Education Plan of Studies" ("Plan of Study") curriculum, not just in regards to
the new agro-environmental courses, but in its general premiss. It is illustrative to take the following statements from McNeil's discussion of social reconstructionist theory and practice: "Social reconstructionists are concerned with the relation of the curriculum to society as it should be as opposed to society as it is" (McNeil, 1990, p. 47, emphasis McNeil's) and "Teachers must relate national, world, and local purposes to the students' goals. Students must use their interests to help find solutions to the social problems emphasized in their classes (p. 31)." and compare them with the following three statements in MEP's "Introduction" to the 1992 proposed new Plan of Study (translation and emphasis is researcher's):

At the present time, our country is committed to the search for educational improvement . . . to raise the quality of life of all of its citizens.

Technical Education plays a very relevant, role, [providing] a highly significant contribution as much to the individual as to the community and society in general.

The student will find in Technical Education an outlet (salida) that will prepare him to incorporate himself effectively in the productive world, while society finds in it (Technical Education), a great wealth in regards to the preparation of youth that convert themselves to elements that revitalize and enrich the development of activities in the three economic sectors: agriculture, industry and service (Ministerio de Educación Pública, 1992, p. 1.)

Education and politics are inextricably linked, with each influencing the other (Thomas, 1983). The many factors
influencing and influenced by education—whether education as generally practiced in a culture, or education with a "reconstructionist" agenda—are shown in Figure 3. When curriculum is designed with the intent of bringing about change in society, for example, reforming agricultural practices or encouraging environmental protection, one must consider the many factors involved and proceed considering them carefully.

Some aspects of social reconstructionism are found in MEP's Plan of Study and some were incorporated into the research activities. In both cases, the social reconstructionist tenets exhibit a "social adaptation" approach rather than the "neo-Marxist" approach. Both approaches derive aims and content from an analysis of the subject society and both develop curriculum in response to social needs (McNeil, 1990, p. 45). The social adaptation approach tends to provide students with information and prescriptions for dealing incrementally with social concerns. The neo-Marxist approach is to "seek a fundamental change in the basic structure of society underlying the problems" (ibid.). It is frequently espoused that only through drastic and often violent change in a society's structure can the society be improved. In Costa Rica, with widespread public education, decentralized land ownership, a democratic history and—by comparison with its neighbors—a largely
The Symbiotic Linking of Politics and Education

Figure 3. Factors influencing and influenced by education (Thomas, 1983, p. 5, Fig. 1.2).
comfortable population, an adaptive approach to change has been the norm. For contrast, neighboring Nicaragua, a country with a 42% rate of illiteracy and a host of other woes, a critical mass of the population was desperate enough to fight against the repressive Somoza regime in a "Neo-Marxist" attempt to restructure their society.

Unless interwoven societal and natural resources concerns in Costa Rica are effectively addressed -- fundamental issues such as population growth, urbanization, energy issues, agro-chemical mis-use, agriculturally related health issues, the growing infiltration of international interests into the economy, the growing concentration of land, continued deforestation, and export marketing -- the harsher social reconstructionist paradigm may be considered necessary in the future to bring about changes necessary to sustain this unique but endangered Central American country.

The Rational Model

The Rational model is an "ends-means" approach: setting "purposes or objectives as ends influences the kinds of activity and organization most likely to assist in reaching the goal" (McNeil, 1990, p. 117). Tyler is the best known proponent of this approach to curriculum development, planning, and evaluation. Worthen and Sanders outline the
following steps in Tyler's approach (Worthen and Sanders, 1987, p.63):

1. Establishment of broad goals and objectives.
2. Classification of the goals and objectives.
3. Definition of objectives in behavioral terms.
4. Identification of situations in which achievement of objectives can be demonstrated.
5. Development or selection of measurement techniques.
7. Comparison of performance data with behaviorally stated objectives.

A major strength of this approach is that it encourages clarification of general educational goals through setting specific objectives to guide instruction and facilitate objective achievement measurement. This approach is relatively easy to use, is inexpensive, has high acceptability, and addresses the current call for evaluation to measure results of development activity for more responsive feedback for the next cycle of activity and development of new projects (Picciotto & Rist, 1995).

Potential weaknesses in this approach to evaluation are that it requires a thorough understanding of the overall purposes of the activity or program being evaluated and it requires familiarity with advantages and disadvantages of the objectives-oriented approach. Additionally, simplistic or over enthusiastic application of objectives-oriented evaluation can result in a situation where implementation and evaluation become overly
concerned with "proving" objectives were met at the expense of achieving the broader goal of providing a curriculum/activity/program to meet needs. One must consider whether objectives and goals are worth attaining in the first place. In addition, the "environment" or context of activities and programs are not necessarily static and objectives may require reassessment or reformulation.

The approach to evaluation under the rational model is designed to test how well the learning experience (content and methodology) produce the desired results. The model for this approach to evaluation is referred to as the "objectives-oriented" approach (Robinson, 1994; Worthen and Sanders, 1987). The distinguishing feature of this model is that "the purposes of [the] activity are specified, and then evaluation focuses on the extent to which those purposes are achieved" (Worthen and Sanders, 1987, p.62). Evaluation can be carried out either internally or externally or both.

To optimize the objectives-oriented approach to curriculum development evaluation, the evaluator is advised to use a team approach involving the stakeholder representatives -- program organizers, instructors, participants, etc. -- to formulate and evaluate the goals and objectives against which achievement will be measured. This approach helps address inherent objectives-oriented evaluation pitfalls. In addition, involving stakeholders in the overall process and strengthen "ownership" of the activity/program being undertaken. Rist,
in discussing pros and cons of evaluation frames, argues that more participation of local people at the project level in both defining and assessing project goals may result in better evaluation findings (Picciotto & Rist, 1995, p. 171).

This approach to evaluation fits in well with current project development and evaluation directions. According to Picciotto the new direction in development evaluation is on the development impact of the activity/program being evaluated. There is a strong demand for measurement of results on the basis of a set of predetermined and quantifiable performance indicators (Picciotto & Rist, 1995).
CHAPTER III
METHODS AND PROCEDURES

The purpose of this study was to develop, implement and evaluate an approach developed for the University of Costa Rica, Atlantic Regional Center (UCRSA); to provide CTP agriculture teachers with relevant professional development opportunities; and to encourage them to apply and share the information, exercises, and materials obtained through participation at their CTPs. The primary themes addressed were sustainable agriculture, environmental protection, and pedagogy.

The "evaluation" component of the study's "development, implementation, and evaluation of the approach developed" is presented in two sections of this dissertation. Research activities and data collection procedures are described in this chapter. The development of the approach is described and evaluated in Chapter IV.

Research Situation Overview

This study was developed in response to needs identified by members of the UCRSA faculty. The study design evolved from the researcher's work with UCRSA faculty beginning in June of
1993. The research was designed and conducted from 1993 to 1995, in collaboration with UCRSA faculty and other stakeholders. Planning and coordination of activities took place in Turrialba, Costa Rica; Ames, Iowa; and in San José, Costa Rica. The primary research activity took place at the UCRSA campus in Turrialba, Costa Rica. Secondary activity occurred at the seven CTPs in the Atlantic Region: Siquirres, Limón; La Suiza, Turrialba; Bataan, Matina; Talamanca, Limón; Valle de la Estrella, Limón; Pococí, Guápiles; Guácimo, Limón (e.g. the on site administration of the third questionnaire, the post-posttest). (See Figure 4.) The research instruments were structured to provide summative evaluation on specific implementation issues of immediate interest to the program coordinators (participant satisfaction with program content and structure and program logistical support) and formative evaluation information on various aspects of the workshop content and methodology for the development of envisioned future in-service training programs. All research activities were conducted in Spanish.

**Design of the Research**

This research was developmental in nature, involving the development, implementation, and evaluation of an approach to provide professional development opportunities for in-service
Figure 4. Map of Costa Rica indicating where the research activities took place (Quesada, 1990, p. 29).
CTP agriculture teachers in Costa Rica. This type of research can enable assessment of teaching methods, curriculum models, and other efforts aimed at influencing the characteristics of individuals or groups (Fraenkel & Wallen, 1993). The study was originally designed with a one-year timeframe. However, when the opportunity arose to collect additional pertinent data, the study was extended for a second year. Data related to development of the approach were collected from a variety of sources over the two-year period. The primary instruments of measurement used for collecting data from the teacher participants were a series of questionnaires designed for written completion by the subjects (Appendix C). In 1994 four questionnaires were administered in a time series design (Fraenkel & Wallen, 1993; Sudman & Bradburn, 1983; Williamson, Karp, Dalphin, & Grey, 1982). In 1995, a pretest-posttest design was used as it was not possible for the researcher to carry out follow-on evaluation after the workshop.

The first professional development program developed and offered by UCRSA was a five-day in-service workshop provided for CTP agriculture teachers in the Atlantic Region in August 1994. The participants represented a "convenient sample" for the study. Twenty-four teachers were invited by UCRSA to participate but only 13 teachers arrived. Research data were collected following a time-series design. Four questionnaires, a pretest, posttest, post-posttest and post-post-posttest,
were administered over a two-month period to the 13 CTP agriculture teacher participants. Table 6 summarizes the research design used in the 1994 study. After the successful 1994 program, UCRSA used the same approach to develop a second workshop for CTP teachers in 1995. To incorporate 1995 data into the study, modified 1994 pretest and posttest questionnaires were administered to the 19 participants.

Table 6. Illustration of research design of the 1994 portion of the study

<table>
<thead>
<tr>
<th>Quest. 1</th>
<th>Quest. 2</th>
<th>Quest. 3</th>
<th>Quest. 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>In-service Workshop</td>
<td>Posttest</td>
<td>Post-posttest</td>
</tr>
<tr>
<td></td>
<td>(5 days)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior to Workshop</td>
<td>End of Workshop</td>
<td>7-10 days after Workshop</td>
<td>2 months after Workshop</td>
</tr>
</tbody>
</table>

before and after this three-day in-service program (Appendix C). Data obtained from this second "convenient sample" were used for further assessment of the approach, implementation, and evaluation. Table 7 illustrates the design of the administration of the two 1995 pretest and posttests.

In addition, immediately prior to the three day workshop, a one-day seminar was provided to (23) CTP teachers in the Atlantic Region at the CTP in Siquirres. A simple post program evaluation of this (1994) "follow-on" activity can be found in
Table 7. Illustration of research design in the 1995 portion of the study

<table>
<thead>
<tr>
<th>Quest. 1</th>
<th>Quest. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>In-service Workshop (3 days)</td>
</tr>
<tr>
<td>Prior to Workshop</td>
<td>After Workshop</td>
</tr>
</tbody>
</table>

Appendix D. This seminar was evidence of another type of in-service program that UCRSA could successfully provide.

Population and Sample

The population from which the samples were derived consisted of approximately 520 (1993 figure) high school agriculture teachers working at the 51 "Technical Professional High Schools" (Colegios Tecnicos Profesionales/CTPs) located throughout Costa Rica (Caliva, 1990; UCRSA, 1994). The teacher participants in the research samples represent a "convenient sample" as they were selected for participation non-randomly by the Ministry of Public Education (MEP) with some input from the CTP directors, UCRSA in-service program coordinators and to some degree by teacher self-selection.

The 1994 research sample consisted of a convenient sample of 13 CTP agriculture teachers who participated in the first professional development program. All of the seven CTPs located in the Atlantic Region were represented by one to
three teachers. The total number of CTP teachers working in the Atlantic Region at that time was approximately 98.

The 1995 group consisted of a convenient sample of 19 agriculture teachers who participated in the second in-service program. These teachers represented both CTPs in the Atlantic Region and CTPs in several other regions of Costa Rica.

Auxiliary data were gathered from a sample of 22 CTP agriculture teachers from the Atlantic Region who participated in a one-day in-service training seminar held in May 1995.

Assumptions and Limitations

1. The data obtained reflected the true opinions of the respondents
2. The instruments were effective in determining the respondents' perceptions regarding the workshop presentations, activities, materials, and related follow-on activities
3. Research data were collected on "convenient" samples; therefore, the results are limited to the samples studied.

Instrument Development

The researcher developed the data gathering instruments, a series of questionnaires, used in the study (Appendix C) based on a review of the literature including Williamson, Karp, Dalphin, and Gray (1982); Sudman and Bradburn (1983);
and Fraenkel and Wallen (1993). The Kenny and Harnisch (1982) questionnaire models were particularly important and provided the primary guide for development of three major components of the questionnaires: teacher expectations of participants, benefits of participation, and demographic information.

The first two Kenny and Harnisch models (1982, pp. 52-53) use rating scales consisting of a number of statements to which an individual is asked to respond on a interval continuum of 1 (not important) to 7 (extremely important). Rating scales convey the rater's judgement about the item in question (Fraenkel & Wallen, 1993, pp. 105-106). Rating scales were used on both the 1994 and 1995 questionnaires. A set of questions in section one of the 1994 and 1995 pretests employed a rating scale to collect data on participant expectations for participation. In a corresponding set of questions in section one of the 1994 and 1995 posttest questionnaires a rating scale was employed to collect data on benefits the participants received. The questions in this section of the pretests and posttests were arranged in a similar format to facilitate comparison of teacher expectations for participating and benefits received.

The researcher also used rating scales to compare the participants' sense of preparedness in the major program content areas and for their evaluation of the effectiveness of methodologies employed. In 1994, data were collected before and after the workshops and over a period of two months time
(pretest, posttest and post-post-posttests). In 1995 data were collected before and after the workshop for use in evaluation and for comparison with data from the 1994 workshop.

The researcher also employed Likert-type attitudinal scales (Fraenkel & Wallen, 1993, pp. 113-114), and selection-type items in combination with supply-type response questions. Both guided response and open-ended questions were used to elicit information and to encourage participants to clarify their responses -- addressing a limitation of subject-completed written questionnaires (Fraenkel & Wallen, 1993). Open ended questions were employed to gather anecdotal information and "leads" for possible future research directions.

Each of the four 1994 questionnaires and interview schedules and the two 1995 questionnaires were developed and translated into Spanish and English, as were the cover letters accompanying each questionnaire and the statement of confidentiality. Margarita Meseguer Q., UCRSA professor and in-service training program co-coordinator, and instructor of courses in research methodology and evaluation consultant, ably assisted the researcher in the development of the research instruments. UCRSA professors, Ana Tapia and Carlos Calvo P., reviewed the Spanish versions of the questionnaires.

The four 1994 questionnaires (Appendix C) were organized as follows:
Pretest Questionnaire 1: This questionnaire is divided into three sections. Section I addresses participant experience with in-service training, participant reasons for attending this training program, and participant expectations. Section II addresses participant familiarity with the in-service program thematic areas (pre workshop) to establish a baseline for later comparisons. Section III asks for demographic information.

Posttest Questionnaire 2: This questionnaire is divided into three sections. Section I addresses participant perceptions of benefits from having attended the training program and asks participants to evaluate the sessions, materials, and activities. Section II asks questions to assess participant sense of preparedness in the three technical thematic areas (post workshop). Section III asks for an evaluation of program logistics.

Post-posttest Questionnaire 3: This follow-up questionnaire had two purposes. The first purpose was to remind participants of the information, activities, and materials provided during the in-service program, to encourage review, and to stimulate application. The questionnaire introduction, wording, questions asked, and tone of the questionnaire were written to encourage the participants to review and apply what they brought back from the training program. The second purpose was to identify which (if any) of the materials they had reviewed; to determine what progress
(if any) had made in review and application of lesson plans and information sharing plans in the short time after the inservice program; and to obtain comments regarding the usefulness of plans developed during the in-service training.

This questionnaire is divided into three sections. Section I asks the participants to identify which (if any) of the materials they had reviewed and to what degree (not at all, some, sufficiently). It incorporates structured responses of why or why not items mentioned have/have not been reviewed. Section II asks questions to assess participant sense of the usefulness of the lesson plans developed, usefulness of the process and if they have reviewed or plan to use any of them. Section III asks participants to consider the "important expectation" that he/she share the information and materials gained from the in-service training program with CTP colleagues and the plans he/she has for accomplishing this objective. Questions are also asked regarding plans for sharing information within the community. Finally, the participant is asked for comments regarding reflections on the in-service training program offered a week to 10 days prior.

Post-post-posttest Questionnaire 4. There were two purposes for this follow-up questionnaire. The first was to remind participants about the information, activities, and materials provided during the in-service program. The questionnaire introduction, wording, questions asked, and tone were written to encourage the participants to continue to
review and apply what they had brought back from the in-service program two months earlier. The second purpose was to identify any evidence of impact—review of materials (if any), degree of preparedness the teachers might (or might not) feel in specific workshop content areas, and any progress made in applying lesson and information sharing plans during the two months since completion of the UCRSA in-service program.

This questionnaire is divided into three sections. Section I asks the participants to identify which (if any) of the materials they had reviewed and to what degree (not at all, some, sufficiently). It incorporates structured responses of why or why not items mentioned have/have not been reviewed. Section II asks questions to assess participant sense of the usefulness of the lesson plans developed, usefulness of the process, and if they have reviewed or plan to use any of them. Section III asks participants to consider the "important expectation" that he/she share the information and materials gained from the in-service training program with CTP colleagues and the plans he/she has for accomplishing this objective. Questions are also asked about teachers' plans for or actual sharing of information within the community. Finally, the teachers are asked to share reflections on the workshop program in which they had participated one week (post-posttest) to two months prior.

The two 1995 questionnaires (Appendix C) were organized as follows:
Pretest Questionnaire 1: This questionnaire is divided into two sections. Section I addresses participant experience with in-service training, participant reasons for attending this training program, and participant expectations. Section II asks for demographic information.

Posttest Questionnaire 2: This questionnaire is divided into three sections. Section I addresses participant perceptions of benefits from having attended the training program. Section II asks participants to react to the lesson plan development, information and materials, and to share plan development activities. Section III asks for an evaluation of program logistics.

Data Collection

All data collection was done in collaboration with the UCRSA workshop program team as a part of the formal program evaluation. Research data were gathered from a number of sources over a two year period including directly from the CTP teachers participating in two workshops conducted in 1994 and 1995. As this was a developmental study, letters, reports, proposals, and other documents relating to study activities and events also served as important data sources.

Data collection from participants was conducted at a number of different sites in the Atlantic Region of Costa Rica. Prior to collecting data from the teacher participants, the researcher obtained project approval from the Iowa State University Human Subjects Review Committee for the use of
human subjects in research. UCRSA faculty and staff generously facilitated all aspects of the researcher's data collection activities.

A chronological description of the steps in participant data collection follows:

1. August 1994: the first professional development workshop was conducted by UCRSA.
   a. The researcher administered the **pretest** to the group of CTP teacher after a brief welcome and before the workshop began. A short explanation by a UCRSA professor about the research being conducted was followed by a few words by the researcher regarding the research and the voluntary nature of teacher participation in the research, and the distribution of statements of confidentiality (Appendix C).
   b. The workshop took place over a five-day period.
   c. The researcher administered the **posttest** to the group of CTP teacher participants at the end of the last workshop activity.
   d. The researcher followed up with visits over a four-day period to each one of the participants' seven CTPs (see Figure 4) to administer the **post-posttest** to participants. In the original design, one or two UCRSA faculty members involved with the planning and implementation of the workshop were
to be involved in this activity to strengthen communications between them and the CTP teachers. However, they were busy "catching up" with other responsibilities at the university after being involved for five days plus with the workshop. A group oral interview was also conducted at the CTP by the researcher. In addition, a post-post-posttest was left with each participant in a sealed envelop for completion on October 5, two months after the end of the workshop, to be collected on or shortly after that date by UCRSA staff from the teachers' CTP work site.

e. UCRSA staff gathered the post-post-posttest from the CTP teacher participants two months later as designed (after October 5).

2. In June 1995, a second workshop took place and the first three steps described above were followed. Briefly:

a. The researcher administered the pretest when the group of CTP teacher participants first assembled and before the workshop commenced.

b. The workshop took place over a three-day period.

c. The researcher administered the posttest at the conclusion of the workshop.
Data Analysis

The data were analyzed using descriptive statistical methods. Analysis procedures followed these steps:

1. The six questionnaires were reviewed and checked for completeness.

2. Coding was done for each of the question responses.

3. The coded data were entered into the Statistical Package for the Social Sciences (SPSS) PC program for Windows for statistical manipulation and analysis.

4. The encoded data were compared with the questionnaire responses to check for inaccuracies.

5. The program FREQUENCIES was used for descriptive statistics. Frequency counts, percentages, means, and standard deviation were performed on appropriate items in the data collected.

6. The program RELIABILITY (Chronbach's alpha) was used to test the internal consistency of the same items 1-29 in the 1994 pretest and posttest and in the 1995 pretest and posttest questionnaires.

7. Tables were constructed to compare selected data tracked over time and between years (1994 and 1995).
CHAPTER IV

FINDINGS AND DISCUSSION

The findings and discussion are organized around the study's three research questions (Chapter I, pp. 16-17) regarding the development and implementation, expectation satisfaction, and impact of UCRSA provided professional development opportunities. Data presented in this chapter was collected from a variety of sources. In order to answer Research Question 1, reports, correspondence, workshop agendas, literature references, and a chronicaling of events serve as data sources. To answer Research Questions 2 and 3, data were primarily collected from two professional development workshops provided through UCRSA in 1994 and 1995. Thirteen teachers participated in the 1994 workshop and 19 participated in the 1995 workshop. The two groups of teachers participating in this study represent a convenient sample.

In the first year of the study, data were collected at four intervals: before the program began ("pretest"), immediately after it ended ("posttest"), 7-10 days after the end of the workshop ("post-posttest"), and two months after its end ("post-post-posttest"). In the second year, data were collected at only two intervals: before the program began and
immediately after it ended. The pretests and posttests were the same for each of the two years.

Demographic data for both the 1994 and 1995 groups were collected from participants on the pretests. Comparable data from the "pretests" and "posttests" for both years are shown together. Data from the 1994 series of four questionnaires which were administered over a two-month period (immediately before and after the workshop; seven days; and two months afterwards) often shows participant responses over time to the same items. In cases where not all of the participants responded to an item, "n" represents the total number of responses. Not all of the research data were reported but were collected for anecdotal information and for use in determining possible future research directions. A typographical error rendered a three-part comparison question on the 1995 posttest invalid and the data were omitted.

This chapter begins with a section on "Instrument Reliability" followed by a description of the two groups of CTP agriculture teachers that participated in the two in-service programs. The rest of the chapter presents a description and discussion of research findings organized around the three research questions.

Instrument Reliability

Data contributing to evaluation of the implementation objective were obtained through questionnaires. Reliability of
the questionnaire items was estimated as part of the data analysis process. Reliability refers to the extent to which a measuring procedure yields the same results on repeated trials (Carmines & Zeller, 1986). It refers to the consistency of the scores obtained for each individual and from one administration of an instrument to another and from one set of items to another (Fraenkel & Wallen, 1993). The Cronbach alpha reliability or internal consistency coefficient was computed on the same items 1 through 29 on both the 1994 and 1995 pretests and on the same items 1 through 29 on both the 1994 and 1995 posttests. The four alpha coefficients calculated for the four questionnaires were: 1994 pretest, .78; 1995 pretest, .75; 1994 posttest, .93; 1995 posttest, .97 indicating acceptable to good reliability of the research items. Accepting an alpha of .70 or higher is a useful rule of thumb for research purposes (Fraenkel & Wallen, 1993, p. 149).

Description of the Samples

Descriptive data obtained from the 1994 and 1995 workshop participants are shown in Tables 8-30. These data were obtained from the "pretest," the first questionnaire administered immediately prior to the two workshops. Descriptive data were obtained to build a profile of participants attending the workshops. Data on age, gender, marital status, years of teaching, present position, highest degree obtained, degree specialization, institution granting
degree obtained, degree specialization, institution granting degree, satisfaction with teaching, perception of technical preparation, and perception of pedagogical preparation will be presented. In addition, data will be presented on participant perceptions of the importance of professional development in-service programs, preferred frequency of in-service programs, and number of in-service programs attended in the last five years.

The data in Table 8 present the distribution of teachers by age groups. There was a greater proportion of younger teachers in the 1994 group than in 1995 when the number of younger and older teachers was nearly equal. When the two groups were combined, slightly more than half of the teachers were younger representing 53.1% while teachers 41 and over represented 46.9%.

Table 9 shows the gender breakdown within and between the two groups. The proportion of male teachers was much greater.

Table 8. Age of the participants

<table>
<thead>
<tr>
<th>Age group</th>
<th>1994 Group</th>
<th>1995 Group</th>
<th>Combined Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>26-40</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>61.5%</td>
<td>47.3%</td>
<td>53.1%</td>
</tr>
<tr>
<td>41-and over</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>52.7%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
in both years with a combined total of 84.4%. Data in Table 10 indicate that most of the teachers (87.5%) were married.

Table 11 summarizes the number of years of teaching experience of the workshop participants. In both the 1994 and the 1995 groups, nearly two thirds of the teachers had more

Table 9. Gender of the participants

<table>
<thead>
<tr>
<th>Gender</th>
<th>1994 Group Frequency</th>
<th>1995 Group Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>84.6%</td>
<td>84.2%</td>
<td>84.4%</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>15.8%</td>
<td>15.6%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 10. Marital status of the participants

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>1994 group Frequency</th>
<th>1995 Group Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>92.3%</td>
<td>84.2%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Single</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>10.5%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>5.3%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
than 12 years of teaching experience (61.5% and 68.4% respectively).

The data in Table 12 show the positions the teachers held at their CTPs. While the majority (76.9% and 84.2%) of the participants currently held teaching positions only, both groups contained teachers with program coordinator or administrative responsibilities.

Table 11. Years of teaching experience

<table>
<thead>
<tr>
<th>Number of yrs.</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>1-11 yrs.</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>31.6%</td>
<td>34.4%</td>
</tr>
<tr>
<td>12-24 yrs.</td>
<td>8</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>61.5%</td>
<td>68.4%</td>
<td>65.6%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 12. Positions of participants

<table>
<thead>
<tr>
<th>Position at CTP</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Teacher</td>
<td>10</td>
<td>16</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>76.9%</td>
<td>84.2%</td>
<td>81.2%</td>
</tr>
<tr>
<td>Coordinator</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>10.5%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Administration/</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Admin+Teacher</td>
<td>15.4%</td>
<td>5.3%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
The data in Table 13 show the highest degrees held by the teachers. Both the 1994 and 1995 groups showed mixed levels of preparation but the level of preparation was higher in the 1994 group (also the younger group). In the combined groups approximately one third (31.3%) had earned a post secondary certificate or a diploma (some earned many years to over two decades ago) that would permit them to teach, another one third (34.4%) had achieved the professional title of "professor," and nearly one fifth had earned a four year "bachelor" degree. The teachers holding the Licenciado degrees (most of whom were in the younger 1994 group) had studied well over four years and written a thesis--more than is usual for careers in high school teaching.

Table 13. Highest degree obtained by participants

<table>
<thead>
<tr>
<th>Degree</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Certificate/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>(No. yrs. post H.S.)</td>
<td>15.4%</td>
<td>42.1%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Professor</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>(2-3 yrs.)</td>
<td>30.8%</td>
<td>36.8%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>(4 yrs.)</td>
<td>30.8%</td>
<td>15.8%</td>
<td>21.9%</td>
</tr>
<tr>
<td>Licenciado</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>(4+yrs &amp; thesis)</td>
<td>23.1%</td>
<td>5.3%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
The data in Table 14 show the teachers' areas of specialization. A large majority (90.6%) in both groups were prepared in a technical agriculture area but only 6.3% had training with an emphasis in education (pedagogy). One participant (3.1%) reported having specialized in educational administration.

Table 14. Degree specialization of participants

<table>
<thead>
<tr>
<th>Degree Area</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Technical Ag.</td>
<td>11</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>84.6%</td>
<td>94.7%</td>
<td>90.6%</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>5.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Ed. Admin</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>0.0%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 15 indicates which institutions had granted the teachers their degrees. The teachers had received their degrees from a variety of Costa Rican institutions. Two had attended an institution (Zamorano) in Honduras. The National Autonomous University in Heredia, had granted more degrees (35.5%) than any one of the others.

Table 16 presents data on how satisfied the teachers were with their occupation. The data show that the two groups of teachers were satisfied with their occupation with slightly
Table 15. Institution granting degree

<table>
<thead>
<tr>
<th>Institution</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Univ. of C.R. (UCR)</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>30.8%</td>
<td>11.1%</td>
<td>19.4%</td>
</tr>
<tr>
<td>National Univ. (UNA)</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>33.3%</td>
<td>35.5%</td>
</tr>
<tr>
<td>CIPET (MEP)</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>16.7%</td>
<td>16.1%</td>
</tr>
<tr>
<td>*ITCR &amp; UNA or UCR</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>11.1%</td>
<td>9.7%</td>
</tr>
<tr>
<td>CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>11.1%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Zamorano/Other</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>16.7%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Technical Institute of Costa Rica

over half (51.7%) responding that they were "very satisfied." However, a marked difference exists between the groups with lower levels of satisfaction reported in the 1994 group. None of the teachers in either group reported being "not satisfied" with their teaching occupation.

Data presented in Table 17 show that the majority (72.4%) of participants felt prepared in the technical agriculture area. Recall that most of the teachers (90.6%) in the study had specialized in technical agriculture. However, a difference in perception of preparation is apparent between
Table 16. Satisfaction with occupation

<table>
<thead>
<tr>
<th>Degree of Satisfaction</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Not satisfied</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Slightly satisfied</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>25.0%</td>
<td>5.9%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>50.0%</td>
<td>23.5%</td>
<td>34.5%</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>3</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>25.0%</td>
<td>70.6%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The two groups. The 1994 group felt somewhat less well prepared than the 1995 group. As shown earlier, the 1994 group was also generally better educated and younger.

Table 18 shows that the teachers felt somewhat less well prepared in pedagogy than in technical agriculture. An additional notable difference exists between the 1994 and 1995 groups in perceptions of level of preparation in pedagogy. Nearly half of the 1994 group (41.7%) felt only "Slightly Prepared" in pedagogy compared to 11.1% of the 1995 group. The data presented in Tables 16, 17, and 18 indicate that the teachers in the two study samples were satisfied with their occupation and generally felt prepared for their responsibilities as teachers.
Table 17. Perceived preparation in technical areas (agriculture or sciences)

<table>
<thead>
<tr>
<th>Degree Prepared</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Somewhat prepared</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>25.0%</td>
<td>5.9%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Prepared</td>
<td>8</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>66.7%</td>
<td>76.5%</td>
<td>72.4%</td>
</tr>
<tr>
<td>Well prepared</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>8.3%</td>
<td>17.6%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 18. Perceived preparation in pedagogy by participants

<table>
<thead>
<tr>
<th>Degree prepared</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Not prepared</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>41.7%</td>
<td>11.1%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Prepared</td>
<td>7</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>58.3%</td>
<td>66.7%</td>
<td>63.3%</td>
</tr>
<tr>
<td>Well prepared</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>22.2%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 19 summarizes the 1994 and 1995 CTP teacher perspectives on the importance of professional development programs for CTP teachers. Significantly, nearly all (96.9%) believed that such programs are "Very Important."

Table 19. Perceived importance of professional development programs for CTP teachers

<table>
<thead>
<tr>
<th>Degree of Importance*</th>
<th>1994 Group</th>
<th>1995 Group</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Very important</td>
<td>13</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>94.7%</td>
<td>96.9%</td>
</tr>
<tr>
<td>Not sure:</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>5.3%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Scale: Not Important, Important, Very Important, Not Sure

The data presented in Table 20 show how often the teachers believed that CTP teachers should attend professional development in-service training programs. Nearly two fifths (38.7%) of the teachers believed CTP teachers should attend in-service programs two times per year. One third (33.8%) believed that three to four times per year would be appropriate. A preference for attending one time per year was expressed by about a quarter (24.8%) of the participants. Nearly all (97.2%) of the teachers believed that CTP teachers should attend professional development programs from one to four times per year.
Table 20. How often CTP teachers should attend in-service professional development programs as perceived by workshop participants

<table>
<thead>
<tr>
<th>Frequency*</th>
<th>1994</th>
<th>1995</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every 3-4 Mo:</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>23.1%</td>
<td>44.4%</td>
<td>33.8%</td>
</tr>
<tr>
<td>2x per year:</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>39.9%</td>
<td>38.7%</td>
</tr>
<tr>
<td>1x per year:</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>11.1%</td>
<td>24.8%</td>
</tr>
<tr>
<td>Not sure:</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>5.6%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Choices: Every Month, Every 3-4 Months, 2 Times per Year, Yearly, Every 2 Years, Every 3 Years, Every 4-5 Years, Unsure

Table 21 shows the average number of professional development programs that the 1994 and 1995 CTP teachers actually attended during the last five years. Although the indication in Table 20 is that they believed CTP teachers should participate in one to four in-service training activities per year, data in Table 21 show that these two groups of CTP teachers have attended on average only one in-service program every 1.75 years (1:1.75). When this figure is compared to the preferred two programs per year (2:1); three to four programs per year (3-4:1); or minimum one program per year 1:1, a disparity is evident between these teachers'
interest in attending in-service programs and the number of programs they actually attended. This data supports previous research and observations (Crawford and Gonzalez, 1978; MEP, 1992).

The data in Tables 79, 80, and 81 indicate that the teachers were:

1. unanimous in believing in-service programs were important, and
2. clear in their belief that teachers should attend far more in-service programs than they had attended over the last five years.

These findings strongly support the 1992 MEP assessment, the 1993 Commission needs assessment, and those of earlier studies discussed in Chapter II that more in-service training opportunities are needed by the CTP teachers.

Findings Related to the Three Research Questions

The next section of this chapter is organized around the three research questions posed in this study. Research
findings for Question 1 include description, documentation, and discussion of the processes and steps involved in the development and implementation of the approach focused on the first year of research. In the second year of the study the same approach was followed with several modifications that are noted at the end of this section. Findings related to Questions 2 and 3 were largely derived from data collected with the four 1994 and two 1995 research instruments and are presented under each of those two questions. Several letters and other documents also serve as data sources. A table of research related events is also included in this section.

Research Question 1

How can an approach to provide professional development for CTP agriculture teachers including pedagogy, sustainable agriculture, and an environmental education component be developed and implemented through UCRSA?

The "approach to providing professional development" was developed during 1993-1994. This was the original time frame envisioned for the study and is the time frame of the approach development presented below. After the first year's program (1994), UCRSA provided a second program following the model developed in the first year. Therefore, the "approach" discussed under Research Question 1 is that which was originally developed in the first year of the study.
The "rational model," described in Chapter II, was the theoretical basis underpinning the approach developed for UCRSA to provide professional development to in-service CTP agriculture teachers. The steps of the objectives-oriented model adapted from Taba, who worked with Tyler (Worthen & Sanders, 1987), Robinson (1994), and Fraenkel & Wallen (1993) are outlined below:

1. Diagnosis of needs
2. Establishment of broad goals
3. Formulation of objectives
4. Selection of content
5. Organization of content
6. Selection of learning experiences
7. Organization of learning experiences
8. Determining the "what" and "how" of evaluation

Steps of this model were followed in the approach developed and each is discussed below. Note that however well a model may serve as a guide, it takes individuals to put one into practice. Development and implementation of the approach was, in practice, dependent on the collaboration of numerous institutions and individuals. A sense of "teamwork" and the development of partnerships with efforts focused on the shared goal of providing professional development opportunities by UCRSA for the CTP teachers was essential.

The partnering institutions and their primary reasons for involvement consisted of:

1. **UCRSA(UCR)** - Make resources (facilities and personnel) and expertise in agricultural sciences and education available to meet regional and national need ("social action" mandate)
2. **MEP** - Provide CTP teachers with increased opportunities for professional development—especially in light of recent CTP curriculum changes

3. **CTPs** - Staff development to meet changing demands

4. **CICET (ISU-UCR)** - University Development Linkage Program (UPLP) encouraging inter-university cooperation and exchange

5. **WWF** - World Wildlife Fund mandate to protect wildlife and habitat including environmental education

The researcher must stress how important was the real interest and commitment of the individuals involved. The goal of providing professional development to CTP agriculture teachers was of institutional interest, but it took many hours and days outside of the usual eight-to-five Monday-thru-Friday work-week to accomplish an undertaking of this nature. The enthusiasm of the program’s organizing partners (and no less so that of the participating teachers who spent parts of weekends and worked long hours in the workshops) was the connecting web that built the structure to provide the in-service training.

Table 2 in Chapter I provides a chronological background of events behind various stakeholders’ participation in this undertaking. The need CTP teachers have for in-service training, motives for UCRSA’s, MEP’s, CICET’s, and WWF’s roles, were connected to internal and external, local, national, and international events. Development of the approach was also connected to and consisted of a number of events which are shown chronologically in Table 22. This table
Table 22. Chronological framework of events influencing and occurring in the development of the study approach to providing professional development opportunities for CTP agriculture teachers

<table>
<thead>
<tr>
<th>Date</th>
<th>Institution(s)</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/93</td>
<td>UDLP ISU UCRSA</td>
<td>- UCRSA (UDLP team) professors, Carlos Calvo and David Hine come to ISU for 10 days to work with researcher (host) and others at ISU on the development of a new ag. ext. program and teacher training program. - Chronology developed as a framework for proceeding. - The need for CTP teacher in-service training was discussed. - Sustainable agriculture and environmental education were identified as current topics of interest in Costa Rica and newly mandated by MEP at the CTPs.</td>
<td>Table 1 deBaca, n.d.</td>
</tr>
<tr>
<td>10/93</td>
<td>ISU UCRSA</td>
<td>Researcher, in collaboration with Carlos Calvo, developed and sent program proposals to WWF and the Ford Foundation for agriculture teacher in-service training program funding.</td>
<td></td>
</tr>
<tr>
<td>11/93</td>
<td>UCRSA</td>
<td>Needs assessment conducted nationally by UCR Commission aimed at agricultural extensionists, and agriculture educators leaders and CTP teachers preliminary results indicate clear need for CTP teacher professional development.</td>
<td>Velázquez, 1993</td>
</tr>
</tbody>
</table>
Table 22. (continued)

<table>
<thead>
<tr>
<th>Date</th>
<th>Institution(s)</th>
<th>Event/Activity/Document</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/94</td>
<td>UDLP, ISU</td>
<td>Researcher traveled to UCRSA Turrialba to continue work on the Ag. Ext. &amp; Ed. programs.</td>
<td>Brookes, 1994</td>
</tr>
<tr>
<td></td>
<td>UCRSA</td>
<td>Preliminary results of the three surveys reviewed: ag. educators (1); CTP teachers (1); extensionists (1). Key decision made to focus proposed new degree program at UCRSA on agricultural extension. Proposal will be sent to CONARE. Survey results showed need for training currently employed teachers, not formation of new ones. Planning for first teacher in-service training program at UCRSA in June (held August). Presenters identified, logistics worked on. Researcher visited Miguel Cifuentes of WWF to secure funding for in-service program (Environmental Education - a major theme).</td>
<td>Velázquez, 1993</td>
</tr>
<tr>
<td>7/94</td>
<td>CICET, ISU</td>
<td>UCRSA and ISU staff follow-up with MEP to secure that portion of funding for (Aug.) in-service program.</td>
<td>de Baca, n.d. (Appendix D)</td>
</tr>
<tr>
<td>8/94</td>
<td>UCRSA, ISU, UDLP, MEP, WWF</td>
<td>First in-service CTP teacher training program held at UCRSA. Pre-, Post-, Post-post site visit and Post-post- post 2-month follow-up study questionnaire were completed and obtained by researcher in collaboration with UCRSA staff. Researcher at UCRSA for 1st workshop and follow-up.</td>
<td>de Baca, n.d.</td>
</tr>
<tr>
<td>9/94</td>
<td>UDLP, ISU, UCRSA</td>
<td>UCRSA faculty submit UDLP application requesting support for 4 more teacher in-service professional development programs in 1995.</td>
<td>de Baca, n.d.</td>
</tr>
<tr>
<td>Date</td>
<td>Institution(s) Involved</td>
<td>Event/Activity/Document</td>
<td>Reference</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>1/95</td>
<td>UDLP, MEP</td>
<td>MEP approved and agreed to provide partial support for 2 workshops in 1995.</td>
<td></td>
</tr>
<tr>
<td>2/95</td>
<td>UDLP</td>
<td>UCRSA professors Margarita Meseguer and Ana Tapia traveled to Ames for one month of professional development and to work with researcher reviewing results of 1994 teacher in-service program to plan for 1995 programs.</td>
<td></td>
</tr>
<tr>
<td>6/95</td>
<td>UCRSA, ISU, UDLP, MEP, WWF</td>
<td>Second in-service CTP teacher professional development program held at UCRSA and one-day training seminar for regional CTP teachers held at Siquirres CTP. Researcher &amp; Dr. Jim Pease at UCRSA for 2nd workshop.</td>
<td></td>
</tr>
<tr>
<td>11/95</td>
<td>UCRSA, ISU, CICET</td>
<td>Dr. Pease traveled to UCRSA providing two more seminars among other activities continuing the collaborative approach.</td>
<td>Pease, 1995</td>
</tr>
</tbody>
</table>
presents the framework within which the approach was developed and the two-year study occurred.

The foundation for development of the approach was laid when Professors Carlos Calvo and David Hine traveled to ISU in July of 1993 and worked with the researcher and others designing the projected chronology of events and activities that would need to occur to develop a new degree program in agricultural extension and education. A summary of this chronology (Table 2) and a table showing specific approach development events and dates (Tables 3a and 3b) can be found in Chapter I. The use of electronic communications (Internet) by Prof. Calvo and the researcher helped to maintain and build the momentum begun in July. Key events such as the findings of the Commission's needs assessment (November, 1993) and information that the new MEP curriculum for the CTPs were communicated, implications discussed, and plans developed through the use of e-mail.

In March 1994 the researcher traveled to UCRSA under the auspices of CICBT/UDLP and worked closely with Professors Carlos Calvo P., Margarita Meseguer, several other highly motivated UCRSA professors and Dr. Orlando Salazar (UCRSA president) laying the groundwork for the first workshop. Commission members, UCRSA faculty and staff, and the researcher worked together reviewing goals of the professional development program, formulating specific objectives, and organizing the program.
Once program content was identified, numerous contacts were made aimed at identifying potential funding sources. Dr. Salazar communicated with MEP and the researcher followed up on a workshop funding proposal she had sent (Fall 1993) to the World Wildlife Fund. Margarita Meseguer arranged a visit to the WWF regional office located at CATIE in Turrialba. Excellent educational resources were obtained and mutually supportive goals were identified. It appeared that WWF might be a source for a workshop presenter and a potential partner assisting with partial funding for a workshop aimed at environmental protection.

Each of the steps in the rational model outlined above was included in the development of the approach and will be addressed in sequence:

1. **Diagnosis of needs.** The need for in-service training for CTP agriculture teachers (see Appendix A) was established through review of literature, documents, and correspondence, (Calvo, 1993; Crawford & González, 1978; Ministerio de Educación Pública, 1992; UCRSA, 1993; Williams, 1991 & 1992) and findings from a national needs assessment (Velázquez, 1993).

2. **Establishment of broad goals.** MEP (1992) specified the need for in-service training opportunities to help prepare CTP teachers for teaching the new curricula. UCRSA wished to provide outreach (acción social) (UCRSA, 1993) to agriculture teachers (see Appendix A). In the UCRSA proposal to provide
professional development programs the following goals were stated (Calvo, 1994):

a. To establish a series of in-service professional development workshops for teachers in the area of agriculture at the [CTPs]

b. To provide the opportunity to [CTP] teachers to participate in in-service programs that would allow them to acquire knowledge from [highly qualified] specialists that would be applicable to conditions at the [CTPs]

c. To improve the academic level of the [CTP] teachers as well as their "Civil Service category" (Calvo, 1994).

3. Formulation of objectives. Under the broad goal of providing professional development opportunities for CTP agriculture teachers and taking into consideration the findings of the 1993 needs assessment (Velázquez), UCRSA program goals, and the new curriculum developed by the Ministry of Public Education, the following objectives were developed:

a. Provide training in technical agriculture areas in which CTP teachers had expressed the greatest interest

b. Provide instruction in pedagogy and teaching methodology

c. Encourage teachers to disseminate information

d. Provide a program satisfying MEP requirements for approval (content, quality, and minimum of 40 instructional hours)

e. Provide the logistical support necessary to house, feed, and transport program participants

4. Selection of content. After consideration of teacher needs and preferences, MEP, and WWF preferences and
requirements, UCRSA strengths and resources available the following the following three technical content areas or "themes" were proposed and selected for the first in-service program (Calvo, 1994) (Appendix A):

a. Importance of the agricultural sector
b. Environmental protection
c. Sustainable agriculture

Additional topics under the broader "environmental education" umbrella included:

d. Biodiversity
e. Environmental education

The following education/communication components were also selected:

f. Pedagogy
g. Teaching skills enhancement
h. Information sharing

Another important component of the content was the thematic material that each visiting speaker was asked to bring with him or her to distribute to the workshop participants. One of the greatest challenges the CTP teachers face is the lack of materials to work with—especially up-to-date material. When workshop content was determined, the specialists invited to give presentations on the chosen topics were also asked to bring copies of their presentation and any other pertinent material with them to distribute to the participants. The speakers responded wholeheartedly and the
all the participants were able to obtain copies of materials the presenters used, pamphlets, some books, posters, maps, graphic presentations, overhead transparencies, etc. for their use and for sharing with their colleagues when they returned to their respective CTPs.

5. Organization of content. The content was organized under the three technical themes: (a) Importance of the Agricultural Sector, (b) Environmental Protection, and (c) Sustainable Agriculture. Different aspects of pedagogy and application exercises (lesson plan and dissemination plan development) were interspersed around these themes. How the workshop topics, lesson plan, and information dissemination plan activities were organized is contained in Appendix B.

6. Selection of learning experiences. Criteria for the selection of learning experiences included (a) appropriateness for adult learners (Cross, 1983; Robinson, 1994) and (b) appropriateness for content area. A number of techniques were used including: a specialist lecture on the Structural Readjustment, small group team work on lesson plan development, a field trip to a natural area, a film on biodiversity of Costa Rica, games appropriate for use in the classroom, role playing, discussion, etc. Variety was provided to motivate and stimulate the teachers to maximize their learning potential and to provide examples of what they could make available in their classrooms. The teachers obviously
enjoyed the different activities and "warmed up" rapidly to the hands on activities, charades, outdoor educational activities and others new to them presented with encouragement to teachers to incorporate these activities in their own classrooms.

In order to accomplish the development of lesson plans and plans for disseminating (sharing) workshop content and materials these steps were followed: (a) information was presented, (b) lesson plans were developed by teachers working in small groups, (c) a spokesperson from each group described the jointly arrived at lesson plan to the whole group in order to test and refine the plan with input from the larger group and, at the same time, (d) taught the other teachers an approach to using the new material, and, finally, (e) the revised lesson plans were typed, copied, and distributed to all participants. In this way all of the participants became more familiar with the material and had a number of lesson plan ideas to work with upon returning to the classroom. A similar process was followed for the development and sharing of plans for the dissemination of information and materials with other colleagues at the teachers' CTPs. The methodology used is described in greater detail in Appendix B following the Workshop I agenda and two planning guides.

Two factors constraining the learning experience selection were (a) time: due to the number of stakeholders involved and the relative infrequency of such opportunities
the "plate was full" with a number of topics to cover in 4 1/2 days, and (b) the presentation styles of invited speakers (they were encouraged ahead of time to be dynamic and innovative--they usually were, but not always).

Three reviews of the workshops, two letters from UCRSA administration and a formal report by Ricardo Ramirez, National Advisor, Department of Technical Education/MEP, found in Appendix D, provide valuable insights into the learning experiences.

7. Organization of learning experiences. The learning experiences were organized around the themes described above but in such a way that, while there was a logical progression from theory to application in each topical area, there were a variety of activities each morning, afternoon, and evening. For example, an hour of lecture-style presentation would be followed by an interactive question and answer session, followed by a tour of facilities, followed by a session on lesson plan development, followed by a film, followed by role playing, and so on. The workshop was organized for:

a. **coherency** - topics were grouped and presented under the workshop themes (e.g. the day 2 theme was "sustainable agriculture." Related topics were presented and lesson plan development on that topic followed soon after)

b. **consistency** - the same patterns was followed: a topic was presented, lesson plans were developed, and plans for dissemination were developed)

c. **variety** - as people learn in different ways, the learning experiences were presented using a variety of instructional methods: demonstrations, group work, lecture, field trip, film and video, individual work
later shared with the group, games, drawing, large and small group discussions, etc.

d. motivation - besides being presented through a variety of instructional methods, learning activities were linked to the teachers' work and the important role they play in their schools, communities, and Costa Rica.

In addition to learning experiences organized around technical subject matter, two important components of the workshops, the development of lesson plans related to the topics presented and plans for sharing new information and materials, are described in Appendix B following the agenda for Workshop I.

The organization of learning experiences for the participants can be seen in the workshop agendas for 1994 and 1995 in Appendix B. Appendix D contains reports and letters from UCRSA and MEP evaluating different aspects of the programs' organization.

8. Determining the "what" and "how" of evaluation. As it was proposed that a series of similar professional development workshops be provided, evaluation would play an important role in assessing both the effectiveness of each workshop measured against objectives (summative) and helping identify need for modification in successive workshops (formative) (Gammon, 1991; Robinson, 1994; Worthen & Sanders, 1987). The evaluation model used in this study was the "objectives-oriented" approach (Robinson, 1994; Worthen & Sanders, 1987). The distinguishing feature of this model is that "the purposes of [the] activity are specified, and then evaluation focuses on
the extent to which those purposes are achieved" (Worthen & Sanders, 1987, p. 62).

The first step in the study evaluation was clarification of general program goals and implementation objectives. Setting specific objectives in turn guided instruction and then facilitated objective achievement measurement. Numbers 2 and 3 above describe the goals and objectives determined in this study. The study evaluation was conducted using a series of four questionnaires in 1994 (pretest, posttest, post-posttest, and post-post-posttest) to evaluate program implementation and impact.

The same approach to program development and implementation described above was followed in the second year of the study. There were however four major differences between the two workshops: (a) a new topic, youth organizations, was introduced in response to an interest expressed by participants in the 1994; (b) the workshop was three days long (not five) due to funding considerations; (c) the participants handled their own transportation arrangements instead of UCRSA (due to funding considerations); and (d) only a pretest and posttest were administered.

Research Question 2

Would the professional development approach developed and implemented meet the expectations of the participating CTP teachers and other stakeholders?
In the following three sections, data is presented which indicate that the approach developed and implemented met the

1. teachers' expectations
and the expectations of other primary stakeholders including:

2. UCR, Atlantic Regional Center (UCRSA), and
3. the Ministry of Public Education (MEP).

1. Teachers' expectations

Data obtained from the pretest and posttest questionnaires clearly indicate that the two workshops were successful in meeting teacher expectations. Table 23 presents data on teachers' expectations and reasons for attending the UCRSA professional development workshops and Tables 24 and 25 indicates teachers' perceptions of benefits derived from participation. A fourth table, Table 26, presents comparisons between pre-workshop expectations and post-workshop perceived benefits.

Table 23 presents data indicating that both groups of participants had overall high expectations for the workshops. These data, obtained from the pretests, have been ordered by the combined group means from "very important" to "unimportant." The combined group means show that of 28 possible "expectations," 22 received a rating above the response scale mean of 2.5. The data show a high frequency of means greater than 2.5 ranging from 3.92 to 2.62 for the 1994 group and 3.84 to 2.72 for the 1995 group. By reviewing the standard deviations (S.D.) it can be seen that the two groups
generally show strong agreement (lower S.D.) on which expectations were "very important." Conversely, the lower ranked "somewhat important" expectations show greater variation in opinions (higher S.D.) between the two groups.

The most important expectations held by both groups were to prepare themselves to meet changing professional responsibilities, acquire new professional knowledge and skills, increase technical knowledge, serve their students and communities better, and to help them to keep abreast in their field. Their lowest expectations included the importance of colleagues attending from the same CTP, curiosity about in-service training provided by UCRSA, being challenged by the ideas of other teachers, escaping classroom routine, improved salary, and increased prestige. It will be seen later (Tables 24 and 26) that after participation in the workshops, some of the lower expectations became more important reasons for attending than they realized. This was especially so regarding the importance of other CTP teachers to their overall experience.

Table 24 presents data on the benefits teachers received from participating in the 1994 and 1995 workshops. These data, obtained from the posttests, have been ordered by the combined group means by degree of satisfaction. The data are presented beginning with benefits for which participants reported "great" satisfaction ranging down to those benefits from which they received only slight satisfaction. Data from the
Table 23. Teachers' expectations and reasons for attending the workshops ranked in order of importance (data from 1994 and 1995 pretests)

<table>
<thead>
<tr>
<th>Expectations</th>
<th>1994 Group (n = 13)</th>
<th>1995 Group (n = 19)</th>
<th>Combined Groups (N = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare myself to better meet changing emphases in professional responsibilities</td>
<td>3.92 0.28</td>
<td>3.84 0.37</td>
<td>3.88</td>
</tr>
<tr>
<td>2. Acquire new professional knowledge and skills</td>
<td>3.92 0.28</td>
<td>3.84 0.37</td>
<td>3.88</td>
</tr>
<tr>
<td>3. Increase my technical knowledge in order to help meet CTP curriculum demands</td>
<td>3.77 0.44</td>
<td>3.95 0.23</td>
<td>3.86</td>
</tr>
<tr>
<td>4. Help me increase the likelihood that my students are better served</td>
<td>3.77 0.44</td>
<td>3.95 0.23</td>
<td>3.86</td>
</tr>
<tr>
<td>5. Improve my professional service to my community</td>
<td>3.69 0.48</td>
<td>3.95 0.23</td>
<td>3.82</td>
</tr>
<tr>
<td>6. Help me keep abreast of new developments in my field</td>
<td>3.85 0.38</td>
<td>3.79 0.42</td>
<td>3.82</td>
</tr>
<tr>
<td>7. Improve my teaching skills</td>
<td>3.77 0.44</td>
<td>3.74 0.56</td>
<td>3.76</td>
</tr>
<tr>
<td>8. Learn from the interaction with other professionals</td>
<td>3.69 0.63</td>
<td>3.74 0.45</td>
<td>3.72</td>
</tr>
</tbody>
</table>
Table 23. (continued)

<table>
<thead>
<tr>
<th>Expectations</th>
<th>1994 Group (n = 13)</th>
<th>1995 Group (n = 19)</th>
<th>Combined Groups (N = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Be able to exchange ideas with other professionals in my field</td>
<td>3.69 0.48</td>
<td>3.72 0.46</td>
<td>3.71</td>
</tr>
<tr>
<td>10. Improve my professional service to students, the CTP, and the community</td>
<td>3.69 0.48</td>
<td>3.68 0.48</td>
<td>3.69</td>
</tr>
<tr>
<td>11. Maintain my current skills</td>
<td>3.62 0.65</td>
<td>3.63 0.50</td>
<td>3.63</td>
</tr>
<tr>
<td>12. Improve my teaching abilities following current MEP guidelines</td>
<td>3.77 0.60</td>
<td>3.47 0.84</td>
<td>3.62</td>
</tr>
<tr>
<td>13. Help me be more competent in my current work</td>
<td>3.39 0.77</td>
<td>3.79 0.42</td>
<td>3.59</td>
</tr>
<tr>
<td>14. Obtain new instructional materials for my courses</td>
<td>3.54 0.52</td>
<td>3.63 0.50</td>
<td>3.59</td>
</tr>
<tr>
<td>15. Better meet requirements of my CTP</td>
<td>3.62 0.65</td>
<td>3.47 0.84</td>
<td>3.55</td>
</tr>
<tr>
<td>16. Reflect upon the value of my professional responsibilities</td>
<td>3.39 0.65</td>
<td>3.58 0.61</td>
<td>3.49</td>
</tr>
<tr>
<td>17. Examine my professional role and practices</td>
<td>3.39 0.65</td>
<td>3.53 0.61</td>
<td>3.46</td>
</tr>
<tr>
<td>18. Obtain information to share with my CTP colleagues</td>
<td>3.39 0.65</td>
<td>3.47 0.51</td>
<td>3.43</td>
</tr>
</tbody>
</table>
Table 23. (continued)

<table>
<thead>
<tr>
<th>Expectations</th>
<th>1994 Group (n = 13)</th>
<th>1995 Group (n = 19)</th>
<th>Combined Groups (N = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
</tr>
<tr>
<td>19. Review my commitment to my profession</td>
<td>3.46</td>
<td>0.78</td>
<td>3.16</td>
</tr>
<tr>
<td>20. Help me acquire leadership capabilities in my profession</td>
<td>3.08</td>
<td>0.64</td>
<td>3.32</td>
</tr>
<tr>
<td>21. Increase the likelihood of my advancement/promotion</td>
<td>3.08</td>
<td>0.86</td>
<td>2.95</td>
</tr>
<tr>
<td>22. I asked to attend</td>
<td>2.31</td>
<td>1.03</td>
<td>2.72</td>
</tr>
<tr>
<td>23. Increase my prestige</td>
<td>2.69</td>
<td>1.11</td>
<td>2.28</td>
</tr>
<tr>
<td>24. Improve my salary</td>
<td>2.62</td>
<td>0.87</td>
<td>2.18</td>
</tr>
<tr>
<td>25. Escape the ordinary classroom routine</td>
<td>2.39</td>
<td>1.19</td>
<td>2.17</td>
</tr>
<tr>
<td>26. Be challenged by the ideas of my colleagues</td>
<td>2.31</td>
<td>0.86</td>
<td>1.94</td>
</tr>
<tr>
<td>27. Curiosity about an in-service training program provided by UCRSA</td>
<td>2.23</td>
<td>0.93</td>
<td>1.94</td>
</tr>
<tr>
<td>28. I wanted to attend because colleagues from my CTP were attending</td>
<td>1.83</td>
<td>0.94</td>
<td>1.33</td>
</tr>
</tbody>
</table>

(Scale:
1 = Unimportant 2 = Somewhat Important 3 = Important 4 = Very Important)
posttests indicate that both groups of teachers had derived substantial benefit overall from participation rating 25 of the 28 possible benefits from "greatly satisfactory" to "satisfactory" (3.78 to 2.93) with most well above the benefit response scale mean of 2.5.

Benefits found to be of greatest satisfaction to the teachers included their decision to attend, obtaining teaching materials at the workshops, exchanging ideas with other professionals in their field, obtaining information to share with their CTP colleagues, and learning from interaction with other professionals with combined group means ranging from 3.78 to 3.51. The only three benefits with less than "satisfactory" group means (2.24 to 1.53) were perceptions that their prestige would increase, that there would be increased likelihood for advancement in their position, and, least of all, that their potential salary level improved. Note that neither advancement, prestige, nor salary level improvement were very important "expectations" for workshop participation ranking 21st, 23rd and 24th of 28 "expectations" on Table 23.

Table 25 presents 1994 posttest data showing teachers' responses to an open ended question that asked them to list the three most important benefits they had derived from participating in the workshop. Note that the thirteen teachers responded to this open ended question with a total of only six benefits mentioned indicating their importance
Table 24. Benefits teachers received from the workshops ranked by degree of satisfaction (data from 1994 and 1995 posttests)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>1994 Group (n = 13)</th>
<th>1995 Group (n = 19)</th>
<th>Combined Groups (N = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
</tr>
<tr>
<td>1. Degree pleased with my decision to attend</td>
<td>4.00</td>
<td>0.00</td>
<td>3.56</td>
</tr>
<tr>
<td>2. Obtained new teaching materials to take back to my classes</td>
<td>3.77</td>
<td>0.44</td>
<td>3.68</td>
</tr>
<tr>
<td>3. Exchanged ideas with other professionals in my field</td>
<td>3.69</td>
<td>0.48</td>
<td>3.47</td>
</tr>
<tr>
<td>4. Obtained information to share with my high school colleagues</td>
<td>3.69</td>
<td>0.48</td>
<td>3.42</td>
</tr>
<tr>
<td>5. Learned from interaction with other professionals</td>
<td>3.62</td>
<td>0.51</td>
<td>3.39</td>
</tr>
<tr>
<td>6. Helped me review my commitment to my profession</td>
<td>3.69</td>
<td>0.63</td>
<td>3.28</td>
</tr>
<tr>
<td>7. I became more informed of new developments in my field</td>
<td>3.62</td>
<td>0.51</td>
<td>3.28</td>
</tr>
<tr>
<td>8. Helped me maintain my current abilities</td>
<td>3.69</td>
<td>0.48</td>
<td>3.17</td>
</tr>
<tr>
<td>9. Will allow me to better meet the needs of my high school</td>
<td>3.62</td>
<td>0.51</td>
<td>3.22</td>
</tr>
<tr>
<td>Benefits</td>
<td>1994 Group (n = 13)</td>
<td>1995 Group (n = 19)</td>
<td>Combined Groups (N = 2)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>10. I was able to contemplate changing emphases of my present professional responsibilities</td>
<td>3.62 0.65</td>
<td>3.17 0.71</td>
<td>3.40 0.71</td>
</tr>
<tr>
<td>11. Helped me increase the likelihood that my students are better served</td>
<td>3.54 0.52</td>
<td>3.26 0.65</td>
<td>3.40 0.65</td>
</tr>
<tr>
<td>12. Increased my technical knowledge to help meet CTP curriculum demands</td>
<td>3.62 0.51</td>
<td>3.16 0.60</td>
<td>3.39 0.60</td>
</tr>
<tr>
<td>13. Will improve my professional service to my community</td>
<td>3.46 0.66</td>
<td>3.32 0.82</td>
<td>3.39 0.82</td>
</tr>
<tr>
<td>14. Improved my ability to follow current MEP educational guidelines</td>
<td>3.54 0.52</td>
<td>3.21 0.63</td>
<td>3.38 0.63</td>
</tr>
<tr>
<td>15. Will improve my professional service to students, high school, and community</td>
<td>3.39 0.51</td>
<td>3.26 0.65</td>
<td>3.33 0.65</td>
</tr>
<tr>
<td>16. Colleagues from my high school did or would have improved my experience</td>
<td>3.62 0.65</td>
<td>3.00 0.77</td>
<td>3.31 0.77</td>
</tr>
<tr>
<td>17. Will help me reflect on the value of my professional responsibilities</td>
<td>3.46 0.52</td>
<td>3.16 0.76</td>
<td>3.31 0.76</td>
</tr>
<tr>
<td>18. I learned more about CRSA teacher training capabilities</td>
<td>3.31 0.63</td>
<td>3.28 0.75</td>
<td>3.30 0.75</td>
</tr>
</tbody>
</table>
Table 24. (Continued)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>1994 Group (n = 13)</th>
<th>1995 Group (n = 19)</th>
<th>Combined Groups (N = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
</tr>
<tr>
<td>19. Developed some new professional knowledge and/or skills</td>
<td>3.46</td>
<td>0.52</td>
<td>3.11</td>
</tr>
<tr>
<td>20. Stimulated me to improve my classroom routine</td>
<td>3.39</td>
<td>0.87</td>
<td>3.16</td>
</tr>
<tr>
<td>21. Will help me be more competent in my current job</td>
<td>3.54</td>
<td>0.66</td>
<td>3.00</td>
</tr>
<tr>
<td>22. Sharpened my perspective of my professional role or practice</td>
<td>3.46</td>
<td>0.52</td>
<td>3.00</td>
</tr>
<tr>
<td>23. I was stimulated by the ideas of my professional colleagues</td>
<td>3.54</td>
<td>0.52</td>
<td>2.89</td>
</tr>
<tr>
<td>24. Will improve my teaching skills</td>
<td>3.23</td>
<td>0.73</td>
<td>3.11</td>
</tr>
<tr>
<td>25. Helped me develop some leadership capabilities related to my work</td>
<td>3.08</td>
<td>0.64</td>
<td>2.78</td>
</tr>
<tr>
<td>26. Will increase my prestige</td>
<td>2.31</td>
<td>0.95</td>
<td>2.16</td>
</tr>
<tr>
<td>27. Will increase the likelihood for me to advance in my present work position</td>
<td>2.08</td>
<td>1.04</td>
<td>2.17</td>
</tr>
<tr>
<td>28. Will improve my potential salary level</td>
<td>1.58</td>
<td>0.67</td>
<td>1.47</td>
</tr>
</tbody>
</table>

(Scale: 1 = No/None 2 = Slightly 3 = Satisfactory 4 = Great)
overall. These same six benefits correspond highly with the greatest expectations the teachers held for participation in the workshop as seen in Table 23. These data further indicate that the teachers' expectations for professional development from participation in the program were met in response to Research Question 2.

Table 25. Benefits mentioned as being among the three "most important" on 1994 posttest (responses ranked by frequency of mention.)

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New updated knowledge</td>
<td>9</td>
<td>23.1%</td>
</tr>
<tr>
<td>Professional/teaching skills</td>
<td>8</td>
<td>20.5%</td>
</tr>
<tr>
<td>Community/national concerns</td>
<td>8</td>
<td>20.5%</td>
</tr>
<tr>
<td>New materials</td>
<td>5</td>
<td>12.8%</td>
</tr>
<tr>
<td>Interact/exchange ideas</td>
<td>5</td>
<td>12.8%</td>
</tr>
<tr>
<td>Adjust to changes</td>
<td>4</td>
<td>10.3%</td>
</tr>
<tr>
<td>Total (n=13 x 3)</td>
<td>39</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 26 presents data useful for more closely comparing the teachers' (pretest) expectations and reasons for workshop participation with their (posttest) perceptions of benefits derived. The 28 "expectations" are presented in the first column ordered from the greatest to the lowest combined group means. The "benefits" presented in the second column are aligned with corresponding expectations regardless of benefit means.
In reviewing these paired expectations and benefits it can be easily observed that 25 of the 28 expectations for the workshops were well met with group means significantly greater than 2.5. In eight of the comparisons the benefits derived from participating in the workshop were greater than expected. The teachers received more instructional materials than expected (item 14); received more information to share with colleagues (item 18); reviewed more their professional commitment (item 19); were much more pleased with having participated (item 22); were more stimulated to improve their classroom routine (item 25); were more greatly stimulated by the ideas of other participants (item 26); learned more about UCRSA's teacher training capabilities (item 27); and, very importantly, found that participation by colleagues from their same CTPs improved (or would have improved) their experience.

Note the last item (28) which both groups had indicated as being the least important reason/expectation for participating in the in-service programs receiving a combined mean of 1.58. In sharp contrast to this low "expectation" ranking was the highly rated "benefit" attributed by participants to this item (combined mean of 3.31). After the workshops, the majority of teachers indicated that colleagues from their CTPs improved the professional development experience for them. This was a significant change in perspectives. Participant comments to researcher indicated
Table 26. Comparison of the 1994 and 1995 teachers' expectations and reasons for participating in the workshops (pretest) with benefits derived (posttest)

<table>
<thead>
<tr>
<th>Expectations</th>
<th>1994 Group Mean (n = 13)</th>
<th>1995 Group Mean (n = 19)</th>
<th>Combined Means (n = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare myself to better meet changing emphases in professional responsibilities</td>
<td>3.92</td>
<td>3.84</td>
<td>3.88</td>
</tr>
<tr>
<td>2. Acquire new professional knowledge and skills</td>
<td>3.92</td>
<td>3.84</td>
<td>3.88</td>
</tr>
<tr>
<td>3. Increase my technical knowledge in order to help meet CTP curriculum demands</td>
<td>3.77</td>
<td>3.95</td>
<td>3.86</td>
</tr>
<tr>
<td>4. Help me increase the likelihood that my students are better served</td>
<td>3.77</td>
<td>3.95</td>
<td>3.86</td>
</tr>
<tr>
<td>5. Improve my professional service to my community</td>
<td>3.69</td>
<td>3.95</td>
<td>3.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits</th>
<th>1994 Group Mean (n = 13)</th>
<th>1995 Group Mean (n = 19)</th>
<th>Combined Means (n = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to contemplate changing emphases of my present professional responsibilities</td>
<td>3.62</td>
<td>3.17</td>
<td>3.40</td>
</tr>
<tr>
<td>Developed new professional knowledge and/or skills</td>
<td>3.46</td>
<td>3.11</td>
<td>3.29</td>
</tr>
<tr>
<td>Increased my technical knowledge to help meet CTP curriculum demands</td>
<td>3.62</td>
<td>3.16</td>
<td>3.39</td>
</tr>
<tr>
<td>Helped me increase the likelihood that my students are better served</td>
<td>3.54</td>
<td>3.26</td>
<td>3.40</td>
</tr>
<tr>
<td>Will improve my professional service to my community</td>
<td>3.46</td>
<td>3.32</td>
<td>3.39</td>
</tr>
<tr>
<td>Expectations</td>
<td>Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Help me keep abreast of new developments in my field</td>
<td>I became abreast of new developments in my field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Improve my teaching skills</td>
<td>Will improve my teaching skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Learn from the interaction with other professionals</td>
<td>Learned from interaction with other professionals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Be able to exchange ideas with other professionals in my field</td>
<td>Exchanged ideas with other professionals in my field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Improve my professional service to students, the CTP, and the community</td>
<td>Will improve my professional service to students, high school, and community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Maintain my current skills</td>
<td>Helped me maintain my current skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Improve my teaching abilities following current MEP guidelines</td>
<td>Improved my ability to follow current MEP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Help me be more competent in my current work</td>
<td>Will help me be more competent in my current job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Obtain new instructional materials for my courses</td>
<td>Obtained new teaching materials to take back to my classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Better meet requirements of my CTP</td>
<td>Will allow me to better meet the needs of my high school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Reflect upon the value of my professional responsibilities</td>
<td>Will help me reflect on the value of my professional responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Examine my professional role and practices</td>
<td>Sharpened my perspective of my professional role or practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Obtain information to share with my CTP colleagues</td>
<td>Obtained information to share with my high school colleagues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Review my commitment to my profession</td>
<td>Helped me review my commitment to my profession</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 26. (Continued)

<table>
<thead>
<tr>
<th>Expectations</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Help me acquire leadership capabilities in my profession</td>
<td>Helped me develop some leadership capabilities related to my work</td>
</tr>
<tr>
<td>21. Increase the likelihood of my advancement/promotion</td>
<td>Will increase the likelihood for me to advance in my present work position</td>
</tr>
<tr>
<td>22. I asked to attend</td>
<td>Degree to which I am pleased with my decision to attend</td>
</tr>
<tr>
<td>23. Increase my prestige</td>
<td>Will increase my prestige</td>
</tr>
<tr>
<td>24. Improve my salary</td>
<td>Will improve my potential salary level</td>
</tr>
<tr>
<td>25. Escape the ordinary classroom routine</td>
<td>Stimulated me to improve my classroom routine</td>
</tr>
<tr>
<td>26. Be challenged by the ideas of my colleagues</td>
<td>I was stimulated by the ideas of my professional colleagues</td>
</tr>
<tr>
<td>Expectations</td>
<td>Benefits</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>27. Curiosity about an in-service training program</td>
<td>I learned more about the UCRSA's teacher training capabilities</td>
</tr>
<tr>
<td>provided by UCRSA</td>
<td></td>
</tr>
<tr>
<td>1.94</td>
<td>2.09</td>
</tr>
<tr>
<td>2.23</td>
<td>3.31</td>
</tr>
<tr>
<td>28. I wanted to attend</td>
<td>Colleagues from my high school did or would have improved my experience</td>
</tr>
<tr>
<td>because colleagues from my CTP were attending</td>
<td></td>
</tr>
<tr>
<td>1.83</td>
<td>1.33</td>
</tr>
<tr>
<td>1.58</td>
<td>3.31</td>
</tr>
<tr>
<td>&quot;Expectations&quot; Scale:</td>
<td>&quot;Benefits&quot; Scale:</td>
</tr>
<tr>
<td>1 = Unimportant</td>
<td>1 = No/None</td>
</tr>
<tr>
<td>2 = Somewhat Important</td>
<td>2 = Slightly</td>
</tr>
<tr>
<td>3 = Important</td>
<td>3 = Satisfactory</td>
</tr>
<tr>
<td>4 = Very Important</td>
<td>4 = Great</td>
</tr>
</tbody>
</table>
that the CTP teachers have little chance or encouragement to
work with colleagues within their CTPs and practically never
interacted with CTP teachers at other high schools. As
participants worked together on lesson plans and developed
plans for information sharing back at their CTPs, it may bthat
they discovered an important professional development resource
in each other.

2. UCR, Atlantic Regional Center (UCRSA) expectations

Under the progressive leadership of Dr. Orlando Salazar
M., Director, and Ing. Carlos Calvo P., Sub-Director, it was
decided that UCRSA would make staff and the fine campus
facilities available for community outreach programs. The
decision to provide CTP agriculture teacher in-service
programs was in part a response to the UCR request that each
regional center develop a specialization based on their
capabilities and strengths.

Once the need for teacher in-service training was clearly
established in 1993, expectations of the UCR Commission, UCRSA
faculty and staff, and UCRSA administration were that they
would be able to provide "first class" professional
development programs to Costa Rican CTP agriculture teachers.

The core group that worked on developing an approach to
provide expected to establish an ongoing series of teacher in-
service training activities responsive to teacher needs. It
was envisioned that the seminars and workshops would be
provided through UCRSA on the Turrialba campus, at CTP campuses, and possibly at other UCR centers.

Professional development programs for CTP teachers were developed and implemented as expected through collaboration among UCRSA, MEP, the World Wildlife Fund, and ISU/CICET. Correspondence and documents pertaining to development and implementation expectations and evaluation can be found in Appendices A (development), C (implementation), and D (evaluation and follow-on activities). Noteworthy are letters in Appendix C written by Ing. Carlos Calvo P., Subdirector, UCRSA. In one letter, dated 5 de agosto de 1994, directed to the CTP teacher participants at the first (1994) workshop, he states "Months ago we identified the need to provide professional development to [CTP] teachers with the idea that the university could contribute, although in a modest way, to this in-service training." In his letter addressed to Mary de Baca, dated 26 de agosto de 1994, he stated "I am pleased to inform you that we have completed the [first workshop] which has been a great success." Further, a letter dated 19 de setiembre de 1994 (Appendix A) states that "The idea of making the In-service Professional Development program for CTP teachers permanent is based on conservations with the Ministry of Public Education, in the sense that UCRSA would become a CTP teacher professional development center...." The fact that UCRSA was satisfied with the workshops provided, wished to provide more, and wished to formalize this role and become a
training center through an agreement with MEP indicate that its expectations were met.

Data obtained through the posttest questionnaires provide additional support that UCRSA's expectation of developing a successful program was met. Teacher evaluations of methodologies employed for the first time in this new UCRSA program and their evaluations of UCRSA organized support logistics were important in determining both success and indicating future directions. Tables 27 through 32 present data on two important aspects of the workshops: the development of lesson plans and information dissemination plans. This data was not only useful for evaluating methodologies used, but are useful for selecting learning experiences and skills development in future similar workshops contemplated by UCRSA.

Table 27 presents data indicating the preferred amount of time to be devoted to lesson plan development. Most of the participants felt that the same amount of time or a somewhat greater amount of time should be devoted to this activity.

Table 28 presents data indicating how the teachers preferred to work on the development of lesson plans. Clearly, most (96.9%) preferred to work in groups of two to four. Workshop experience also showed that working together on such an activity was a novel activity-- one that the participants found enjoyable and highly productive. This type of activity should be continued in future in-service workshops.
### Table 27. Lesson plan development: Amount of time that should be spent (from 1994 and 1995 posttests)

<table>
<thead>
<tr>
<th>Amount of Time</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Less time</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>10.5%</td>
<td>12.5%</td>
</tr>
<tr>
<td>The same</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>52.6%</td>
<td>37.5%</td>
</tr>
<tr>
<td>More time</td>
<td>9</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>69.2%</td>
<td>31.6%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Much more time</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>5.3%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 28. Lesson plan development: Working preference (from 1994 & 1995 posttests)

<table>
<thead>
<tr>
<th>Choices</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Alone</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>0%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Group of 2-4</td>
<td>12</td>
<td>19</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>92.3%</td>
<td>100.0%</td>
<td>96.9%</td>
</tr>
<tr>
<td>Group of 5-8</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 29 presents data related to another of the workshop activities, the development of plans for the teachers to bring back workshop information and materials to share with colleagues at their CTPs that did not attend. The (pretest) data in Table 29 indicate that the teachers did not have successful methods to disseminate information at their CTPs.

Data presented in Table 30 indicate that prior to the 1994 workshop, the 1994 group of teachers were generally not accustomed to being asked to share information obtained through workshops or other in-service training programs with colleagues not attending that program. Just under one third responded that they had been asked to share information from other workshops they had attended previously.

Table 29. In the past, did you have a successful method to share information at your CTP? (from 1994 post-posttest)

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3</td>
<td>23.1%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>76.9%</td>
</tr>
<tr>
<td>Unsure</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 30. Prior to the UCRSA workshop, had teachers been asked to share information from other workshops? (from 1994 post-posttests)

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>30.8%</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>53.8%</td>
</tr>
<tr>
<td>Unsure</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 31 presents data indicating that, as with the lesson planning sessions, nearly all of the participants believed that the same amount of time or more time should be spent on this activity. However, there are significantly more teachers that believe a greater amount of time should be spent on this activity. This may reflect their unfamiliarity with this concept and experience. Note that none believed that less time should be spent on this activity.

Table 32 presents data indicating the teachers’ preferences for working on the development of plans for sharing workshop information and materials. The response was nearly unanimous that, again, the preferred method of working on the plans was in small groups of two to four participants. Only one participant indicated a preference for working alone.
Table 31. Sharing plan development: Amount of time that should be spent (from 1994 and 1995 post-posttests)

<table>
<thead>
<tr>
<th>Amount of time</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>None</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Less</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>5.3%</td>
<td>9.4%</td>
</tr>
<tr>
<td>The same</td>
<td>2</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>63.2%</td>
<td>43.8%</td>
</tr>
<tr>
<td>More</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>69.2%</td>
<td>26.3%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Much more</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>5.3%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 32. Sharing plan development: Working preference (from 1994 and 1995 post posttests)

<table>
<thead>
<tr>
<th>Choices</th>
<th>1994 Frequency</th>
<th>1995 Frequency</th>
<th>Combined Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Alone</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>0%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Group 2-4</td>
<td>11</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>84.6%</td>
<td>100%</td>
<td>93.8%</td>
</tr>
<tr>
<td>Group of 5-8</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>0%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 33 shows a summary of the 1994 and 1995 participant workshop logistics evaluations. A review of the workshop evaluations summary clearly indicates that UCRSA expectations that their staff and facilities could provide the human resources and logistical support needed for such programs were well met. The only item that received slightly less than a "good" rating was No. 6., "Duration of each work day." This item also has the highest standard deviation of the group of items. Review of participant comments indicates that while many participants felt the work day length was good to excellent, several participants would like to start the day earlier (7 a.m.) and end earlier (6 or 7 p.m.).

3. Ministry of Public Education (MEP) expectations

The Ministry of Public Education's Department of Technical Education, Agriculture Section's approval and support of the new approach to provide CTP teachers with in-service training were instrumental to its accomplishment. Without this department's interest in, and goodwill towards the exploration, development, and implementation of a unique in-service training for teachers under their jurisdiction, none of what was accomplished would have been possible. While MEP maintains a department responsible for providing teacher in-service training nationally (CIPET), the Director was willing to consider and support an additional approach to
<table>
<thead>
<tr>
<th>Aspect of Workshop</th>
<th>1994 Mean S.D.</th>
<th>1995 Mean S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant selection process</td>
<td>3.15 .56</td>
<td>3.39 1.24</td>
</tr>
<tr>
<td>2. Transportation provided by UCR-SDA</td>
<td>4.00 N/A</td>
<td>1.24</td>
</tr>
<tr>
<td>3. UCR-SDA (on campus) housing</td>
<td>3.92 .52</td>
<td>3.56 .51</td>
</tr>
<tr>
<td>4. UCR-SDA (on campus) meals</td>
<td>3.92 .28</td>
<td>3.78 .55</td>
</tr>
<tr>
<td>5. Meeting room/class facilities</td>
<td>3.69 .75</td>
<td>3.95 .23</td>
</tr>
<tr>
<td>6. Duration of each workshop day</td>
<td>3.46 .52</td>
<td>2.94 1.30</td>
</tr>
<tr>
<td>7. UCR-SDA support staff</td>
<td>3.92 .28</td>
<td>3.82 .39</td>
</tr>
<tr>
<td>8. Program speakers' level of competence</td>
<td>3.92 .28</td>
<td>3.00 .79</td>
</tr>
<tr>
<td>9. Program speakers' attitude during activities</td>
<td>3.92 .28</td>
<td>3.33 .69</td>
</tr>
<tr>
<td>10. Program speakers' responsiveness to participant questions.</td>
<td>3.83 .39</td>
<td>3.06 .56</td>
</tr>
<tr>
<td>11. UCR-SDA and ISU coordinators/facilitators level of competence</td>
<td>3.92 .28</td>
<td>3.83 .38</td>
</tr>
<tr>
<td>12. UCR-SDA and ISU coordinators/facilitators attitude during activities</td>
<td>3.90 .32</td>
<td>3.72 .46</td>
</tr>
<tr>
<td>13. UCR-SDA and ISU coordinators'/facilitators' responsiveness/ flexibility in meeting participant needs</td>
<td>3.84 .38</td>
<td>3.72 .46</td>
</tr>
</tbody>
</table>

(Scale: 1 = poor 2 = fair 3 = good 4 = excellent)
training teachers in-service. Nurturing a variety of approaches was described as a goal in the new Plan of Study for Technical Education in Costa Rica (Plan) (Ministerio de Educación Pública, 1992) and this was a fine example of a new cooperative approach.

The UCRSA was in communication with the Director of Technical Education throughout this endeavor and a National Advisor attended much of the first workshop in 1994 providing advice and giving a presentation to the participants on the new Plan of Study for Technical Education in Costa Rica.

After the first workshop was accomplished, the National Advisor submitted a written evaluation and report to the Director of the Technical Education Department (Appendix C). Observations were made and suggestions provided that will be discussed below. His August 25 report ended with the following statement:

The participating institutions are offered appreciation for this activity because it helps us to confront one of the most serious and relevant problems that technical education has which is the need for professional development and in-service training. (Appendix C)

Based upon the Advisor’s assessment of the 1st Workshop, approval was granted and additional partial funding was provided for continuation of the new UCR SDA outreach program in 1995.

Research Question 3

What impact did the professional development approach have on the CTP teacher participants?
The 1994 research design included a time series follow-up after the workshop to track participant opinions about responses to the content, methodology, and usefulness of this professional development program. After the posttest questionnaire was administered at the end of the 1st workshop, a post-post (7-10 days after Workshop) and a post-post-posttest (2 months after the Workshop) questionnaires were administered. Questionnaire items were designed to elicit data indicating the impact. The three areas that the follow-on research tracked were:

1. Impact of the information and materials provided
2. Impact of the lesson planning activities
3. Impact of the information dissemination (sharing) planning activities

The data corresponding to the three impact targets are presented under the same headings below. The third, impact of the information sharing and lesson plan development activities is also touched upon under the section "UCR, Atlantic Regional Center (UCRSA) expectations" beginning on page 113.

1. Impact of the information and materials provided

The data shown in Table 34 indicate that the participants did review the rather large amount of material that they were provided during the workshop. One could imply from these findings that provision of written materials to the teachers would be an effective means of providing them professional
Table 34. Responses indicating degree participants felt they had reviewed presentation material over time

<table>
<thead>
<tr>
<th>Topic</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Review</td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>1. Fundamentals of secondary education</td>
<td>9</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>81.8%</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>63.7%</td>
</tr>
<tr>
<td></td>
<td>--</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>--</td>
<td>36.4%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>2. Land use in watershed management</td>
<td>4</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>36.4%</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>45.5%</td>
<td>83.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>3. Protected areas and their sustainable development</td>
<td>6</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>54.5%</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>27.3%</td>
<td>58.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>4. Environmental protection concept and action</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>40.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>40.0%</td>
<td>41.7%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>20.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>5. Legislative aspects of environmental protection</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>72.7%</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>58.3%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 34. (Continued)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Degree of Review</th>
<th>Frequency After 7-10 days</th>
<th>Frequency After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. MEP: Discussion and materials</td>
<td>Not at all</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Some</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Sufficiently</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1%</td>
<td>66.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.2%</td>
<td>25.0%</td>
</tr>
<tr>
<td>7. Importance of the agricultural sector</td>
<td>Not at all</td>
<td>8</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Some</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Sufficiently</td>
<td>--</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80.0%</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.0%</td>
<td>83.3%</td>
</tr>
<tr>
<td>8. Structural adjustment programs</td>
<td>Not at all</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Some</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Sufficiently</td>
<td>--</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27.3%</td>
<td>50.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.2%</td>
<td>25.0%</td>
</tr>
<tr>
<td>9. Important aspects in the student-professor relationship</td>
<td>Not at all</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Some</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Sufficiently</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54.5%</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.2%</td>
<td>25.0%</td>
</tr>
<tr>
<td>10. Field trip to Guayabo</td>
<td>Not at all</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Some</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Sufficiently</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36.4%</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54.5%</td>
<td>50.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>
development information and resources (just as the teachers have been saying themselves all along!). Importantly, the teachers not only received materials at the workshop but began working with the new information right away as part of the professional development activities. Working with the new material developing lesson plans and plans for sharing the material with their colleagues, may have stimulated their apparent interest in making use of it.

Table 35 shows data indicating the degree to which participating teachers felt they were prepared to present (teach about) topics under the three technical content areas presented at the 1994 workshop. This same question was asked prior to the workshop (pretest) and twice afterward (post-posttest and post-post-posttests) to see if the invited specialists’s presentations appeared to have an impact on the teachers.

The topic areas which the teachers felt more prepared to teach about after the workshop include "protected areas and sustainable development" (A,2); concepts and action in environmental protection" (B,1); and "legislative aspects of environmental protection" (B,2). The workshop did stress environmental education as an overriding theme and this may account for greater confidence in teaching within this specific topic area. One topic, "structural adjustment and agriculture showed a reverse trend indicating that the teachers generally felt less confident to teach about this
Table 35. How well prepared the 1994 teachers felt they were to teach in the three technical content areas presented at the workshop.

<table>
<thead>
<tr>
<th>CONTENT AREA (A,B,C)</th>
<th>Topic</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree of Preparedness</td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>(A) SUSTAINABLE AGRICULTURE</td>
<td>1. Land use in watershed management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprepared</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>61.5%</td>
</tr>
<tr>
<td>Prepared-&gt; Better prepared</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>Well prepared-&gt; Much better prepared</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Protected areas and sustainable development

| Unprepared | 1 | 0 | 0 | 0.0% | 0.0% |
| Slightly prepared | 11 | 8 | 8 | 61.5% | 72.7% | |
| Prepared-> Better prepared | 1 | 3 | 3 | 7.7% | 23.1% | 27.3% | |
| Well prepared-> Much better prepared | 0 | 2 | 0 | 0.0% | 15.4% | 0.0% | |
| Total | 13 | 13 | 11 | 100% | 100% | 100% |
Table 35. (Continued)

<table>
<thead>
<tr>
<th>CONTENT AREA (A, B, C)</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Preparedness</td>
<td>Frequency Percent</td>
<td>Frequency Percent</td>
<td>Frequency Percent</td>
</tr>
<tr>
<td>(B) ENVIRONMENTAL PROTECTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Concepts and action in environmental protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprepared</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>69.2%</td>
<td>46.2%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Prepared-&gt; Better prepared</td>
<td>3</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>23.1%</td>
<td>23.1%</td>
<td>72.7%</td>
</tr>
<tr>
<td>Well prepared-&gt; Much better prepared</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>30.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Legislative aspects of environmental protection

| Unprepared | 7 | 0 | 1 |
|            | 58.3% | 0.0% | 9.1% |
| Slightly prepared | 5 | 9 | 7 |
|            | 41.7% | 69.2% | 63.6% |
| Prepared-> Better prepared | 0 | 3 | 3 |
|            | 0.0% | 23.1% | 27.3% |
| Well prepared-> Much better prepared | 0 | 1 | 0 |
|            | 0.0% | 7.7% | 0.0% |
| Total | 12 | 13 | 11 |
|        | 100% | 100% | 100% |
Table 35. (Continued)

<table>
<thead>
<tr>
<th>CONTENT AREA (A,B,C)</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>Degree of Preparedness</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>Before Workshop</td>
<td>After Workshop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(C) IMPORTANCE OF THE AGRICULTURAL SECTOR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Importance of the agricultural sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprepared</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>5</td>
<td>38.5%</td>
<td>6</td>
</tr>
<tr>
<td>Prepared-&gt; Better prepared</td>
<td>7</td>
<td>53.8%</td>
<td>2</td>
</tr>
<tr>
<td>Well prepared-&gt; Much better prepared</td>
<td>1</td>
<td>7.7%</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
<td>13</td>
</tr>
</tbody>
</table>

2. Structural adjustment and agriculture

| Unprepared            | 3              | 23.1%         | 1              | 7.7%          | 4              | 36.4%        |
| Slightly prepared    | 7              | 53.8%         | 7              | 53.8%         | 5              | 45.5%        |
| Prepared-> Better prepared | 2              | 15.4%         | 5              | 38.5%         | 2              | 18.2%        |
| Well prepared-> Much better prepared | 1              | 7.7%          | 0              | 0.0%          | 0              | 0.0%         |
| Total                | 13             | 100%          | 13             | 100%          | 11             | 100%         |
topic than before the workshop. This is a topic of great national concern. Only one workshop speaker specifically addressed this theme. One of the workshop speakers provided information and led discussion on the debt crisis in Costa Rica, structural re-adjustment, and possible short and long term consequences depending on actions taken. It may be that the more the teachers learned of the complexities involved or perhaps became more aware and frustrated about national problems they felt less in "command" of the subject than before.

Table 36 shows the degree to which participating teachers felt they were prepared to disseminate (share) information related to the topics under the three technical content areas presented at the 1994 workshop. This same question was asked prior to the workshop (pretest) and twice afterward (posttest and post-post-posttests) to see if the invited specialists’ presentations appeared have an impact on the teachers and plans for sharing workshop information and materials with colleagues back at their CTPs.

The data indicate that the teachers generally felt better prepared to share information about the workshop topics after participation. Again the data indicate that the teachers felt most prepared in the topics of "protected areas and sustainable development" (A,2); "concepts and action in environmental protection" (B,1); and "legislative aspects of environmental protection" (B,2).
Table 36. How well prepared the 1994 teachers felt they were to share information in the three technical content areas presented at the workshop.

<table>
<thead>
<tr>
<th>CONTENT AREA (A,B,C)</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree of Preparedness</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>(A) SUSTAINABLE AGRICULTURE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Land use in watershed management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprepared</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>30.8%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>61.5%</td>
<td>53.8%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Prepared-&gt; Better prepared</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>23.1%</td>
<td>58.3%</td>
</tr>
<tr>
<td>Well prepared-&gt; Much better prepared</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>23.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Protected areas and sustainable development

| Unprepared | 1 | 0 | 1 |
|            | 8.3% | 0.0% | 8.3% |
| Slightly prepared | 10 | 7 | 6 |
|            | 83.3% | 53.8% | 50.0% |
| Prepared-> Better prepared | 1 | 4 | 5 |
|            | 8.3% | 30.8% | 41.7% |
| Well prepared-> Much better prepared | 0 | 2 | 0 |
|            | 0.0% | 15.4% | 0.0% |
| Total | 12 | 13 | 12 |
|       | 100% | 100% | 100% |
Table 36. (Continued)

<table>
<thead>
<tr>
<th>CONTENT AREA (A,B,C)</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree of Preparedness</td>
<td>Frequency Percent</td>
<td>Frequency Percent</td>
</tr>
</tbody>
</table>

(B) ENVIRONMENTAL PROTECTION

1. Concepts and action in environmental protection

<table>
<thead>
<tr>
<th></th>
<th>Unprepared</th>
<th>Slightly prepared</th>
<th>Prepared-&gt; Better prepared</th>
<th>Well prepared-&gt; Much better prepared</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Prepared</td>
<td>0.0%</td>
<td>30.8%</td>
<td>46.2%</td>
<td>0.0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>16.7%</td>
<td>23.1%</td>
<td>0.0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Legislative aspects of environmental protection

<table>
<thead>
<tr>
<th></th>
<th>Unprepared</th>
<th>Slightly prepared</th>
<th>Prepared-&gt; Better prepared</th>
<th>Well prepared-&gt; Much better prepared</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Prepared</td>
<td>0.0%</td>
<td>61.5%</td>
<td>23.1%</td>
<td>15.4%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>46.2%</td>
<td>7.7%</td>
<td>7.7%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Total 13 13 12 100% 100% 100%
Table 36. (Continued)

<table>
<thead>
<tr>
<th>CONTENT AREA (A,B,C)</th>
<th>Before Workshop</th>
<th>After Workshop</th>
<th>2 Months After Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree of Preparedness</td>
<td>Frequency Percent</td>
<td>Frequency Percent</td>
</tr>
<tr>
<td>1. Importance of the agricultural sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprepared</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Slightly prepared</td>
<td>7</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>53.8%</td>
<td>38.5%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Prepared-&gt; Better prepared</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>30.8%</td>
<td>23.1%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Well prepared-&gt; Much better prepared</td>
<td>2</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>15.4%</td>
<td>38.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Structural adjustment and agriculture

| Unprepared | 5 | 1 | 4 |
|            | 41.7% | 8.3% | 33.3% |
| Slightly prepared | 6 | 6 | 6 |
|            | 50.0% | 50.0% | 50.0% |
| Prepared-> Better prepared | 1 | 3 | 2 |
|            | 8.3% | 25.0% | 16.7% |
| Well prepared-> Much better prepared | 0 | 2 | 0 |
|            | 0.0% | 16.7% | 0.0% |
| Total | 12 | 12 | 12 |
|            | 100% | 100% | 100% |
During analysis of the 1994 data, it was interesting to note that when the "number of years participants had taught high school" was compared with their responses regarding the "degree to which the workshop activities would improve my teaching skills," it appeared that the teachers with less experience benefitted more from the workshop. These data are presented in Table 37. While interesting to note, they were obtained from a small convenient sample. However, it would be worthwhile to further pursue this aspect of the findings.

Table 37. Perception of "teaching skills improvement" from having attended the workshop versus "number of years as a high school teacher" (1994 group)

| Degree teachers felt skills will improve after participating in workshop | Number years as high school teacher  |
|---|---|---|
| | 5-11 years | 12-24 years | Total |
| Slightly | 2 | 2 | 25% |
| Satisfactory | 1 | 5 | 6 | 20% | 65.5% |
| Greatly | 4 | 1 | 5 | 80% | 12.5% |
| Total | 5 | 8 | 13 |

from a small "convenient" sample. Similar results from a much larger sample could indicate that it would be beneficial to ensure that teachers are targeted for involvement in professional development experiences. It should be mentioned also that the researcher was told a number of times by
teachers in Costa Rica that the newer, less experienced teachers generally have less opportunities to be selected or approved for professional development than the older more experienced teachers.

2. Impact of the lesson planning activities

One of the workshop objectives was to provide practical experience developing lesson plans. The teachers were asked to work together in small groups of 3 to 4 following a lesson planning guide (Appendix B). Table 38 presents data indicating that all of the teachers found experience helpful to them.

Table 38. Development of lesson plans helpful (from 1994 post-posttests and post-post-posttests)

<table>
<thead>
<tr>
<th>Response</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 39 presents data on the number of lesson plans reviewed since the teachers returned to their CTPs. The data show that the teachers did review the lesson plans they developed in the workshop.
Table 39. The number of lesson plans reviewed since the end of the workshop (from 1994 post-posttests and post-post-posttests)

<table>
<thead>
<tr>
<th>Number of lesson plans reviewed (12 possible)</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>1-3</td>
<td>8</td>
<td>61.5%</td>
</tr>
<tr>
<td>4-6</td>
<td>3</td>
<td>23.1%</td>
</tr>
<tr>
<td>7-9</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>10-12</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 40 presents data on the number of lesson plans the teachers believe they will use over the next two years. Again the data indicate that the development of lesson plans was an activity that appears to have made an impact on the teachers.

Table 41 presents data regarding the number of lesson plans the workshop participants believe they will develop over the next two years using the materials they obtained from the workshop. Note that they do appear to be planing to use the materials and the skill practiced during the workshop program.

These findings indicate that the lesson plan development activities did make a positive impact on the participants. Not only did the participants indicate that they believed the lesson plan development sessions to be worthwhile on the
Table 40. Number of lesson plans teachers think they might use over the next 2 years (from 1994 post-posttests and post-post-posttests)

<table>
<thead>
<tr>
<th>Number of lessons plans (12 possible)</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>1-3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>7.7%</td>
<td>0%</td>
</tr>
<tr>
<td>4-6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>30.8%</td>
<td>30.8%</td>
</tr>
<tr>
<td>7-9</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>38.5%</td>
<td>38.5%</td>
</tr>
<tr>
<td>10-12</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>23.1%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Unsure</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 41. Number of teachers planning to develop more lesson plans over the next 2 years using materials from workshop (from 1994 post-posttests and post-post-posttests)

<table>
<thead>
<tr>
<th>Response</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>76.9%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23.1%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Unsure</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
posttest, but over a two month period of time, they indicated that the plans and skills developed were useful to them. If the teachers also shared the instructional materials they received and the skills they developed with their CTP colleagues that did not attend, the multiplier effect would be a very beneficial outcome.

3. Impact of the information dissemination (sharing) planning activities.

Table 42 presents data indicating whether the teachers participating in the 1994 workshop believed they had developed useful plans for sharing workshop information at their CTPs. Apparently they felt that they did. Note that as time went on, an increasing number of teachers (92%) felt believed so.

Table 42. Did teachers believe they have developed useful plans to share workshop information and materials at their CTPs (from 1994 post-posttests and post-post-posttests)?

<table>
<thead>
<tr>
<th>Response</th>
<th>After 7-10 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>23.1%</td>
<td>8%</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>76.9%</td>
<td>92%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Scale: Strongly agree, Agree, Slightly agree, Disagree
Table 43. How teachers planned to share workshop information and materials compared with how they shared them with colleagues at their CTPs (from 1994 post-posttests and post-post-posttests)

<table>
<thead>
<tr>
<th>Sharing Method</th>
<th>Planned After 7-10 days</th>
<th>Actual After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Activities/ Projects/</td>
<td>6</td>
<td>46.2%</td>
</tr>
<tr>
<td>Multiple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meetings/ Discussions/</td>
<td>4</td>
<td>30.8%</td>
</tr>
<tr>
<td>Talks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photocopies</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>to other teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave in library/</td>
<td>1</td>
<td>7.7%</td>
</tr>
<tr>
<td>Bulletins/ Notices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No plans (7-10 days)</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Not shared yet (2 months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

share information and materials obtained from participation in the workshop with how they actually did share them. Study findings indicated that the concept and actual undertaking of sharing information was not a familiar activity. Apparently a number of the teachers had made the effort to share workshop information and materials in a variety of ways.
CHAPTER V
SUMMARY, MAJOR FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to develop, implement, and evaluate an approach for the UCR Atlantic Regional Center to provide agriculture teachers in Costa Rican Professional Technical High Schools (CTPs) with professional development opportunities. An urgent need for in-service training programs for the CTP teachers had been recognized in earlier studies but was re-determined by the Ministry of Public Education when it proposed a new CTP curriculum (1992) and supported by the results of a national needs assessment conducted by UCR in 1993.

This study was initiated when a core group of UCRSA faculty and administrators decided to respond to this need through providing these teachers with in-service professional development programs. This UCRSA faculty "team" and the researcher, with support from a UDLP grant, began working together in 1993 to develop an approach for UCRSA to provide the professional development outreach ("social action"). The approach would be studied and evaluated from its conception through planning to implementation and, finally, impact and follow-up. It was hoped that a successful approach could be
developed so that UCRSA could provide similar future programs for other CTP agriculture teachers. The approach developed following the "rational model."

In order to best address the needs of currently practicing agriculture teachers, UCRSA decided to undertake the development and implementation of their first professional development workshop for CTP teachers in-service in 1994. Building on the first year's successful experience, a second workshop was subsequently provided in 1995.

In response to national concerns about a deteriorating environment, MEP's new curriculum, and the UCR Commission's assessment, technical topics selected for the workshop programs largely fit under a broader environmental education umbrella including such topics as environmental protection and sustainable agriculture. In addition, both in-service programs included pedagogic themes and practical applications.

Importantly, the environmental education theme allowed strategic partnering with the World Wildlife Fund which provided critical support for both of the workshops along with partial support from MEP and ISU/CICET. Collaborating with institutions/organizations that shared some of the same goals proved to be an important component of the approach.

Workshop methodology included the development of lesson plans for the teachers to (1) sharpen their skills and (2) for use in their courses when they returned to their CTPs. In addition, the teachers developed plans for sharing information
and materials obtained through participation in the workshops with their CTP colleagues.

The study involved a number of individuals and institutions. Especially important were the CTP agriculture teachers who participated in the implementation and evaluation phases of the study. The data they voluntarily provided were essential to measuring the success of the approach developed to address the need for professional development for CTP agriculture teachers.

Research findings are presented below under the three research questions:

**Research Question 1**

How can an approach to provide professional development for CTP agriculture teachers including pedagogy, sustainable agriculture, and an environmental education component be developed and implemented through UCRSA?

**Research Question 2**

Would the professional development approach developed and implemented meet the expectations of the participating CTP teachers and other stakeholders?

**Research Question 3**

What impact did the professional development approach have on the CTP teacher participants?

Findings were based on activities, correspondence, evaluations, reports, and other documents from UCRSA, MEP,
ISU (CICET/UDLP) and others (some of which can be found in Appendix A and Appendix D), and results from six questionnaires (Appendix C) administered to the two convenient sample groups of teachers over a two year period. The majority of research activity and data collection took place in the first year of the study, 1994.

Description of the participants

The 32 teachers participating in the study attended the two UCRSA professional development workshops in 1994 and 1995. They were mostly men (84.4%), nearly half (46.9%) were over 41 years of age, nearly all were married (87.5%), nearly two thirds (65.6%) had taught for 12 to 24 years, and most (81.2%) were classroom teachers while a small percent held multiple responsibilities. Most (90.6%) had a technical background and had not specialized in education but they reported feeling adequately prepared technically and pedagogically. Nearly a third (31.3%) had less than two years of post secondary education and slightly over one third (34.4%) had earned the title of "professor" with approximately three years of training. 21.9% had earned a four year bachelor degree while the remaining 12.5% had earned a licenciado degree. The thirty two teachers had earned their certificates and diplomas through more than seven institutions or combinations of institutions. Just over half reported being "very satisfied" with their occupation. The teachers were nearly unanimous (96.9%) in believing professional development programs to be
"very important" and that they should be offered about three to four times more in-service training programs than they are, on an average, presently attending.

Teacher assessment of workshop implementation and programs

Expectations

Of the 28 possible reasons and expectations the teachers held for participating in the workshops, both groups responded that benefits derived from participation met or surpassed most expectations. Of the 28 "expectations" 25 were met and 19 of the expectations were met with a combined group mean benefit rating of 3.49 (mean = 2.5). Workshop logistics (meals, housing, speakers, UCRSA coordinators, etc.) evaluation results from both years yielded unanimously favorable reports with the group means never falling below "good" to "excellent" ratings in either year. UCRSA had planned to make the in-service programs "high quality" professional experiences. The data clearly indicate that they succeeded.

Lesson plan development

The 1994 follow-up evaluations found that the teachers were unanimous (100%) in finding the workshop lesson plan development sessions to have been beneficial. Two months after the program, most reported having used about 4 to 6 of the 12 lesson plans developed. 100% reported that they were planning to use the workshop materials to develop additional lesson plans over the next two years.
Dissemination plans (sharing information and materials)

The teachers (1994) were nearly unanimous (92%) in their responses that they had developed useful plans to share workshop information and materials with their colleagues back at their home CTPs. However, it was discovered through this study that the concept of "teachers teaching teachers" was foreign to most of the participants and they initially struggled with the development of plans.

Impact on teachers

Each of the 1994 group teachers was visited by the researcher at their CTP worksite 7-10 days after the end of the workshop and was administered a post-posttest. Each was also provided a post-post-posttest which was administered two months after the end of the workshop and collected by UCRSA staff. These questionnaires were employed both to stimulate their continued interest in and use of the new information, materials, and skills. The teachers' responses clearly showed that they did review and planned to use the information and materials they were provided through the workshop.

When tracked over the two month period of time, the teachers' responses varied by topic on how well prepared they felt to teach in the different areas. Overall they did indicate that participating in the workshop had increased their perceived competence in teaching in the topic areas.

When teachers were asked about sharing information and materials with other teachers at their CTPs was tracked over
the two month period, responses also varied by topic on how well prepared the teachers felt to share them. While there was greater variation, their responses generally showed that they felt some increased sense of preparedness to share the information and materials with others after the workshop.

Overall, the data strongly indicate that the goals of meeting teacher expectations and providing a useful professional development experience for the CTP teachers was accomplished.

Major Findings, Implications, and Recommendations

Major research findings are presented below under the following three headings relating to the three research questions:
1. Development and implementation of the UCRSA approach
2. Expectations for the program
3. Evaluation, impact, and follow-on

1. Development and implementation of the UCRSA approach

Finding 1.1.

A successful approach for providing professional development for CTP agriculture teachers with an environmental education component was developed through the University of Costa Rica's Atlantic Regional Campus (UCRSA).

Implication 1.1.1. Similar professional development opportunities for CTP teachers should continue to be provided through UCRSA.
Recommendation 1.1.1.1. The Ministry of Public Education should encourage similar cooperative efforts partnering with the university in such a manner as to facilitate implementation in every way possible.

Recommendation 1.1.1.2. UCRSA should continue to build on its strengths (agricultural programs, interested capable faculty and staff, facilities, location, experience) to pursue this beneficial avenue of social action through:

1. partnering with MEP\CIPET (perhaps on a more formal basis to facilitate flow of communications and resources)

2. supporting a "team" of interested committed UCRSA faculty and staff charged with the responsibility to:

   a. communicate with Atlantic Region CTP directors and agriculture teachers on a consistent basis building a long term mutually beneficial relationship (on the premise that better prepared CTP agriculture teachers better prepare students many of whom become college students and that the community at large benefits from such interaction)

   b. coordinate with MEP

   c. seek partners with complementary interests and resources to assist with the provision of in-service programs after program themes and topics have been identified. (see recommendation #2 below)
(3) encouraging interested teams of faculty and staff to seek partners to assist the university to provide similar in-service programs for CTP teachers.

Implication 1.1.2 The "UCRSA Approach" merits consideration as a model to follow for providing further professional development opportunities for CTP teachers.

Recommendation 1.1.2.1 The model presented in Figure 5, developed as an outcome of this study, could serve as a useful guide for approaching the development of similar programs.

The model presents various aspects of the approach used by UCRSA to provide professional development opportunities for CTP agriculture teachers. The model is based on the "rational model" with the approach beginning with identification of needs, progressing through identification of goals, objectives, planning and program development, implementation, program, evaluation, and impact evaluation with the feedback loops indicated at the appropriate junctures.

Recommendation 1.1.2.2. The following steps were derived from the approach developed for UCR's Atlantic Regional Center to provide the 1994 and 1995 professional development programs. The steps conform closely to the rational model beginning with needs identification and tying program planning, implementation, and evaluation to the objectives. These steps could be used as a reference for guiding development of similar workshops for CTP teachers.
Figure 5. Model of the UCRSA approach.
STAGE I: Needs Identification/Clarification

1. Identify and clarify a presumed or articulated need
   (Example: MEP/CTP teachers request professional development program with a technical focus on pesticides)
2. Explore the need: why it exists, what's already being done about it (if anything), possibly why not addressed already, etc.
3. Consider possible means of meeting need

STAGE II: Institutional capability assessment to address need

1. Determine if meeting the need fits in with broader institutional goals
2. Determine level of interest, capabilities, strengths, resources and support available or potentially available to address need
3. Identify key individuals on campus that might have interest and capabilities to address the need
4. Form a team comprised of faculty, staff, and administrator to study possible role in and capability to address need
   a. identify goals
   b. determine and assign task(s)
   c. clarify steps leading to development of a pre-proposal

STAGE III: Feasibility study and pre-proposal

1. Team members meet with the following entities to determine best approaches to address needs
   a. MEP
   b. CTP directors and CTP agriculture Program Coordinators
c. CTP teachers

d. possible program partners/ funding sources

2. Team develops a program pre-proposal for institution to address
   
   a. clarify need
   b. identify broad goal(s)
   c. identify specific objectives
   d. identify strengths
   e. determine action timeframe
   f. explore program structure
      (1) content
      (2) methodology
      (3) support logistics
   g. Identify university faculty and staff to be involved in program implementation
   h. develop implementation plan
      (1) timetable
      (2) responsibilities
      (3) program parameters
      (4) after program wrap-up
   i. develop evaluation plan
   j. development a follow-on/follow-up plan
   k. determine resources needed based on program content
      (1) identify possible speakers & alternatives
      (2) identify and locate materials needed & alternatives
(3) identify lab, media, field, equipment needs—locate and reserve

l. develop a tentative budget

m. identify possible partners, cooperators, resources to help in providing a program (other)

3. Team presents pre-proposal to university administrator/Director

   a. pre-proposal is accepted—forwarded to MEP -> Stage IV

   b. pre-proposal is modified—forwarded to MEP -> Stage IV

   c. pre-proposal is rejected

STAGE IV: Pre-program Arrangements

1. Pre-proposal is modified as necessary and becomes program planning guide (steps 2 a. through m. are reviewed and acted upon as appropriate)

2. Program funding is secured

3. Participant selection criteria is determined

4. Participant application forms are developed

5. MEP/CTP directors and agriculture program coordinators are contacted and asked to identify potential participants

6. Participant application forms (with an overview of program) are sent to CTPs with a due date for consideration

7. Agriculture teacher participant applications are reviewed and potential participants and alternates are identified

8. Program speakers/implementors are contacted and tentative commitments made

9. Develop an orientation plan for arrival of teacher
STAGE V: Program planning and development

1. Develop a pre-implementation check-list (trouble shooting)
2. Prepare a post-program check-list (wrap-up)
3. Program speakers/implementors are contacted and final commitments made
4. Selected workshop participants (alternates) sent formal invitations
5. CTP directors advised of teachers selected and final arrangements-- program, dates, etc.

STAGE VI: Pre-implementation

1. Review pre-program check-list to ensure all necessary arrangements have been made and actions have been taken
2. Finalize all arrangements
   a. contact program speakers/implementors to remind
   b. review logistical arrangements-- troubleshoot
   c. selected workshop participants/alternates and their CTP Directors are sent reminders

STAGE VII: Program is implemented

1. Participants are welcomed and provided orientation
2. Introduction includes:
   a. Purpose (goals & objectives)
   b. Program overview
      (1) content
      (2) methodology
      (3) expected outcomes
3. Program evaluation
4. Closing
5. Participant departure

**STAGE VIII: Program wrap-up activities**

1. Clean up
2. Make sure any remaining payments are made
3. Final record keeping
4. Review of evaluations
5. Program staff de-briefing
6. Recognition of contributions made by those involved
7. Final report(s): Program and Financial

**STAGE IX: Program impact: evaluation and follow-on activities**

1. Program impact evaluation
2. Evaluation findings used in designing future programs
3. Follow-on activities undertaken to stimulate application

**Recommendation 1.1.2.3.** Partner organizations should be actively sought to help accomplish mutual goals and for help with defraying the costs of the workshops. (The 5 day workshop in 1994 had out of pocket costs of approximately $3,500 which covered housing, meals, transportation, materials, supplies, photocopies, and minimal stipends for speakers.) Partnering with the World Wildlife Fund provided both excellent materials and a fine program presenter and partially funded the two workshops. Partners with complimentary interests may serve as the necessary sources of partial program funding when MEP and universities and CTP budgets have very little or no funds available to help defray in-service training costs.
2. Expectations for the program

Finding 2.1.

The professional development programs provided CTP agriculture teachers by UCRSA clearly met the teachers' expectations and the expectations of other stakeholders including UCR, MEP, ISU/CICET, and WWF.

Implication 2.1.1. Similar programs could be provided following the UCRSA model that could also meet CTP teacher and other stakeholder expectations.

Recommendation 2.1.1.1. It is recommended that similar programs continue to be provided CTP teachers in the Atlantic Region and nationally. Teachers could either travel to UCRSA or similar programs following the UCRSA model could be [carefully] developed at other UCR regional centers.

3. Evaluation, impact, and follow-on

Finding 3.1.

Research findings indicate that the CTP teachers were positively impacted by participating in the workshops. The teachers consistently reported that:

(1) the information and materials were important to them and that they continued to reviewed the materials over time;

(2) the development of lesson plans was very helpful and immediately useful to them;

(3) the development of plans to disseminate (share) workshop information and materials with colleagues at their home CTPs was helpful to them.
Implication 3.1. Providing educational materials to teachers is an important component of professional development programs. Program time spent on the development of lesson plans and information dissemination plans -- especially focusing on process-- are important program components.

Recommendation 3.1.1. Professional development programs for CTP teachers should provide:

(1) as much pertinent material as possible for distribution to the participants-- indications are that it will be used and possibly shared with other teachers at the home CTPs;

(2) sessions on the development of lesson plans and time allotted to develop complete plans;

(3) sessions on the development of plans to disseminate (share) workshop information and materials at participants home CTPs and time allotted to develop plans. This was a challenging endeavor and should be approached as constructively as possible.

Recommendations for Further Study

Based on the findings of this study, the following recommendations are made:

1. The University of Costa Rica's Atlantic Regional Center has developed, implemented and tested a successful approach for providing professional development outreach to a limited number of agriculture teachers at working at some of
the nation's 51 Professional Technical High Schools. Continuing such outreach through UCRSA should be encouraged at
and the results studied to ensure that this approach model is
fully developed, tested and refined. The results should be
written up as a guideline for future professional development
programs in Costa Rica and perhaps in other similar countries.

2. This approach merits consideration for replication at
others of the University of Costa Rica's regional centers. The
Ministry of Education could enable other campuses to learn
from the experience obtained through UCRSA's approach to
providing professional development opportunities to the
hundreds of agriculture teachers at the nation's 51
Professional Technical High Schools.

3. Indications were that post workshop follow-up with
the teachers was beneficial. It is highly recommended that a
study be developed examining the role follow-on after
professional development programs are provided participants.

4. One of the greatest challenges facing the CTP teachers
appeared to be transferring information and materials to other
teachers. The researcher believes that pursuing avenues of
information transfer to disseminate new information, skills,
and materials (multiplier effect) is essential.
APPENDIX A

DEVELOPMENT OF THE APPROACH AND PROGRAM

DEVELOPMENT: NEEDS, GOALS, STRATEGY
DATE: March 28, 1991
TO: H. R. Crawford
FROM: David L. Williams
RE: Costa Rica Strengthening Grant Proposal

Some ideas for the grant follows:

**Objective:** To develop an Agricultural Education Curriculum at the University of Costa Rica at Turrialba

**Activities:**

1. Develop a mission statement and guiding principles for the Curriculum.

2. Assess existing university course offerings that would support the Curriculum.

3. Identify additional courses and pre-professional experiences needed for the Curriculum.

4. Develop the content for the additional courses and pre-professional experiences.

5. Identify resources (faculty, facilities, equipment, etc.) needed to implement the curriculum.

Other objectives relating to Agricultural and Extension Education may include:

1. Reforming the agriculture curriculum in high schools

2. Updating high school agriculture teachers

3. Developing agricultural and extension education courses to support existing curricula in the College of Agriculture, University of Costa Rica, San Jose. (I believe Miley and Roberto are interested in this.)

Thanks
Report Resulting from
A Partnership Approach for
International Development
Seminar-Study Tour
in
Costa Rica
March 10-12, 1992
by
David L. Williams, Professor and Head
Agricultural Education and Studies
Iowa State University

My report will be divided into two parts that parallel the objectives of the seminar-study tour: (1) observations for enhancing rural community development and eco-restoration in Costa Rica and (2) suggestions for the UDLP Plan.

Observations for Enhancing Rural Communities and Eco-restoration in Costa Rica

The following observations for enhancing rural communities and eco-restoration in Costa Rica are based on what I heard and saw during the seminar-study tour:

1. Communities in Costa Rica are ready for aggressive development. The basic infrastructure is in place to support innovative development initiatives.
2. The need is great to sustain the quality and quantity of natural resources (soil, water, forest and wildlife) as economic and social development occur.
3. Agriculture is the heart of the Costa Rica economy. Development initiatives should focus on both the quality and quantity of agricultural production.
4. Schools have the potential to serve as a "change agent" in rural communities - this is especially true in the area of eco-restoration in Costa Rica.
5. Education has a major role to play in solving rural poverty problems.
6. Individuals in Costa Rica recognize their needs and have the desire to improve their quality of life.
7. Development of individual communities is the key to Costa Rica development.
8. Communities need help in organizing needs assessment, setting priorities, and mobilizing resources to reach goals.
9. Leadership development should be included in community development initiatives.
10. Communities need help in formulating strategies to involve local people in community action programs.
11. Farmer cooperatives have the potential to play an important role in rural community development.

**Suggestions for UDLP Plan**

The following suggestions for the UDLP plan are based on my observations during the seminar-study tour: (My suggestions will focus on education and agricultural education.)

1. The teacher is the key to quality education. The curriculum in local schools can be upgraded by improving the training of new teachers and experienced teachers. Inservice education for experienced teachers is a short-term strategy for improving education. Improved new teacher preparation is needed to sustain progress.

2. The school curriculum should be based on community needs and priorities, allowing schools to work in concert with other organizations in community development. Thus, UDLP pilot rural community development efforts should involve local schools.

3. The infusing of a community action environmental education program into the elementary school curriculum could serve as an eco-restoration strategy in rural community development.

4. Local farmer cooperatives could serve as an organizational vehicle for adult farmer and young farmer educational programs. The programs could focus on rural leadership development as well as agricultural production, processing, and marketing.

5. Local farmer cooperatives also have the potential for helping develop future farmers and rural leadership. The establishment of a junior (youth) board of directors for local cooperatives would be one possibility. Another may be to work in cooperation with 4-H and local agriculture high schools.

6. The 52 agriculture high schools in Costa Rica have the potential to contribute in a significant way to rural community development. With properly trained teachers and curriculum, these schools could prepare dynamic future farmers and rural community leaders. Perhaps three to five of these schools could be involved in establishing an educational program on sustainable agriculture in cooperation with CATTIE. Then, the agriculture teachers in these schools could be the trainers for other agriculture teachers. (Thus using the train the trainer educational program.)

7. Considering the concept of basing the school curriculum on needs of the local community, consideration should be given to developing specialized agriculture programs in some of the 52 agriculture high schools. For example in a community where forestry is a major enterprise, the agriculture program could focus on forestry management, including marketing and reforestation. Others schools could focus on agribusiness (utilizing a partnership with local farmer cooperative), vegetable/fruit production, processing and marketing, etc.

8. Agriculture extension service has the potential to make a major contribution to agriculture development and therefore to rural community development. Thus, ways and means to involve extension in rural development initiatives should be considered. A long range goal should be to study the staff development needs of agriculture extension workers and design programs to meet the needs. The ultimate goal would be to develop a university program to prepare agriculture extension workers that included experiences in planning programs, teaching and evaluating programs. This could be
accomplished by adding a few courses to existing programs in the College of Agriculture at the University of Costa Rica.

9. Another long-range goal should be the establishment of a preservice program and an inservice program for agriculture teachers. The Turrialba campus has the potential and interest in doing this.

In summary, there are great implications for education and agricultural education in the UDLP plan. Vocational agriculture in secondary schools and agricultural extension have made major contributions to agricultural and rural development in the U.S. Elements of these programs could be modified and transported to Costa Rica. Some of the new initiatives in environmental education related to agriculture and sustainable agriculture that the Department of Agricultural Education and Studies is involved in may be relevant to Costa Rica. One of our initiatives was recently funded by the ISU Leopold Center for Sustainable Agriculture. We will soon have an example of new sustainable agriculture technologies being transferred from a research center of excellence through Iowa secondary school agriculture programs to youth and adults.

Thanks for the opportunity to participate in the 1992 Costa Rica seminar-study tour. I hope my observations and input may help in some small way.
Creation of a Curriculum for Agricultural Education and Extension at the Atlantic Branch of the University of Costa Rica

Proposers: Ing. Margarita Meseguer Q.
MSc Economista Agrícola

Ing. Carlos Eduardo Calvo P.
Fitotecnia, Entomología

Licda. Leda Velázquez Vargas
Ciencias políticas

Ing. David Hines Alvarado, MSc
Extensión Agrícola

Licda Ana Cecilia Ortiz M.
Extensión Agrícola

The mind-boggling changes in the economic, social and political environment that have been generated worldwide during the last few decades create a regional need in Central America to adapt its structures to the world demands.

Within this mark of reference, in the last few years there has developed a gap between the generation of new knowledge and that of producers.

The professional which would be developed with this curriculum would have the obligation of filling this knowledge gap.

The curriculum for developing this professional, besides its academic orientation toward agricultural production, should attend to or contain principles related to:

- New political economies or changes which have been applied in the region to improve productive structure.
- Modernization of state.
- The changes in the agricultural sector institutions which relate to traditional activities in the rural sector and other productive sectors of the country.
- Restructuration of capital.
- Transformation of the financial system.
- The demand for democratic participation which signifies access to resources by the population, managerial development and decision making at the local and regional levels.

In view of the previous, the objective of this proposal is to generate new academic application in the area of agricultural education and extension which will permit development of professionals capable of functioning with success as agents of change in the process of agricultural development within the framework of sustainability.

This project is proposed as one of the efforts of an interdisciplinary integrated group in the areas of agricultural extension, education, plant breeding, political science, anthropology, sociology, and agricultural economics.
IV. Persons visited (including title and organizational affiliation):

Dr. Orlando Salazar, Director of UCR
Ing. David Hine, UCR professor
Ing. Margarita Meseguer, UCR professor
Ing. Carlos Calvo, UCR professor
Licda. Leda Vasquez, UCR professor
(members of ag ed and extension proposal team)

Dr. Luis Garita, Rector, UCR
Ing. Gonzalo Bonila
Lic. Carlos Jimenez
Ing. Augusto Bourillon
Dr. Henry Murillo
(all but Garita on the UCR Animal Science Department proposal team)
Various UCR faculty members

Lic. Estefano Arias, Director of the La Suiza Agricultural High School
William Barletto, La Suiza instructor and other instructors
Ing. Carlos Cruz, administrator at the Diversificación Agrícola de Turrialba
Dr. Rebecca Brown, ag ed professor, E.A.R.T.H.
Ing. Xenia Ceville, ag ed professor, E.A.R.T.H.
Dr. Jim French, Subdirector, E.A.R.T.H.
Administrator, Ministry of Agriculture
Agriculture loan officer, National Bank
Administrator, coffee marketing organization

V. Attach copies of actual itinerary, programs, participant lists, and materials generated for the event in which you were involved.
Dr. Harold Crawford
Director
International Programs of Iowa State University

Dear sir:

In the visit made by you to this Branch in November, 1992, to analyze the possibility to create the Career in Education and Agricultural Extension, you have the courtesy to invite us to visit Iowa State University in March/April of this year.

We have decided that Prof. Carlos Calvo and David Hine be the persons who will make such important visit, which is of the knowledge of the President (Dr. Garita). However, they need an official invitation from ISU offering them board and meals to initiate proceedings of permission to the University Council.

By the other hand, I would like to tell you our satisfaction for the visit of Prof. Lynne Brookes, Randy Killorn and Joe Dale, with whom we worked vigorously in the proposal we will present on July 1st.

I consider that with your valuable support, we can achieve to reach our project: the creation of the Career in Education and Agricultural Extension in Turrialba.

Sincerely yours,

Dr. Orlando Salazar Mora
Director
Atlantic Branch - U.C.R.
Señor
Dr. Harold Crawford
Director
Programas Internacionales de
la Universidad de IOWA

Estimado señor:

En la visita que usted realizó a esta Sede en el mes de noviembre del año pasado, para analizar la posibilidad de crear la Carrera de Educación y Extensión Agrícola, usted tuvo la gentiliza de invitarnos a visitar la Universidad de IOWA en marzo o abril de este año.

Nosotros hemos decidido que los profesores Carlos Calvo y David Hine sean quienes tengan el honor de realizar tan importante visita, lo cual es del conocimiento del señor Rector. Sin embargo, para iniciar los trámites ante el Consejo Universitario, ellos necesitan la invitación oficial de la Universidad de IOWA ofreciéndoles hospedaje y alimentación.

Por otra parte le manifiesto nuestra gran satisfacción por la visita de los profesores Lynne Brookes, Randy Killorn y Jose Dale, con quienes trabajamos arduamente en la propuesta que presentaremos el 12 de julio.

Considero que con su valioso apoyo podremos lograr la realización de nuestro proyecto: la creación de la Carrera de Educación y Extensión Agrícola en Turrialba.

Le saluda con toda consideración.

Dr. Orlando Salazar Marcial
Director
Sede del Atlántico

asp.

cc: Ing. Carlos Calvo P.
Ing. David Hine A.
Archivo
June 23, 1993

Ing. David Hine
Ing. Carlos Calvo
University of Costa Rica
Atlantic Branch Campus
Turrialba, Costa Rica
Fax: 506-56-03-18

Dear David and Carlos:

We are very pleased to invite you to visit Iowa State University during July of this year. We would like to suggest the arrival date of July 20th and departure date of July 30th. Please let us know if this is a convenient time period for you.

I understand that while you are here you will be meeting with agriculture education and extension faculty members and developing a curriculum plan for an agriculture education and extension program at the University of Costa Rica, S.R.A. Lynne Brookes and others are developing an itinerary for your work at Iowa State University. A copy will be sent for your review prior to your departure from Costa Rica.

We will be happy to arrange for your lodging and provide per diem to cover living costs during your stay in Ames.

Your visit here will allow for further development of your agriculture and extension education proposal as well as continuing discussions on assessing the needs for training secondary school agriculture education professionals in Costa Rica.

We look forward to your visit and wish to express our ongoing commitment to exploring the development of an agriculture education and extension program at the University of Costa Rica, S.R.A.

Sincerely,

Mary M. de Baca
Associate Director
International Agriculture Programs

cc: Lynne Brookes
    Harold Crawford
    Roberto Gonzalez
    Orlando Salazar

Fax ed 6/30/93 pm
Turrialba, 27 de octubre de 1993

Señora
Lynne Brookes
International Agriculture Programs
6 Curtis Hall
Iowa State University

Estimada Lynne:

Recibe cordiales saludos desde Turrialba de toda la gente que te recuerda y que te aprecia.

Hemos recibido tus noticias (llamada y fax) y por supuesto que estamos totalmente de acuerdo en seguir realizando actividades en conjunto.

De mi parte desde el 9 de octubre estoy tratando de comunicarme contigo vía INTERNET Y BITNET, usando el correo electrónico de Daniel Sherrard. La semana pasada hemos tenido en Congreso Agronómico Nacional y hablando con James French de EARTH me dijo que Daniel estaba en Costa Rica y que por esa razón aún no he tenido contacto con ustedes. Ahora tenemos BITNET en Turrialba y para nosotros es mucho más fácil comunicarnos con ustedes por esa vía, que por Fax. Cuando dejamos Iowa Mary de Bacca me dio un número de INTERNET en su oficina pero yo no lo encuentro. Mi dirección en BITNET es CARLOSCUCRM2, y quisiera me enviara en tuyo sea por el mismo e-mail o por fax para tener un contacto más directo.

Por otro lado y en respuesta a tu fax del 18 de octubre, por supuesto que estamos muy interesados en los talleres del próximo año. Yo personalmente he estado en contacto con diversas autoridades del sector de la enseñanza agropecuaria y ellos se ha mostrado muy interesados. Y procedo a contestar tus preguntas

1 y 2- Si tenemos interés en el taller, la fecha de realización tendremos que definirla en conjunto con los colegios, directores y profesores, pienso que sería posible a finales de febrero, pero no conozco el detalle de que hacen los profesores una semana antes de inicio de clase, ¿tal vez están en preparativos del nuevo curso? Como estamos
visiting los colegios tendremos que tener unas visitas más para poder aclarar lo de la fecha.

3 - Necesitaríamos tus buenos oficios para la búsqueda de los fondos para los talleres. Nosotros podemos aportar los que hemos dicho: Residencias, transporte para giras de estudio, y toda la infraestructura de la Sede y el apoyo logístico.

4- Per capita la estadía de una persona en Turrialba por día es alrededor de US$30.00 incluyendo tres comidas y alojamiento que podría disminuir si los hospedamos en la residencias estudiantiles nuestras.

5- Tenemos un bus disponible y podríamos cubrir los gastos como aporte nuestro

6- El costo de transporte para un participante desde su lugar de origen a Turrialba sería de uno US$10.00

Lynne, si tenemos la oportunidad de tener varios conferencista buenos, sugiero que el taller se realice en una semana, sea cinco días.

Creo que esta es apenas las primeras ideas del taller, creo que por Bitnet la comunicación será más ágil y rápida.

Espero que esta información satisfaga tus necesidades me pongo a su disposición, para seguir trabajando en conjunto.
Salgo con mis estudiantes de gira a Guanacaste el jueves y viernes, si tengo un e-mail tuyo el lunes o martes te envío uno.

Saludos de parte de Lidia y un abrazo de nuestra parte

Hasta pronto

Carlos Eduardo Calvo
Mr. Ing. Adolfo Soto
Dean
Agronomy School
University of Costa Rica

Dear sir,

As you know, at the Atlantic Campus we are very interested in taking action in Education and Agriculture Extension.

That is why we are currently organizing a workshop for updating 30 teachers of Professional and Technical Schools about topics of Sustainable Development and Protection of Natural Resources, which will take place in our campus from next July 18 to July 22.

This activity fits within the Agreement of Cooperation of the Program of University Linkage, UDLP, between the UCR and ISU, through CICET, funded by AID.

We have collaborated with them in the past in other projects, among them:

-The participation of Ing. Carlos Calvo Pineda and M.S. Margarita Meseguer, in the workshop for the elaboration of proposals in March ’93.

-Visit of Ing. David Hine and Ing. Carlos Calvo to I.S.U. to study the curricula of Extension and Agriculture education, with participation of I.S.U. professors.

-Advising by Ms. Lynne Brookes in Agriculture Education and Extension.

Very sincerely,

Dr. Orlando Salazar Mora
Director
Atlantic Campus
Señor
Ing. Adolfo Soto
Decano
Facultad de Agronomía
Universidad de Costa Rica

Estimado señor:

Como es de su conocimiento en la Sede del Atlántico estamos muy interesados en tener acciones en Educación y Extensión Agrícola.

Es por eso que actualmente estamos organizando un Taller de Actualización dirigido a 30 profesores de Colegios Técnicos Profesionales, en temas de Desarrollo Sostenible y Protección de Recursos Naturales, que se realizará en nuestro campus del 18 al 22 de julio próximo.

Esta actividad se enmarca dentro del Convenio de Cooperación del Programa de Enlace Universitario UDLP, entre la UCR y I.S.U. por medio del CICET, con fondos del AID.

Con ellos hemos realizado varios trabajos en conjunto, entre los que se destacan.

- La participación del Ing. Carlos Calvo Pineda y la M.Sc. Margarita Meseguer, en el taller de elaboración de propuestas de marzo 93.

- Visita del Ing. David Hine y del Ing. Carlos Calvo a I.S.U. para estudiar los currículos de Extensión y Educación Agrícola con la participación de catedráticos de I.S.U.

- Asesoría de la señora Lynne Brookes en Educación y Extensión Agrícola.

Le saluda con toda consideración.

asp.

cc: Dr. Harold Crawford
    CICET
    Ing. Carlos Calvo P.
    Archivo
DATE: July 27, 1994
TO: Carlos Calvo  
    fax: 506-556-7020
FROM: Mary M. de Baca

Best wishes on the upcoming workshop on environmental education for teachers of the agriculture high schools. I hope things go well during the August 8-12 workshop and in the follow up with the teachers. Lynne is eager to contribute and participate in the workshop.

Lynne will bring with her an application form for University Development Linkage Project (UDLP) funding for the year beginning October 1, 1994 to September 30, 1995. Your project has actually received UDLP funding as a result of Dean Adolfo Soto's original request with acknowledgment by the Consejo that extension and agricultural education in the Atlantic Branch Campus was a high priority.

Earlier, I mentioned to you that the request for continued collaboration should come through the Facultad de Agronomía, but I feel that you and others involved at Turrialba need to provide the material to Dean Soto. The Facultad de Agronomía may add other activities to their total request.

If you have questions, please discuss them with Lynne or contact me directly. The application is due at the CICET office in Costa Rica or at ISU by September 1 (no late requests will be accepted).

MdB:sn

cc: Adolfo Soto
    Orlando Salazar
    Harold Crawford
    Roberto Gonzalez
    Lynne Brookes
Señora
Mary M. de Baca
Oficina de Ciencia y Tecnología
Universidad Estatal de Iowa
Estados Unidos

Estimada Mary:

Me permito enviarle por fax/atrón nuevamente lo que le envíe el viernes 16 por correo electrónico.

1.- La idea de hacer del programa de Capacitación en Servicio de los profesores de los CTP un programa permanente, se basa en conversaciones con el Ministerio de Educación Pública, en el sentido de que la Sede del Atlántico, se convierta en un centro de capacitación de profesores CTP, financiado por recursos propios del MEP, y los que podamos conseguir al conjunto (MEP-UCR) con recursos externos. Creemos que al final de los cuatro talleres tendremos mayor credibilidad del Ministerio de Educación Pública, para contar con un apoyo financiero mayor.

2.- Las evaluaciones de los talleres se harán por medio de visitas a los colegios, aplicando cuestionarios a los profesores participantes, no participantes, directores y alumnos sobre el nivel de las clases. Además los profesores de la Carrera de Educación de la Sede medirán el impacto alcanzado y nivel de las clases.

3.- Consideramos que los temas de educación ambiental se podrán medir a nivel de los estudiantes y de los profesores capacitados. Dado que a nivel de la Comunidad es muy poco el periodo de tiempo un año para poder evaluar resultados a ese nivel. El indicador de impacto alcanzado serán los resultados de los cuestionarios a los estudiantes.

4.- Yo estaré encargado de todas las fases del proyecto. Como coordinador del equipo en la Sede. Integrando también a Margarita Meseguer y a Ana C. Tapia. Margarita se encargará de la parte
Sra. Mary de Baca
19-9-94
Página 2.

presupuestaria y conferenciadas y Ana C. Tapia en selección de participantes y relacione con el Ministerio de Educación Pública.

5.- Estamos considerando la participación además de Lynne del Dr. Lynn Jones, quien tiene mucha experiencia en el campo y ha trabajado en América Latina. Otros podrán ser seleccionados por ustedes.

6.- a) Si estamos de acuerdo con la propuesta de Lynne Brookes.
   b) También estamos de acuerdo en incluir esa contraparte.

7.- Es muy difícil rebajar este presupuesto, dado que este es pequeño en gastos operativos. Analizando la propuesta consideramos que lo más que podemos reducir es mil dólares en material impreso. Considerando que deberíamos negociar con el Ministerio de Educación Pública para financiar ese faltante. Consideramos que no debemos eliminar un taller porque los cuatro son importantes.

Agradezco la atención a la presente, me suscribo,

Atentamente,

Carlos E. Calvo Fineda
Coordinador
Carrera de Agronomía

[ firma ]
ACTIVITIES FOR UDLN VISITING PROFESSORS
FROM THE SEDE DEL ATLANTICO, UNIVERSIDAD DE COSTA RICA

ANA TAPIA (Plant pathology) and
MARGARITA MESEGUER (Crop production systems/Ag. Econ./Stats)

International Agriculture Programs
Iowa State University
6 February to 3 March 1995

Background: Both are professors at the University of Costa Rica campus located in Turrialba. They have been working with ISU faculty and staff for the last two years as part of the USAID funded University Development Linkage program.

Following are the areas of focus as translated from profs. Meseguer's and Tapia's initial programmatic request:

General Objectives: (shared by both):
1. Develop plans for the 1995 teacher in-service workshops.
2. Study and become familiar with the linkages between ISU and secondary schools with an emphasis on agriculture.
3. Become familiar with the organization and work of 4-H and other groups.
4. Study agriculture education and extension methodologies that can be used and transferred to professors of the [new U.C.R.] plant science [ag. extension] degree program.
5. Become familiar with community projects [in which] high schools or ISU are involved.
6. Become familiar with adult education technologies

Additional Objectives: Ana Tapia
1. To study methodologies for teaching crop protection.
2. Review and collect bibliographic information on crop protection.
3. Explore possibilities for longer term study in her field of plant science- possibly doctoral studies.
4. Explore possibilities for joint research between ISU and the UCR Atlantic Campus.

Additional Objectives: Margarita Meseguer
1. Survey methodologies
2. Analysis of surveys

Lodging: Iowa House, 138 Gray Ave., 292-8870
Campus: 233 Curtiss
According to the conversations between Ana Tapia and Margarita Meseguer during their stay at Iowa State University, we want to formally invite you to participate in the following activities, within the frame of the UDLP/CICET:

a) Seminar for teachers of Professional and Technical Schools of the Atlantic Region on the 30 of May, 1995, in the School of Siquirres, from 8 a.m. to 4 p.m. 75 participants approximately.

b) Workshop II for the updating of teachers of Professional and Technical Schools, from June 1 to June 3, 1995, with 20 participants in the Atlantic Campus, University of Costa Rica, Turrialba.

According to our agreement, your participation will include the materials related to the topic of Environment.

Very sincerely,

Dr. Orlando Salazar M.
Director
Atlantic Campus, U.C.R.

ynh
CC: Ms. Mary de Bacca
Ing. Carlos Eduardo Calvo P.
File
UNIVERSIDAD DE COSTA RICA
SEDE DEL ATLANTICO

Turrialba, 27 de marzo de 1995
SA/D-197-95

Señor
James Pease
Wildlife Specialist
University Extension
Iowa State University

Estimado señor:

Según conversaciones sostenidas por Ana Tapia y Margarita Meseguer en su estadía en Iowa State University, formalmente le invitamos a participar en las siguientes actividades, en el marco del UDLP/CICET.

a) Seminario para profesores de Colegios Técnicos Profesionales en la zona Atlántica, el 30 de mayo de 1995, en el Colegio de Siquirres de 8 a.m. a 4 p.m., aproximadamente 75 participantes.

b) II Taller de Actualización a Profesores de Colegios Técnicos Profesionales, del 1º al 3 de junio de 1995; con 20 participantes en la Sede del Atlántico, Universidad Costa Rica, Turrialba.

Según lo convenido su participación incluirá los materiales relacionados con el tema del medio ambiente.

Con toda consideración,

Dr. Orlando Salazar-M.
Director
Sede del Atlántico-U.C.R.

yuh

CC: Sra. Mary de Bacca
Ing. Carlos Eduardo Calvo P.
Archivo
APPENDIX B

PROFESSIONAL DEVELOPMENT WORKSHOP AGENDAS

1994 and 1995 in English
1994 and 1995 in Spanish
UNIVERSITY OF COSTA RICA
ATLANTIC REGIONAL CAMPUS

IOWA STATE UNIVERSITY
CICET

PROFESSIONAL DEVELOPMENT WORKSHOP I
FOR TEACHERS OF PROFESSIONAL TECHNICAL
HIGH SCHOOLS OF THE ATLANTIC ZONE
August 8 - August 12, 1994

PROGRAM OF ACTIVITIES

MONDAY, AUGUST 8

8:00 a.m. - 12:00 p.m. Arrival of teachers [then] lunch.

1:30 p.m. - 3:00 p.m. Welcome by the UCRSA Director
Explanation of the workshop evaluation and overview
Introduction of the workshop participants.

3:00 - 3:15 p.m. Break.

SPECIALIST PRESENTATIONS

3:15 - 4:15 p.m. IMPORTANT ASPECTS OF THE STUDENT-TEACHER RELATION. M.S. Florystella Bonilla / UCR7

4:15 p.m. - 5:30 p.m. FUNDAMENTALS OF SECONDARY EDUCATION. M.S. Alicia Sequeira / UCR
FIRST SESSION

[THEME] 1. SUSTAINABLE AGRICULTURE

SPECIALIST PRESENTATIONS 8:00 a.m. - 9:30 a.m.

1.1 Dr. Carlos Quesada, U.C.R.

TOPIC: CONCEPTUAL FRAME OF SUSTAINABILITY: PROBLEMS WITH THE USE OF LAND IN WATERSHED MANAGEMENT

9:30-9:45 a.m. Break.

1.2 Dr. Miguel Cifuentes 9:45 a.m. - 11:45 a.m.

TOPIC: PROTECTED AREAS AND SUSTAINABLE DEVELOPMENT

APPLICATION SESSION

1:30 - 4:00 p.m. Elaboration of lesson plans
(See enclosed methodology)

4:00 - 4:15 p.m. Break

4:15 - 5:30 p.m. Design of a plan for sharing information to [home CTP] teachers not participating in the workshop. PHASE 1

6:00 p.m. DINNER

7:00 - 9:45 p.m. Continuation of the Workshop. Elaboration of lesson plans on sustainable agriculture.

SECOND SESSION

[THEME] 2. PROTECTION OF THE ENVIRONMENT

SPECIALIST PRESENTATIONS

8:00 a.m. - 9:30 a.m. Juana Coto / UNA

TOPIC: THEORY AND PRACTICE OF ENVIRONMENTAL PROTECTION
9:30-9:45 a.m. Break

9:45 a.m. - 11:45 a.m. Bernal Gutiérrez /Center for Ecological Studies

TOPIC: SOME ASPECTS OF THE LEGISLATION FOR THE PROTECTION OF THE ENVIRONMENT

APPLICATION SESSION

1:00 - 2:30 p.m. [Group] reports on the lesson plans [developed] on sustainable agriculture

2:30 - 4:00 p.m. Elaboration of environmental protection lesson plans

4:00 - 4:15 p.m. Break

4:15 - 5:30 p.m. Design of a plan for sharing information to [home CTP] teachers not participating in the workshop. PHASE 2

6:00 p.m. DINNER

7:00 - 9:45 p.m. Elaboration of lesson plans on environmental protection. [cont.]

THIRD SESSION

SPECIALIST PRESENTATIONS

[THEME] 3. IMPORTANCE OF THE AGRICULTURE AND LIVESTOCK SECTOR

8:00 a.m. - 9:30 a.m. Dr. Álvaro Jiménez

TOPIC: THE IMPORTANCE OF THE AGRICULTURE AND LIVESTOCK SECTOR

9:45 a.m. - 11:45 a.m. (To be announced)

TOPIC: STRUCTURAL ADJUSTMENT PROGRAMS
APPLICATION SESSION

1:30 - 2:30 p.m.  Presentation of lesson plans developed on environmental protection

2:30 - 4:00 p.m.  Elaboration of lesson plans on the importance of the agriculture and livestock sector

4:00 - 4:15 p.m.  Break

4:15 - 5:30 p.m.  Design of a plan for sharing information with [home CTP] teachers not participating in the workshop.

PHASE 3.

6:00 p.m.  DINNER

7:00 - 9:45 p.m.  Elaboration of lesson plans on the importance of the agriculture and livestock sector

FRIDAY, AUGUST 12

5:30 a.m.  BREAKFAST

6:00-10:00 a.m.  FIELD TRIP

10:00-10:15 a.m.  Break

10:15 - 11:15 a.m.  Presentation of lesson plans developed on the importance of the agriculture and livestock sector

11:15 - 12:15 a.m.  Presentation of the information sharing plans.

12:15 - 12:45 p.m.  Evaluation of the workshop

12:45 p.m.  LUNCH

PRESENTATION OF CERTIFICATES
CLOSING CEREMONY

2:30 p.m.  Departure for the respective [CTPs]
(Transportation provided by UCR)

WORKSHOP DURATION: 42 HOURS
Workshop Theme: EXPLANATION OF APPLIED WORKSHOP ACTIVITIES

During the first four days of the workshop there will be presentations on the following three topics:

- Sustainable agriculture
- Protection of the environment
- Importance of the agriculture and livestock sector

After the presentations, the teachers will develop plans on how they will incorporate the information in their courses and how they are going to disseminate the information acquired to their colleagues.

Objectives:

1. To explore and develop methodologies to incorporate information about the three topics in the current courses (for example: Modules: Agriculture and Livestock, Speciality: applied agroecology).

2. To develop a plan to disseminate information to their colleagues unable to participate in the workshop.

Methodology:

1. On the first day of the workshop, Monday, there will be a presentation about the work dynamics and a session on teaching.

2. During the mornings of Tuesday, Wednesday and Thursday, teachers will be given information about each of the three themes (a theme per day).

3. During the afternoons and nights on Tuesday, Wednesday and Thursday, teachers will work on ways to include the information gained in their courses, the development of lesson plans, and on information dissemination plans for teachers that have not participated in the workshop, following these steps:
TUESDAY

A) 1:30-2:00 Discussion of topic 1 and its relation to:
   1. the community of your school (farms, companies, local examples/experiences, etc.)
   2. the role played by the CTPs in the community regarding this topic.

B) 1:30-2:15
   1. Discussion of topic 1 and its relation to the educational program in the CTP: identification of courses, levels, etc.
   2. Discussing and writing (blackboard and newspaper) current and potential strategies of connection between topic 1, the community and courses offered in the CTPs.
   3. Identification of teachers who teach similar courses and/or who plan to work on the identified courses.
   4. Identification of four sub-groups of teachers:

Procedure: The group of 20 teachers will be divided into four sub-groups of 5 teachers each according to the type of courses and levels they teach. Each sub-group should consist of a combination of teachers in which at least three different schools are represented.

C) 2:15-4:00 Elaboration of educational plans to incorporate the information of the topic in the curriculum.

Recess/ 4:00-4:15

D) 4:15-5:30 Design dissemination plans for sharing information and materials with colleagues teachers who do not participate in the workshop (three phases).

   1. Phase 1 Tuesday
   Discussion of the current strategies of dissemination and exploration of potential strategies.

   2. Phase 2 Wednesday
   Separation into seven "leadership groups", one for each CTP. Objectives for Wednesday: To decide how best to disseminate the workshop information and lesson plans to colleagues of each CTP and to begin development of a dissemination plan for each CTP.
3. **Phase 3 Thursday**
To finish the information sharing plans and lesson plans. Presentation of written reports by each sub-group to the total group on Friday morning.

**E) 7:00-9:45**
The teachers continue working within the four afternoon sub-groups on the development of lesson plans in order to present them to the entire group in writing and orally the next morning.

**WEDNESDAY AND THURSDAY**

**1:30-2:30**
*Presentation of education plans about:*
- **topic 1:** Sustainable agriculture (Wednesday)
- **topic 2:** Protection of the environment

(Thursday)

**A) 2:30-2:45**
Discussion of the topic (Wednesday the 2nd, Thursday the 3rd) and how it relates to:
1. the community of their school (farms, companies, local examples/experiences, etc.)
2. the role played by the CTPs in the community regarding this topic.

**B) 2:45-3:15**
1. Discussion of the topic (Wednesday the 2nd, Thursday the 3rd) and how it relates to the educational program in the CTP: identification of courses, levels, etc.
2. Discussing and writing (blackboard and newspaper) current and potential strategies of connection between the topic, the community and courses offered in the CTPs.
3. Identification of teachers who teach similar courses and/or who plan to work on the identified courses.
4. Identification of four sub-groups of teachers.

**Procedure:**
The group of 20 teachers will be divided in four sub-groups of 5 teachers each, according to the type of courses and levels they teach. Each sub-group must consist of a combination of teachers in which at least three different schools are represented.
C) 3:15-4:00 Begin lesson plan development incorporating thematic information into the curriculum.

Break/ 4:00-4:15

D) 4:15-5:30 Design information dissemination plans to share information, lesson plans and materials gained at the workshop. (three phases).

2. **Phase 2 Wednesday**
Separation in seven "leadership groups", one for each CTP. **Objective** for Wednesday: To decide how to best disseminate workshop information and lesson plans to CTP colleagues and start the development of dissemination plans for each CTP.

3. **Phase 3 Thursday**
To finish development of the information sharing plans and lesson plans. Presentation of written plan summaries by each sub-group to the whole group on Friday morning.

E) 7:00-9:45 The teachers will continue working within the four afternoon sub-groups on the lesson plan development for presentation to the larger group in written and oral form the next morning.

**FRIDAY**

On Friday the entire group will participate in a field trip. After returning, the subgroups will present and distribute their written reports to the whole group together with brief oral summaries.

10:00-11:00 Presentation of the lesson plans on the importance of the agriculture and livestock sector.

11:00-12:00 Presentation by the seven leadership groups of their plans for information dissemination to other CTP teachers.
GUIDE FOR THE ELABORATION OF A LESSON PLAN

TITLE (name of the activity)
LEVEL (for which class or course is the lesson)
TIME (duration: one class, four hours, two lessons of 40 minutes each, country tour for a whole Saturday, etc.)
REASON:

MOTIVATION OR JUSTIFICATION (must include a motivational source: photograph, poem, soil sample, etc.)

GOALS:

1. 
2. (etc.)

CONTENT/ACTIVITIES: learning situation

STEP BY STEP PROCEDURE TO CARRY OUT THE ACTIVITY:

1. 
2. 
3. (etc.)

RESOURCES (list of required materials to carry out the plan or activity)

STRATEGY OF EVALUATION (of the activity’s effectiveness)

BIBLIOGRAPHY/CONTACTS/NOTES:
NAME OF THE SCHOOL

I. PLANS TO DISSEMINATE (SHARE) INFORMATION, ACQUIRED MATERIALS, TEACHING PLANS, ACTIVITIES, ETC. FROM WORKSHOP I WITH THE OTHER TEACHERS OF YOUR CTP:

II. PLANS TO INCORPORATE IDEAS, EXPERIENCES, MATERIALS, KNOWLEDGE, TEACHING PLANS, ETC, OF WORKSHOP I INTO YOUR COURSES:
Teacher-participants
Professional Development Workshop for the
Teachers of Professional and
Technical Schools of the
Atlantic Region

Dear Teachers:

The Atlantic Campus of the University of Costa Rica is very pleased with your presence at the Professional Development Workshop II for Teachers of Professional Technical Schools of Costa Rica.

We have detected for months the need to offer some training for the teachers of professional and technical schools. We hold the idea that the university can contribute, although modestly, to this training.

For this activity we have had the support of Iowa State University/CICET and the Ministry of Public Education.

Our goal, that we hope it is the same as yours, is that during these three days all of us learn from each other for the benefit of the students of Professional and Technical Schools.

I would like to welcome you. I hope that this activity is of great benefit.

My best regards

Very sincerely,

Dr. Orlando Salazar Mora
Director

/cc: file
PROFESSIONAL DEVELOPMENT WORKSHOP II
FOR TEACHERS OF PROFESSIONAL TECHNICAL
HIGH SCHOOLS OF THE ATLANTIC ZONE

June 1 - June 3, 1995

PROGRAM OF ACTIVITIES

THURSDAY, JUNE 1

8:00 a.m. - 8:30 a.m.: Welcome on behalf of UCRSA.
Introduction of the workshop participants.

THEME I: PROTECTION OF THE ENVIRONMENT

FIRST SESSION

SPECIALIST PRESENTATIONS

8:30 a.m. - 9:45 a.m. Dr. Miguel Cifuentes.
Protected areas and sustainable development

9:45 a.m.- 10:00 a.m. Break

10:00 a.m.- 11:30 a.m. Ing. Carlos Hidalgo.
Correct use of pesticides in agriculture.

11:30 a.m.- 12:00 p.m. Tour around the University facilities

12:30 p.m.- 1:30 p.m. Lunch
APPLICATION SESSION
1:30 p.m. - 3:00 p.m. Dr. James Paese
Preservation of the environment
3:00 p.m. - 3:15 p.m. Break

SPECIALIST PRESENTATIONS
3:15 p.m. - 5:00 p.m. M.S. Florystella Bonilla
The adolescent in the adult world.
5:15 p.m. - 6:00 p.m. Dr. James Pease
Environmental education
6:00 p.m. - 7:00 p.m. Dinner
7:00 p.m. - 9:00 p.m. [Development of] Teaching plans

SECOND SESSION
SPECIALIST PRESENTATIONS
8:30 a.m. - 9:45 a.m. Ing. Rafael Ocampo
Biodiversity and the use non-wood forest resources
9:45 a.m. - 10:00 a.m. Break
10:00 a.m. - 12:00 p.m. B.S. Carmen Cubero
Communication and limits the adolescence stage.
12:00 p.m. - 1:00 p.m. Lunch
APPLICATION SESSION

1:00 p.m. - 3:00 p.m. Activities in environmental education

3:00 p.m. - 3:15 p.m. Break

3:15 p.m. - 5:45 p.m. Dr. James Pease
M.S., M.Ed. Lynne Brookes
[Development of] Teaching plans.

6:00 p.m. Dinner

7:00 p.m. - 9:00 p.m. Activities/work.

SPECIALIST PRESENTATIONS

8:30 a.m. - 9:45 a.m. M.S. Rigoberto Pérez
Organization of youth groups for the
development of natural resource
conservation agricultural projects.

9:45 a.m. - 10:00 a.m. Recess

10:00 a.m. - 11:30 a.m. Presentation of work plans [lesson
plans and workshop information
dissemination plans].

12:00 p.m. - 1:00 p.m. Lunch

1:00 p.m. - 2:00 p.m. Conclusions and evaluation.

2:00 p.m. - 3:00 p.m. Workshop closing ceremony workshop
Presentation of certificates
Farewell by the Director of UCRSA

3:00 p.m. Departure to the respective schools.
GUIDE FOR THE ELABORATION OF A LESSON PLAN

TITLE (name of the activity)

LEVEL (for which class or course is the lesson)

TIME (duration: one class, four hours, two lessons of 40 minutes each, country tour for a whole Saturday, etc.)

REASON:

MOTIVATION OR JUSTIFICATION (must include a motivational source: photograph, poem, soil sample, etc.)

GOALS:

1.
2. (etc.)

CONTENT/ACTIVITIES: learning situation

STEP BY STEP PROCEDURE TO CARRY OUT THE ACTIVITY:

1.
2.
3. (etc.)

RESOURCES (list of required materials to carry out the plan or activity)

STRATEGY OF EVALUATION (of the activity’s effectiveness)

BIBLIOGRAPHY/CONTACTS/NOTES:
Ideas to Share

The Results of the II Professional Development Workshop: the information, teaching plans and materials with colleagues at your CTP.

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Steps</th>
<th>Time frame</th>
</tr>
</thead>
</table>

Señores
Profesores Participantes
Taller de Actualización a los
Profesores de Colegios Técnicos
Profesionales de la Región Atlántica

Estimados señores Profesores:

La Sede del Atlántico, Universidad de Costa Rica, se siente muy complacida por su presencia en el Taller de Actualización a Profesores de Colegios Técnicos Profesionales de la Región Atlántica de Costa Rica.

Desde meses anteriores hemos detectado la necesidad de brindar capacitación a los profesores de Colegios Técnicos Profesionales con la idea de que la Universidad pueda contribuir, aunque sea en forma modesta, en esta capacitación.

Para esta actividad hemos contado con el apoyo de la World Wild Fundation, del programa Iowa State University/CICET y del Ministerio de Educación Pública.

Nuestro objetivo, que esperamos sea el mismo de ustedes, es el de que durante estos cinco días todos aprendamos unos de otros para el bien de los estudiantes de Colegios Técnicos Profesionales.

Sean ustedes bienvenidos y esperamos que esta actividad sea de gran provecho.

Con toda consideración,

Ing. Carlos Eduardo Calvo P.
Director a.l.
Sede del Atlántico, U.C.R.
INDICE

Carta de bienvenida

Lista de participantes

Agenda

Metodología

Tema I: Agricultura sostenible.
Tema II: Protección del medioambiente.
Tema III: Importancia del sector agropecuario.

Apéndices:

- Guías para la elaboración de planes de enseñanza.
- Recursos
- Papel rayado
I TALLER DE ACTUALIZACIÓN PARA PROFESORES DE COLEGIOS TÉCNICOS PROFESIONALES DE LA ZONA ATLÁNTICA - 8 AL 12 DE AGOSTO DE 1994

PROGRAMA DE ACTIVIDADES

LUNES 8 DE AGOSTO

8:00 a.m. - 12:00 m.d.  Llegada de los profesores y almuerzo.

1:30 p.m. - 3:00 p.m.  Recibimiento por parte del director de la Sede. Explicación de la evaluación del taller y las perspectivas
                      Presentación de los participantes al taller

3:00 - 3:15 p.m.  Receso.

SESIONES DIDACTICA

3:15 - 4:15  ASPECTOS IMPORTANTES EN LA RELACIÓN ALUMNOS- PROFESOR. M.Sc. Florystella Bonilla / UCR

SESION DE TRABAJO

4:15 p.m. - 5:30 p.m.  FUNDAMENTOS DE LA EDUCACIÓN SECUNDARIA. M.Sc. Alicia Sequeira / UCR
PRIMERA SESIÓN

1. AGRICULTURA SOSTENIBLE

EXPOSICIONES MAGISTRALES 8:00 a.m. - 9:30 a.m.

1.1 Dr. Carlos Quesada, U.C.R.

TEMA: MARCO CONCEPTUAL DE SOSTENIBILIDAD: LA PROBLEMÁTICA DEL USO DE LA TIERRA EN EL MANEJO DE CUENCAS.

9:30-9:45 a.m. RECESO

1.2. Dr. Miguel Cifuentes 9:45 a.m. - 11:45 a.m.

TEMA: LAS AREAS PROTEGIDAS Y EL DESARROLLO SUSTENTABLE

SESIÓN DE TRABAJO

1.30 - 4:00 p.m. Elaboración de planes de enseñanza (Ver metodología adjunta)

4:00-4: 15 p.m. RECESO
4: 15:- 5:30 p.m. Diseño de un plan de diseminación de la información a los profesores de la región no participantes al taller. FASE 1

6:00 p.m. CENA

7:00 - 9:45 p.m. Continuación del Taller. Elaboración de planes enseñanza sobre agricultura sostenible
SEGUNDA SESION

2. PROTECCION DEL MEDIO AMBIENTE

EXPOSICIONES MAGISTRALES

8:00 a.m.-9:30 a.m. Juana Coto/UNA

TEMA: CONCEPTO Y LA ACCION DE LA PROTECCION DEL MEDIO AMBIENTE

9:30 a.m. - 9:45 a.m. Receso

9:45 a.m. - 11:45 a.m. Bernal Gutiérrez / Centro de Estudios Ecológicos

TEMA: ASPECTOS SOBRE LA LEGISLACION DE LA PROTECCION DEL MEDIO AMBIENTE

SESION DE TRABAJO

1:00 - 2:30 p.m. Presentación de los informes de los planes de enseñanza sobre agricultura sostenible

2:30-4:00 p.m. Elaboración de planes de enseñanza sobre protección del medio ambiente

4:00-4:15 p.m. Receso

4:15-5:30 p.m. Diseño de un plan de diseminación de la información a los profesores de la región no participantes al Taller. FASE 2

6:00 p.m. Cena

7:00-9:45 p.m. Elaboración del planes de enseñanza sobre protección del medio ambiente
JUEVES 11 DE AGOSTO

TERCERA SESION

EXPOSICIONES MAGISTRALES

3. IMPORTANCIA DEL SECTOR AGROPECUARIO

8:00 a.m. - 9:30 a.m.  Dr. Alvaro Jiménez

TEMA: IMPORTANCIA DEL SECTOR AGROPECUARIO.

9:45 a.m. - 11:45 a.m.  Por designar

TEMA: PROGRAMAS DE AJUSTE ESTRUCTURAL

SESION DE TRABAJO

1:30-2:30 p.m.  Presentación de los planes de enseñanza sobre protección del medio ambiente

2:30 - 4:00 p.m.  Elaboración de planes de enseñanza sobre importancia del sector agropecuario

4:00-4:15 p.m.  RECESO

4:15- 5:30 p.m.  Diseño de un plan de diseminación de la información a los profesores de la región no participantes al taller.FASE 3

6:00 p.m.  CENA

7:00 - 9:45 p.m.  Elaboración de planes de enseñanza sobre la importancia del sector agropecuario
VIERNES 12 DE AGOSTO

5:30 a.m. DESAYUNO
6:00 - 10:00 a.m. GIRA DE CAMPO
10:00 - 10:15 a.m. RECESO
10:15 - 11:15 a.m. Presentación de planes sobre la importancia del sector agropecuario
11:15 - 12:15 a.m. Presentación de los resultados del diseño de los planes de diseminación
12:15 - 12:45 a.m. Evaluación del taller
12:45 a.m. ALMUERZO
ENTREGA DE CERTIFICADOS
CLAUSURA
2:30 p.m. Salida a sus respectivos colegios (Transporte de la UCR)

DURACIÓN DEL TALLER: 42 HORAS
GUIA PARA ELABORACIÓN DE UN PLAN DE LECCIÓN

TITULO (Nombre de la actividad):

NIVEL (para quiénes/cuál clase o curso) es la lección:

TIEMPO (duración una clase, cuatro horas, dos lecciones de 40 minutos cada una, gira al campo un sábado entero, etc.):

RAZON:

MOTIVACION O JUSTIFICACION Debe incluir un recurso didáctico (fotografía, poema, muestra de suelo, etc.)

OBJETIVOS:

1. 
2. (etc.)

CONTENIDO/ACTIVIDADES: Situación de aprendizaje.

PROCEDIMIENTO PASO POR PASO PARA EJECUTAR LA ACTIVIDAD:

1. 
2. 
3. (etc.)

RECURSOS (lista de materiales requeridos para ejecutar el plan o actividad):

Estrategia de evaluación (de la eficiencia de la actividad):

BIBLIOGRAFIA/CONTACTOS/NOTAS:
NAME OF THE SCHOOL

I. PLANS TO DISSEMINATE (SHARE) INFORMATION, ACQUIRED MATERIALS, TEACHING PLANS, ACTIVITIES, ETC. FROM WORKSHOP I WITH THE OTHER TEACHERS OF YOUR CTP:

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Universidad de Costa Rica
Sede del Atlántico
Dirección

Turrialba 19 de junio, 1995
SR-D-422-95

Senores
Profesores Participantes
Taller de Actualización a los
Profesores de Colegios Técnicos
Profesionales de la Región Atlántica

Estimados señores Profesores:

La Sede del Atlántico, Universidad de Costa Rica, se siente muy complacida por su presencia en el II Taller de Actualización a Profesores de Colegios Técnicos Profesionales de Costa Rica.

Desde meses anteriores hemos detectado la necesidad de brindar capacitación a los profesores de Colegios Técnicos Profesionales con la idea de que la Universidad pueda contribuir, aunque sea en forma modesta, en esta capacitación.

Para esta actividad hemos contado con el apoyo de Iowa State University/CICET y del Ministerio de Educación Pública.

Nuestro objetivo, que esperamos sea el mismo de ustedes, es el de que durante estos tres días todos aprendamos unos de otros para el bien de los estudiantes de Colegios Técnicos Profesionales.

Sean ustedes bienvenidos y esperamos que esta actividad sea de gran provecho.

Les saluda con toda consideración.

Atentamente,

Dr. Orlando Salazar Mora
Director

cc: archivo
II TALLER DE ACTUALIZACIÓN PARA PROFESORES DE COLEGIOS TECNICOS PROFESIONALES DE LA ZONA ATLANTICA

Jueves 1° de junio
8:00 a.m. - 8:30 a.m.: Recibimiento por parte de la Sede.
Presentación de los participantes.

TEMA 1: PROTECCION DEL MEDIO AMBIENTE

EXPOSICIONES MAGISTRALES
PRIMERA SESION

8:30 a.m. - 9:45 a.m. Dr. Miguel Cifuentes.
Las áreas protegidas y el desarrollo sustentable.

9:45 a.m. - 10:00 a.m. Refrigerio.

10:00 a.m. - 11:30 a.m. Ing. Carlos Hidalgo.
Uso correcto de los plaguicidas en la agricultura.

11:30 a.m. - 12:00 m.d. Recorrido por las instalaciones de la Universidad.
12:30 p.m. - 1:30 p.m.  Almuerzo.

SESION DE TRABAJO

1:30 p.m. - 3:00 p.m.  Dr. James Pease
Conservación del medio ambiente

3:00 p.m. - 3:15 p.m.  Refrigerio

3:15 p.m. - 5:00 p.m.  M.Sc. Florystella Bonilla
El adolescente en el mundo adulto.

5:15 p.m. - 6:00 p.m.  Dr. James Pease
Educación Ambiental

6:00 p.m. - 7:00 p.m.  Cena

7:00 p.m. - 9:00 p.m.  Planes de enseñanza.

Viernes 2 de junio

SEGUNDA SESION

EXPOSICION MAGISTRAL

8:30 a.m. - 9:45 a.m.  Ing. Rafael Ocampo
La biodiversidad y uso de recursos no maderables del bosque.

9:45 a.m. - 10:00 a.m.  Receso

10:00 a.m. - 12:00 a.m.  Licda. Carmen Cubero
Comunicación y Límites en la etapa de la adolescencia.

12:00 a.m. - 1:00 p.m  Almuerzo

SESION DE TRABAJO

1:00 p.m. - 3:00 p.m.  Actividades en educación ambiental.
3:00 p.m. - 3:15 p.m.  Refrigerio
3:15 p.m. - 5:45 p.m.  Dr. James Pease
                      M.Sc., M.Ed. Lynne Brookes
                      Planes de enseñanza.
6:00 p.m.             Cena
7:00 p.m. - 9:00 p.m.  Actividades/trabajo.

Sábado 3 de junio

TEMA II. ORGANIZACION DE GRUPOS JUVENILES.

EXPOSICIONES MAGISTRALES

TERCERA SESION

8:30 a.m. - 9:45 a.m.  M.Sc. Rigoberto Pérez
                      Organización de grupos juveniles para el desarrollo de proyectos agrícolas de conservación de recursos naturales.
9:45 a.m. - 10:00 a.m. Refrigerio.
10:00 a.m. - 11:30 a.m. Presentación de planes de trabajo.
12:00 p.m. - 1:00 p.m. Almuerzo
1:00 p.m. - 2:00 p.m.  Conclusiones y evaluación.
2:00 p.m. - 3:00 p.m.  Clausura del Taller
                      Entrega de certificados
                      Despedida por parte del señor Director de la Sede.
3:00 pm.             Salida a sus respectivos colegios.
PLAN DE ENSEÑANZA

TITULO O NOMBRE DE LA ACTIVIDAD:

NIVEL (año, curso):

META DE LA ACTIVIDAD (JUSTIFICACION) (El propósito general de esta actividad):

OBJETIVOS (una nota un máximo de tres, claros y específicos):

METODOLOGIA (Procedimiento, pasos de la actividad):

MATERIALES (listar todo lo necesario):

ESTRATEGIA DE EVALUACION (¿Cómo va a saber que la actividad logró los objetivos?):
<table>
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<tr>
<th>Sugerencias</th>
<th>Pasos</th>
<th>Marco de Tiempo</th>
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</thead>
</table>

Ideas para Compartir

La Información, Planes de Enseñanza, y Materiales Resultantes del II Taller de Actualización con sus Colegas en el CTP
APPENDIX C

QUESTIONNAIRES: 1994 (4) and 1995 (2)

In English

In Spanish
INFORMED CONSENT AND STATEMENT OF CONFIDENTIALITY

Dear Workshop Participant:

A research program has been designed to assess the best approach for the University of Costa Rica's Atlantic Regional Campus to provide teacher in-service training and your participation is invited. Through your voluntary completion of four 30 minute long surveys to be administered at the workshop site on August 8 and August 12, and at your high school during a visit between August 22-26, and on October 5, meaningful information will be contributed to developing an overall understanding of the need for such training, the interests of regional teachers, the strengths and weaknesses of the workshop, and the role the UCR/ARC can best play in providing such training programs. Evaluation of this in-service training program will provide useful information for the conduct of similar regional and national workshops in the future.

All information gathered will be coded numerically by subject. The master sheet for these codes and questionnaires obtained from the subjects will be retained by the principal investigator in a separate file. No names, initials, or other identifying characteristics will be reported, provided to any other persons, or used in any publication that might result from this study.

You are welcome to ask any questions regarding this research at any time. You are also free to withdraw your consent and discontinue your participation in the study at any time without any prejudice or penalty.

At the conclusion of this study I understand that I will be informed of the study results.

My signature below signifies that I have read and understood the purpose of the study, understand that my participation is voluntary, and that confidentiality will be strictly maintained.

Signature of Participant ___________________________ Date __________

Signature of Witness ___________________________ Date __________
1st IN-SERVICE TRAINING WORKSHOP FOR TEACHERS FROM THE
PROFESSIONAL TECHNICAL HIGH SCHOOLS IN COSTA RICA'S ATLANTIC REGION
August 8-12, 1994
Atlantic Region Campus, University of Costa Rica

QUESTIONNAIRE 1
August 8, 1994

Instructions:

Code No. ____ ____ ____ ____

1. FIRST: Please write the last 4 numbers from your identification card in the above space titled "Code No. ____ ____ ____ ____" on each one of the pages of this questionnaire. (Very important... thank you!)

2. Please complete each of the sections that follow according to the instructions provided.

SECTION 1: IN-SERVICE TRAINING EXPERIENCE AND WORKSHOP EXPECTATIONS

1. What in-service training programs have you attended in the last five years? Please describe below:

<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Theme/Title</th>
<th>Duration</th>
<th>Program Provider</th>
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</tbody>
</table>

2.A. How important do you believe teacher in-service training programs to be? (Please circle one response):

Not Important  Important  Extremely Important  Unsure

B. Please explain the response you chose for 2.A:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
3. How often do you think high school teachers should attend in-service training programs? (Please circle one response):

- Every Month
- Every 3-4 Months
- 2 Times Per Year
- Yearly
- Every 2 Years
- Every 3 Years
- Every 4-5 Years
- Unsure

4. There are many possible reasons for attending an in-service training workshop. Please indicate the importance to you of each of the following reasons for your attending this workshop. Circle the number of the most appropriate response for each of the following items, using the rating scale below:

1 = Unimportant  
2 = Somewhat Important  
3 = Important  
4 = Very Important

<table>
<thead>
<tr>
<th>Reason</th>
<th>U</th>
<th>S.I.</th>
<th>I</th>
<th>V.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 To increase my technical knowledge in order to help meet CTP curriculum demands</td>
<td></td>
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<td></td>
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<tr>
<td>4.2 To improve my teaching abilities following current MEP guidelines</td>
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<td>4.3 To improve my salary</td>
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<tr>
<td>4.4 To increase my prestige</td>
<td></td>
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<tr>
<td>4.5 To improve my professional service to my community</td>
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<td>4.6 To be able to exchange ideas with other professionals in my field</td>
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<td>4.7 To escape the ordinary classroom routine</td>
<td></td>
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<tr>
<td>4.8 Curiosity about an in-service training program provided by S del A UCR</td>
<td></td>
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<td></td>
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<tr>
<td>4.9 I asked to attend</td>
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<tr>
<td>4.10 I was told to attend</td>
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<tr>
<td>4.11 I wanted to attend because colleagues from my CTP were attending</td>
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</tr>
<tr>
<td>Code No.</td>
<td>Description</td>
<td>U.</td>
<td>S.I.</td>
<td>I.</td>
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<td>------------------------------------------------------------------------------</td>
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<tr>
<td>4.12</td>
<td>To maintain my current skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.13</td>
<td>To better meet the requirements of my CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.14</td>
<td>To review my commitment to my profession</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.15</td>
<td>To learn from the interaction with other professionals</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.16</td>
<td>To help me obtain leadership capabilities for my profession</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.17</td>
<td>To prepare myself to better meet changing emphases in professional responsibilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.18</td>
<td>To acquire new professional knowledge and skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.19</td>
<td>To look closely at my professional role and/or its practice</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.20</td>
<td>To help me keep abreast of new developments in my field</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.21</td>
<td>To help me increase the likelihood that my students are better served</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.22</td>
<td>To help me be more competent in my current work</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.23</td>
<td>To increase the likelihood of my advancement/promotion</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.24</td>
<td>To be challenged by the ideas of my colleagues</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
4.25 To improve my professional service to students, the CTP, and the community
4.26 To obtain new instructional materials for my courses
4.27 To obtain information to share with my CTP colleagues
4.28 To improve my teaching skills
4.29 To reflect upon the value of my professional responsibilities

5. Please list three of the major expectations you have regarding this workshop:


SECTION II: TECHNICAL AREA FAMILIARITY

1. A high school teacher is often asked to teach several different courses. Sometimes new courses cover material in unfamiliar areas. How well prepared do you currently feel you are to present several topics within the following three technical areas? Please circle the appropriate response to each of the following topics, using the rating scale below:

1=Unprepared  2=Slightly Prepared  3=Prepared  4=Well Prepared

A. Sustainable agriculture

1. Land use in watershed management
2. Protected areas and sustainable development
2. Pertinent new information is important for teachers. It is often difficult to acquire. Do you currently have a workable method for disseminating information you learn to your high school colleagues?

Please circle best response: yes no unsure

3. How well prepared do you presently feel you are to disseminate information to your colleagues on topics in the following three technical areas? Please circle the appropriate response to each of the following topics, using the rating scale below:

1=Unprepared  2=Slightly Prepared  3=Prepared  4=Well Prepared

### A. Sustainable agriculture

<table>
<thead>
<tr>
<th>Topic</th>
<th>U.</th>
<th>S.P.</th>
<th>P.</th>
<th>W.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land use in watershed management</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Protected areas and sustainable development</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### B. Environmental protection

<table>
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<tr>
<th>Topic</th>
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<th>P.</th>
<th>W.P.</th>
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</thead>
<tbody>
<tr>
<td>1. Concepts and action in environmental protection</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Legislative aspects of environmental protection</td>
<td>1</td>
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</table>
### Importance of the Agricultural Sector

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</tr>
</thead>
<tbody>
<tr>
<td>1. Importance of the agricultural sector</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Structural adjustment and agriculture</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### SECTION III: PARTICIPANT BACKGROUND

1. Highest academic degree obtained?  
2. In what area is your degree?  
3. From what academic institution did you obtain your degree?  
4. For how many years total have you been a high school teacher?  
5. How well do you feel prepared in technical areas? Please circle the best response: Unprepared Somewhat Prepared Prepared Well Prepared  
6. How well prepared do you feel you are in pedagogy? Please circle the best response: Unprepared Somewhat Prepared Prepared Well Prepared  
7. Please list all subjects that you currently teach.  
8. Please list other subjects you have taught in the last 5 years.  
9. Which three subjects do you most enjoy teaching?

6.
10. In addition to teaching, please list any other responsibilities that you have at your high school:

__________________________________________________________________________
__________________________________________________________________________

11. What is your present position title? 11. ___________________________

12. There are many occupations. How would you rate your satisfaction with your occupation as a teacher? (Please circle the appropriate response):

Not Satisfied  Slightly Satisfied  Satisfied  Highly Satisfied

13. What is your age group? (Mark with an "X")

   ___ 20-25 years   ___ 31-35 years   ___ 41-45 years
   ___ 26-30 years   ___ 36-40 years   ___ more than 45 years

14. ___ Male  ___ Female  (Mark with an "X")

15. What is your marital status?

   ___ Married   ___ Single   ___ Other

16. For how long have you lived in the Atlantic Region? 16. ________________

17. In which region did you grow up? 17. ________________

Your completion of this questionnaire is greatly appreciated. You will be informed of the study results towards the end of 1994.
1st IN-SERVICE TRAINING WORKSHOP FOR TEACHERS FROM THE
PROFESSIONAL TECHNICAL HIGH SCHOOLS IN COSTA RICA'S ATLANTIC REGION
August 8-12, 1994
Atlantic Region Campus, University of Costa Rica

QUESTIONNAIRE 2
August 12, 1994

Instructions:

1. FIRST: Please write the last 4 numbers from your identification
card (or the special number that you selected for use on these
questionnaires) in the above space titled "Code No. ___ ___ ___ __" ON
EACH ONE of the pages of this questionnaire. (This is very
important... thank you!)

2. Please complete each of the sections that follow according to
the instructions provided.

SECTION I: IN-SERVICE TRAINING EXPERIENCE & PERCEIVED WORKSHOP BENEFITS

1. There are many ways a participant can benefit from attending an in-
service training workshop. Please indicate the level of benefit you have
gained from attending this workshop. Place a circle around the number of
the most appropriate response for each item below, using the following
rating scale:

1=No/None  2=Slightly  3=Satisfactory  4=Greatly

1.1 Increased my technical
knowledge to help meet
CIF curriculum demands

1.2 Improved my ability to
follow current MEP
educational guidelines

1.3 Will improve my potential
salary level

1.4 Will increase my prestige

1.5 Will improve my
professional service to
my community

1.6 Exchanged ideas with other
professionals in my field

1.7 Stimulated me to improve
my classroom routine
<table>
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<th>Code No.</th>
<th>N.</th>
<th>P.</th>
<th>S.</th>
<th>M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I learned more about the S. del Atlantico's, UCR teacher training capabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.9</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am now familiar with the S. del Atlantico facilities and resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.10</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Degree pleased with my decision to attend</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.11</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Colleagues from my high school did or would have improved my experience</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1.12</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Helped me maintain my current abilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.13</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Will allow me to better meet the needs of my high school</td>
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<tr>
<td>1.14</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Helped me review my commitment to my profession</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.15</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Learned from interaction with other professionals</td>
<td></td>
<td></td>
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<tr>
<td>1.16</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Helped me develop some leadership capabilities related to my work</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.17</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>I was able to contemplate changing emphases of my present professional responsibilities</td>
<td></td>
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<tr>
<td>1.18</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>Developed some new professional knowledge and/or skills’</td>
<td></td>
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<tr>
<td>1.19</td>
<td>1</td>
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<td>4</td>
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<tr>
<td>Sharpened my perspective of my professional role or practice</td>
<td></td>
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<tr>
<td>1.20</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>I became more informed of new developments in my field</td>
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</table>

2.
<table>
<thead>
<tr>
<th>Code No.</th>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.21</td>
<td>Helped me increase the likelihood that my students are better served</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.22</td>
<td>Will help me be more competent in my current job</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.23</td>
<td>Will increase the likelihood for me to advance in my present work position</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.24</td>
<td>I was stimulated by the ideas of my professional colleagues</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.25</td>
<td>Will improve my professional service to students, high school, and community</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.26</td>
<td>Obtained new teaching materials to take back to my classes</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.27</td>
<td>Obtained information to share with my high school colleagues</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.28</td>
<td>Will improve my teaching skills</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1.29</td>
<td>Will help me reflect on the value of my professional responsibilities</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

1.30 Please list the three most important benefits that you derived from participating in the workshop:

1. 

2. 

3. 

2. There were a number of presentations and activities provided during the workshop. Please evaluate each presentation and the material provided in relationship to how helpful it was/will be to you as a teacher, using the following rating scale:

1=Not Helpful  2=Slightly Helpful  3=Helpful  4=Very Helpful
<table>
<thead>
<tr>
<th>Code No.</th>
<th>1=Not Helpful</th>
<th>2=Slightly Helpful</th>
<th>3=Helpful</th>
<th>4=Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 a) &quot;Fundamentals of secondary education&quot; (Mon., M.Sc. Alicia Sequiera, UCR)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Material provided</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.2 a) &quot;Conceptual framework of sustainability: the problem of land use in watershed management&quot; (Tue., Dr. Carlos Quesada, UCR)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Material provided</td>
<td>1</td>
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</tr>
<tr>
<td>2.3 a) &quot;Protected areas and sustainable development&quot; (Tue., Dr. Miguel Cifuentes, WWF)</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>b) Material provided</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>2.4 a) &quot;Theory and practice of environmental protection&quot; (Wed., M.Sc. Juana Coto, UNA)</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>b) Material provided</td>
<td>1</td>
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<tr>
<td>2.5 a) &quot;Aspects of the environmental protection legislation&quot; (Wed., Bernal Gutierrez, CEE)</td>
<td>1</td>
<td>2</td>
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<tr>
<td>b) Material provided</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>2.6 a) Discussion with Ricardo Ramírez, MEP (Wed., p.m.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Materials provided from MEP</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>2.7 a) &quot;Importance of the agriculture and livestock sector&quot; (Th., Dr. Alvaro Jimenez)</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
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<tr>
<td>b) Material provided</td>
<td>1</td>
<td>2</td>
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4.
2.8 a) "Structural adjustment programs"
(Th., M.Sc. Pedro Cusianovich R.)

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b) Material provided

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2.9 a) "Important aspects of the student-teacher relationship"
(Th., M.Sc. Florestella Bonilla, UCR)

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b) Material provided

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2.10 a) Field trip to Guayabo
(Fri., M.Sc. Sebastián Salazar)

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b) Materials, information provided

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<th>V.H.</th>
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</table>

Comments on any of the above (2.1-2.10). Please identify the item by number:

_________________________________________________________

_________________________________________________________

_________________________________________________________

1=Not Helpful  2=Slightly Helpful  3=Helpful  4=Very Helpful

2.11 a) Sessions on development of teaching plans
(Tue., Wed., Th., UCR & ISU staff)

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<th>S.H</th>
<th>H.</th>
<th>V.H.</th>
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<td>4</td>
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</table>

b) Methodology, guide, process

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<th>N.H</th>
<th>S.H</th>
<th>H.</th>
<th>V.H.</th>
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<td>4</td>
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</table>

c) Results: 12 teaching plans

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<th>N.H</th>
<th>S.H</th>
<th>H.</th>
<th>V.H.</th>
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</table>

Comments on this activity:

_________________________________________________________

_________________________________________________________

_________________________________________________________
SECTION II: TECHNICAL AND APPLIED ASPECTS OF THE WORKSHOP

1. A high school teacher is often asked to teach several different courses. Sometimes new courses cover unfamiliar areas. Considering the workshop presentations, the material provided, and the lesson plans developed, do you feel better prepared to teach several topics within the following three technical areas? Please circle the appropriate response for each of the following items, using the rating scale below:

1=Unprepared  2=Slightly Prepared  3=Better Prepared  4=Much Better Prepared

A. Sustainable agriculture

1. Land use in watershed management

2. Protected areas and sustainable development

Please explain your rating of this activity:
2. One of the workshop activities was the development of lesson plans related to the three major themes. How beneficial was this activity for you? (Please circle best response)

Not helpful  Slightly helpful  Helpful  Very helpful

3. In a similar workshop, how much time should be spent for lesson plan development? (Please circle best response):

No time  Less time  About the same  More time  Much more time

4. Would you prefer working on development of lesson plans alone or in a group? (Please circle best response):

Alone  Small group (2-4)  Larger group (5-8)

Comments/suggestions regarding these activities:

5. It is important for teachers to obtain new information. After the workshop, how well prepared do you feel you are to share information, lesson plans, and workshop materials with colleagues at your CTP on topics in the following three technical areas? Please circle the appropriate response for each of the following topics, using the rating scale below:

7.
A. Sustainable agriculture

1. Land use in watershed management
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

2. Protected areas and sustainable development
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

B. Environmental protection

1. Concepts and action in environmental protection
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

2. Legislative aspects of environmental protection
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

C. Importance of the agricultural sector

1. Importance of the agricultural sector
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

2. Structural adjustment and agriculture
   1 U. 2 S.P. 3 B.P. 4 M.B.P.

6. One of the workshop activities consisted of the development of plans for sharing information, lesson plans, and materials with other teachers at your CTP. How useful was this activity for you? (Please circle best response)

   Not helpful  Slightly helpful  Helpful  Very helpful

7. In a future similar workshop, how much time should be spent on the development of plans for information sharing? (Please circle best response):

   No time  Less time  About the same  More time  Much more time

8. Would you prefer working on development of a plan for information sharing alone or in a group? (Please circle best response):

   Alone  Small group (2-4)  Larger group (5-8)

Please write down suggestions regarding this activity in future workshops:
9. Some of the conference speakers discussed different aspects of pedagogy. Was this useful to you as a teacher? (Please circle best response):

Yes   No   Unsure

Please write down any comments you may have:

________________________________________________________________________

________________________________________________________________________

10. Please describe which aspects of pedagogy would be of greatest interest to you in future workshops:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

SECTION III: WORKSHOP LOGISTICS

Your participation in the workshop is important and so is your comfort. Please evaluate the following according to the following scale:

1=Unsatisfactory   2=Minimally Satisfactory   3=Satisfactory   4=Excellent   NA=Not Applicable

<table>
<thead>
<tr>
<th>1. The participant selection process. Comments/suggestions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.</td>
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</table>

<table>
<thead>
<tr>
<th>2. Transportation provided by UCR. Comments/suggestions:</th>
</tr>
</thead>
<tbody>
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<tr>
<th>3. Housing on campus.</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Comments/suggestions:

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<th></th>
<th>U.</th>
<th>M.S.</th>
<th>S.</th>
<th>E.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Meals provided.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Comments/suggestions:

5. Classroom. | 1  | 2    | 3  | 4  | N.A. |

Comments/suggestions:

6. Length of workshop day. | 1  | 2    | 3  | 4  | N.A. |

Comments/suggestions:

7. Support personnel on campus. | 1  | 2    | 3  | 4  | N.A. |

Comments/suggestions:

8. Program Speakers:
   Level of competence | 1  | 2    | 3  | 4  | N.A. |
   Appropriateness of presentations | 1  | 2    | 3  | 4  | N.A. |
   Responsiveness to participants' questions | 1  | 2    | 3  | 4  | N.A. |

Comments:

9. UCR/ISU program staff (coordinators, facilitators):
   Level of competence | 1  | 2    | 3  | 4  | N.A. |
229

<table>
<thead>
<tr>
<th>Code No.</th>
<th></th>
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</table>

### Attitude during activities

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</table>

### Responsiveness/flexibility to meet participants needs.

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</thead>
</table>

**Comments:**

10. Please comment on the workshop structure overall. Your perspectives are very important.

11. VERY IMPORTANT. Please suggest possible ways that the Sede del Atlántico, UCR could provide you and other CTP teachers with educational and/or technical services and support:

12. Any other comments or suggestions are welcome:

Your completion of this questionnaire is greatly appreciated. You will be informed of the results of the study towards the end of 1994.
1st IN-SERVICE TRAINING WORKSHOP FOR TEACHERS FROM THE
PROFESSIONAL TECHNICAL HIGH SCHOOLS IN COSTA RICA'S ATLANTIC REGION
August 8-12, 1994
Atlantic Region Campus, University of Costa Rica

QUESTIONNAIRE 3

August 22-25, 1994

Instructions: Code No. __ __ __ __

1. FIRST: Please mark the last four numbers of your identification card (or a special number that you selected for use on these questionnaires) in the space above marked "Code No. ___ ___" on EACH ONE of the pages of this questionnaire. (This is very important... thank you!

2. Please complete each section that follows according to the instructions provided.

*******************************************************************************

SECTION I: WORKSHOP INFORMATION AND MATERIALS

The three primary technical areas addressed during the workshop were "sustainable agriculture", "environmental protection", and "the importance of agriculture." Several areas of pedagogy were also addressed. Besides presenting verbal information, nearly all of the presenters provided written material for your review.

Reviewing this material will provide you with information to incorporate into courses that you will teach. It is resource material with which to develop lesson plans and activities for your classes.

Just a little over a week has passed since the workshop. Please indicate to what degree you have reviewed information and material related to the following presentations.

1.
FIRST: Please circle the appropriate response:

1= Not at all  2=Some  3=Sufficiently

SECOND: If you circle a "1" please circle one of the following codes to indicate why:

NT=no time  NI=no interest  NA=not in my area

1. "Fundamentals of secondary education"  
   (Mon., M.Sc. Alicia Sequiera, UCR)

2. "Conceptual framework of sustainable development: the problem of land use in watershed management"  
   (Tue., Dr. Carlos Quesada, UCR)

3. "Protected areas and sustainable development"  
   (Tue., Dr. Miguel Cifuentes, WWF)

4. "Theory and practice of environmental protection"  
   (Wed., M.Sc. Juana Coto, UNA)

5. "Aspects of the environmental protection legislation"  
   (Wed., Bernal Gutierrez, CEE)

6. Discussion with Ricardo Ramirez, MEP (Wed., p.m.)

7. "Importance of the agriculture and livestock sector"  
   (Th., Dr. Alvaro Jimenez)

8. "Structural adjustment programs"  
   (Th., M.Sc. Pedro Cusianovich R.)
9. "Important aspects of the student-teacher relationship" (Th., M.Sc. Florestella Bonilla, UCR)

10. Field trip to Guayabo (Fri., M.Sc. Sebastián Salazar)

It will help you to improve and enrich your teaching if you make a commitment to review the material you obtained from the workshop. Enjoy reviewing the materials!

SECTION II: LESSON PLANS, ACTIVITIES AND PROJECTS

As you will recall, workshop participants developed 12 plans for teaching students about topics related to the three major workshop themes. Please respond to the following by circling an answer and/or writing comments.

1. Was the development of lesson plans at the workshop helpful? (Please circle) Yes No Somewhat

Why? Please explain: ________________________________

2. How many of the 12 plans have you reviewed since the workshop ended? (Please circle the appropriate response)
   0 1-3 4-6 7-9 10-12 Unsure

3. How many of the 12 plans do you think you might use in your courses over the next 2 years? (Please circle)
   0 1-3 4-6 7-9 10-12 Unsure

4. Do you plan to develop more teaching plans using the materials provided during the workshop over the next 2 years? (Please circle) Yes No Unsure
SECTION III: SHARING WORKSHOP INFORMATION AND MATERIALS

One major expectation of the workshop is that information and materials would be shared by participants with appropriate colleagues at their schools who did not participate.

1. In past workshops, have you been specifically asked to share information and/or materials you obtained at a workshop with other teachers at your school who did not attend?

(Please circle) Yes No Unsure

2. Did you have a successful method in the past to share such information at your high school?

(Please circle) Yes No Unsure

3.1 Do you believe that you have developed a useful plan to disseminate workshop information and materials to appropriate teachers at your school? (Please circle your response)

Disagree Slightly agree Agree Strongly agree

3.2 Please briefly describe how your plan to disseminate workshop information and materials to appropriate teachers at your high school:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

4.1 Do you plan to share some aspect(s) of the workshop information and/or materials within your community? (Please circle your response)

Disagree Slightly agree Agree Strongly agree
4.2 Please briefly describe plans you may have to share workshop information and/or materials within your community:


5.1 Do you think that attending the workshop helped you to develop useful plans for disseminating information to other teachers and/or your community? (Please circle your response)

Disagree Slightly agree Agree Strongly agree

5.2 Please comment on what aspects of the workshop were most and/or least helpful to you for planning to share information:


6. Reflecting on the workshop provided August 8-12, 1994, are there any further comments you wish to make regarding its usefulness to you as a high school teacher:


Thank you for the useful information you have provided. You will be asked similar questions in the fourth and final October 5th workshop follow-up questionnaire that is being provided you.

Keep up the good work teaching and sharing ideas, information and materials provided through the workshop. Best wishes for success in your endeavors!
Instructions: Code No. __ __ __ __

1. FIRST: Please mark the last four numbers of your identification card (or a special number that you selected for use on these questionnaires) in the space above marked "Code No. __ __ __ " on EACH ONE of the pages of this questionnaire. (This is very important... thank you!

2. Please complete each section that follows according to the instructions provided.

SECTION I: WORKSHOP INFORMATION AND MATERIALS

The three primary technical areas addressed during the August 8-12, 1994 workshop were "sustainable agriculture", "environmental protection", and "the importance of agriculture." Several areas of pedagogy were also addressed. Besides presenting verbal information, nearly all of the presenters provided written material for your review.

Reviewing this material will provide you with information to incorporate into courses that you will teach. It is resource material with which to develop lesson plans and activities for your classes.

Eight weeks have now passed since the workshop was provided. Please indicate to what degree you have reviewed and used in class information and material related to the following presentations.

1.
FIRST, please circle the appropriate response:
Reviewed  1=Not at all  2=Some  3=Sufficiently
Used  1=Not at all  2=Some  3=Sufficiently

SECOND  If you circle a "1" please circle one of the following codes to indicate why:
NT=no time  NI=no interest  NA=not in my area

1. "Fundamentals of secondary education"
   (Mon., M.Sc. Alicia Sequiera, UCR)
   Reviewed  1  2  3
   Used
   1  2  3

2. "Conceptual framework of sustainability: the problem of land use in watershed management"
   (Tue., Dr. Carlos Quesada, UCR)
   Reviewed  1  2  3
   Used
   1  2  3

3. "Protected areas and sustainable development"
   (Tue., Dr. Miguel Cifuentes, WWF)
   Reviewed  1  2  3
   Used
   1  2  3

4. "Theory and practice of environmental protection"
   (Wed., M.Sc. Juana Coto, UNA)
   Reviewed  1  2  3
   Used
   1  2  3

5. "Aspects of the environmental protection legislation"
   (Wed., Bernal Gutierrez, CEE)
   Reviewed  1  2  3
   Used
   1  2  3

6. Discussion with Ricardo Ramírez, MEP (Wed., p.m.)
   Reviewed
   1  2  3
   Used
   1  2  3
7. "Importance of the agriculture and livestock sector"  
(Th., Dr. Alvaro Jimenez)  
Reviewed: 1 (NT) 2 (NI) 3 (NA)  
Used: 1 (NT) 2 (NI) 3 (NA)  

8. "Structural adjustment programs"  
(Th., M.Sc. Pedro Cusianovich R.)  
Reviewed: 1 (NT) 2 (NI) 3 (NA)  
Used: 1 (NT) 2 (NI) 3 (NA)  

9. "Important aspects of the student-teacher relationship"  
(Th., M.Sc. Florestella Bonilla, UCR)  
Reviewed: 1 (NT) 2 (NI) 3 (NA)  
Used: 1 (NT) 2 (NI) 3 (NA)  

10. Field trip to Guayabo  
(Fri., M.Sc. Sebastián Salazar)  
Reviewed: 1 (NT) 2 (NI) 3 (NA)  
Used: 1 (NT) 2 (NI) 3 (NA)  

11. There are various reasons you may have been unable to review and/or use some or much of the above mentioned material. Please describe why it may have been difficult for you so far to review and/or use what was provided from the workshop:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

12. Considering the workshop themes, presentations, discussions, materials provided, and the twelve lesson plans developed, how well prepared do you feel you are to teach several topics within the following three technical areas? Please circle the appropriate response for each of the following items, using the rating scale below:

1=Unprepared  2=Slightly Prepared  3=Prepared  4=Well Prepared  

3.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1=Unprepared</td>
<td>2=Slightly Prepared</td>
<td>3=Prepared</td>
<td>4=Well Prepared</td>
</tr>
</tbody>
</table>

A. Sustainable agriculture

1. Land use in watershed management
   - 1 2 3 4
2. Protected areas and sustainable development
   - 1 2 3 4

B. Environmental protection

1. Concepts and action in environmental protection
   - 1 2 3 4
2. Legislative aspects of environmental protection
   - 1 2 3 4

C. Importance of the agricultural sector

1. Importance of the agricultural sector
   - 1 2 3 4
2. Structural adjustment and agriculture
   - 1 2 3 4

It will help you to improve and enrich your teaching if you continue to review the material you obtained from the workshop. Enjoy reviewing the materials!

SECTION II: LESSON PLANS, ACTIVITIES AND PROJECTS

As you will recall, workshop participants developed 12 plans for teaching students about topics related to the three major workshop themes. Please respond to the following by circling an answer and/or writing comments.

1. Has the development of lesson plans at the workshop been helpful?
   (Please circle) Yes No Somewhat
   Why? Please explain: __________________________________________
   __________________________________________
   __________________________________________

4.
2. How many of the 12 plans have you reviewed or used since the workshop ended? (Please circle the appropriate response)

<table>
<thead>
<tr>
<th>Reviewed</th>
<th>0</th>
<th>1-3</th>
<th>4-6</th>
<th>7-9</th>
<th>10-12</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>0</td>
<td>1-3</td>
<td>4-6</td>
<td>7-9</td>
<td>10-12</td>
<td>Unsure</td>
</tr>
</tbody>
</table>

3. How many of the 12 plans do you think you might use in your courses over the next 2 years? (Please circle)

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1-3</th>
<th>4-6</th>
<th>7-9</th>
<th>10-12</th>
<th>Unsure</th>
</tr>
</thead>
</table>

4. Do you plan to develop more teaching plans using the materials provided during the workshop over the next 2 years? (Please circle) Yes No Unsure

SECTION III: SHARING WORKSHOP INFORMATION AND MATERIALS

One major expectation of the workshop is that information and materials would be shared by participants with appropriate colleagues at their schools who did not participate.

1.1 Do you believe that you developed a useful plan to disseminate workshop information and materials to appropriate teachers at your school? (Please circle your response)

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

1.2 Have you used this plan to share workshop information at your CTP? (Please Circle)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Not yet</th>
</tr>
</thead>
</table>

1.3 If you answered "No" or "Not yet" to No. 1.2, please go to No. 2.1 on the following page.

If you answered "yes" to No. 1.2, please answer the following:

Briefly describe how you shared workshop information and materials with appropriate teachers at your high school:

______________________________________________________________________

______________________________________________________________________

(continued on the following page)

5.
2.1 Did you develop a plan to share some aspect(s) of the workshop information and/or materials within your community? (Please circle your response)

Yes No Not yet

2.2 If you answered "No" or "Not yet" to No. 2.1, please go to No. 3.1 below.

If you answered "Yes" to No. 2.1 above, please answer the following:

Briefly describe how you shared workshop information and/or materials within your community:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3.1 Do you think that attending the workshop helped you to develop useful plans for disseminating information to other teachers and/or your community? (Please circle your response)

Disagree Slightly agree Agree Strongly agree

3.2 Please comment on what aspects of the workshop were most and/or least helpful to you for planning to share information:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
4. It is important for teachers to obtain new information. After the workshop, how well prepared do you feel you are to share information, lesson plans, and workshop materials with colleagues at your CTP on topics in the following three technical areas? Please circle the appropriate response for each of the following topics, using the rating scale below:

1=Unprepared 2=Slightly Prepared 3=Prepared 4= Well Prepared

A. Sustainable agriculture
   1. Land use in watershed management
      1 2 3 4
   2. Protected areas and sustainable development
      1 2 3 4

B. Environmental protection
   1. Concepts and action in environmental protection
      1 2 3 4
   2. Legislative aspects of environmental protection
      1 2 3 4

C. Importance of the agricultural sector
   1. Importance of the agricultural sector
      1 2 3 4
   2. Structural adjustment and agriculture
      1 2 3 4

5. Reflecting on the workshop provided August 8-12, 1994, are there any further comments you wish to make:

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

7.
Thank you for all of the useful information you have provided. This is the fourth and final workshop follow-up questionnaire. Congratulations!

You will be provided a copy of the survey results towards the end of 1994.

Keep up the good work teaching and sharing ideas, information and materials provided through the workshop. Best wishes for success in your endeavors!
Instructions: Code No. ___ ___ ___ ___ 

1. **FIRST:** Please write the last 4 numbers from your identification card in the above space titled "Code No. ___ ___ ___ ___" on each one of the pages of this questionnaire. (Very important... thank you!)

2. Please complete each of the sections that follow according to the instructions provided.

*--------------------*

**SECTION 1: IN-SERVICE TRAINING EXPERIENCE AND WORKSHOP EXPECTATIONS**

1. What in-service training programs have you attended in the last five years? Please describe below:

<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Theme/Title</th>
<th>Duration</th>
<th>Program Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

2.A. How important do you believe teacher in-service training programs to be? (Please circle one response):

Not Important    Important    Extremely Important    Unsure

B. Please explain the response you chose for 2.A:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

1.
3. How often do you think high school teachers should attend in-service training programs? (Please circle one response):

Every Month Every 3-4 Months 2 Times Per Year Yearly
Every 2 Years Every 3 Years Every 4-5 Years Unsure

4. There are many possible reasons for attending an in-service training workshop. Please indicate the importance to you of each of the following reasons for your attending this workshop. Circle the number of the most appropriate response for each of the following items, using the rating scale below:

1=Unimportant 2=Somewhat Important 3=Important 4=Very Important

U. S.I. I. V.I.

4.1 To increase my technical knowledge in order to help meet CTP curriculum demands
1 2 3 4

4.2 To improve my teaching abilities following current MEP guidelines
1 2 3 4

4.3 To improve my salary
1 2 3 4

4.4 To increase my prestige
1 2 3 4

4.5 To improve my professional service to my community
1 2 3 4

4.6 To be able to exchange ideas with other professionals in my field
1 2 3 4

4.7 To escape the ordinary classroom routine
1 2 3 4

4.8 Curiosity about an in-service training program provided by S del A UCR
1 2 3 4

4.9 I asked to attend
1 2 3 4

4.10 I was told to attend
1 2 3 4

4.11 I wanted to attend because colleagues from my CTP were attending
1 2 3 4

2.
<table>
<thead>
<tr>
<th>Code No.</th>
<th>Description</th>
<th>U.</th>
<th>S.I.</th>
<th>I.</th>
<th>V.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.12</td>
<td>To maintain my current skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.13</td>
<td>To better meet the requirements of my CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.14</td>
<td>To review my commitment to my profession</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.15</td>
<td>To learn from the interaction with other professionals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.16</td>
<td>To help me obtain leadership capabilities for my profession</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.17</td>
<td>To prepare myself to better meet changing emphases in professional responsibilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.18</td>
<td>To acquire new professional knowledge and skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.19</td>
<td>To look closely at my professional role and/or its practice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.20</td>
<td>To help me keep abreast of new developments in my field</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.21</td>
<td>To help me increase the likelihood that my students are better served</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.22</td>
<td>To help me be more competent in my current work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.23</td>
<td>To increase the likelihood of my advancement/promotion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.24</td>
<td>To be challenged by the ideas of my colleagues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>
5. Please list three of the major expectations you have regarding this workshop:

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<tbody>
<tr>
<td>4.25</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.26</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.27</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.28</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.29</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
SECTION II: PARTICIPANT BACKGROUND

1. Highest academic degree obtained? 1. ____________________________

2. In what area is your degree? 2. ____________________________

3. From what academic institution did you obtain your degree? 3. ____________________________

4. For how many years total have you been a high school teacher? 4. ____________________________

5. How well do you feel prepared in technical areas? Please circle the best response:
   Unprepared    Somewhat Prepared    Prepared    Well Prepared

6. How well prepared do you feel you are in pedagogy? Please circle the best response:
   Unprepared    Somewhat Prepared    Prepared    Well Prepared

7. Please list all subjects that you currently teach.
   __________________________________________________________________________
   __________________________________________________________________________

8. Please list other subjects you have taught in the last 5 years.
   __________________________________________________________________________
   __________________________________________________________________________

9. Which three subjects do you most enjoy teaching?
   ____________________________  ____________________________  ____________________________
10. In addition to teaching, please list any other responsibilities that you have at your high school:

________________________________________________________________________
________________________________________________________________________

11. What is your present position title? 11.__________________________

12. There are many occupations. How would you rate your satisfaction with your occupation as a teacher? (Please circle the appropriate response):

Not Satisfied Slightly Satisfied Satisfied Highly Satisfied

13. What is your age group? (Mark with an "X")

____ 20-25 years ____ 31-35 years ____ 41-45 years

____ 26-30 years ____ 36-40 years ____ more than 45 years

14. ____ Male ____ Female (Mark with an "X")

15. What is your marital status?

____ Married ____ Single ____ Other

16. For how long have you lived in the Atlantic Region? 16.____________________

17. In which region did you grow up? 17.____________________

Thank you for completing this questionnaire.
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2nd IN-SERVICE TRAINING WORKSHOP FOR TEACHERS FROM THE
PROFESSIONAL TECHNICAL HIGH SCHOOLS IN COSTA RICA'S ATLANTIC REGION
June 1-3, 1995
Atlantic Region Campus, University of Costa Rica

QUESTIONNAIRE 2
June 3, 1995

Instructions:

Code No. __ __ __ __

1. **FIRST:** Please write the last 4 numbers from your identification card (or the special number that you selected for use on these questionnaires) in the above space titled "Code No. __ __ __ __" ON EACH ONE of the pages of this questionnaire. (This is very important... thank you!)

2. Please complete each of the sections that follow according to the instructions provided.

SECTION I: IN-SERVICE TRAINING EXPERIENCE & PERCEIVED WORKSHOP BENEFITS

1. There are many ways a participant can benefit from attending an in-service training workshop. Please indicate the level of benefit you have gained from attending this workshop. Place a circle around the number of the most appropriate response for each item below, using the following rating scale:

<table>
<thead>
<tr>
<th>Benefit Description</th>
<th>Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increased my technical knowledge to help meet CTP curriculum demands</td>
<td>1=No/None</td>
</tr>
<tr>
<td>2. Improved my ability to follow current MEP educational guidelines</td>
<td>2=Slightly</td>
</tr>
<tr>
<td>3. Will improve my potential salary level</td>
<td>3=Satisfactory</td>
</tr>
<tr>
<td>4. Will increase my prestige</td>
<td>4=Greatly</td>
</tr>
<tr>
<td>5. Will improve my professional service to my community</td>
<td></td>
</tr>
<tr>
<td>6. Exchanged ideas with other professionals in my field</td>
<td></td>
</tr>
<tr>
<td>7. Stimulated me to improve my classroom routine</td>
<td></td>
</tr>
</tbody>
</table>

No/None Slightly Satisfactory Greatly
1.8 I learned more about the S. del Atlantico's, UCR teacher training capabilities
1.9 I am now familiar with the S. del Atlantico facilities and resources
1.10 Degree pleased with my decision to attend
1.11 Colleagues from my high high school did or would have improved my experience
1.12 Helped me maintain my current abilities
1.13 Will allow me to better meet the needs of my high school
1.14 Helped me review my commitment to my profession
1.15 Learned from interaction with other professionals
1.16 Helped me develop some leadership capabilities related to my work
1.17 I was able to contemplate changing emphases of my present professional responsibilities
1.18 Developed some new professional knowledge and/or skills
1.19 Sharpened my perspective of my professional role or practice
1.20 I became more informed of new developments in my field

Code No. __ __ __

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<thead>
<tr>
<th>N.</th>
<th>P.</th>
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<tbody>
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<tr>
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</tbody>
</table>
1.21 Helped me increase the likelihood that my students are better served

1.22 Will help me be more competent in my current job

1.23 Will increase the likelihood for me to advance in my present work position

1.24 I was stimulated by the ideas of my professional colleagues

1.25 Will improve my professional service to students, high school, and community

1.26 Obtained new teaching materials to take back to my classes

1.27 Obtained information to share with my high school colleagues

1.28 Will improve my teaching skills

1.29 Will help me reflect on the value of my professional responsibilities

1.30 Please list the three most important benefits that you derived from participating in the workshop:

1. 

2. 

3. 

3.
2. There were sessions during the workshop on the development of lesson plans and plans for sharing workshop information and materials with colleagues at your CTP. Please evaluate these two activities in regards as to how helpful they will be to you as a teacher, using the following rating scale:

1=Not Helpful  2=Slightly Helpful  3=Helpful  4=Very Helpful

<table>
<thead>
<tr>
<th></th>
<th>N.H</th>
<th>S.H.</th>
<th>H.</th>
<th>V.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 a) Sessions on development of lesson plans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Methodology/process</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c) Results: lesson plans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Comments on this activity:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Code No. __ __ __ __

<table>
<thead>
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<th>N.H</th>
<th>S.H.</th>
<th>H.</th>
<th>V.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 a) Sessions on development of plans to disseminate workshop information and materials to your colleagues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Methodology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c) Results: A plan for use in your high school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Please explain your rating of this activity:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
SECTION II: TECHNICAL AND APPLIED ASPECTS OF THE WORKSHOP

1. A high school teacher is often asked to teach several different courses. Sometimes new courses cover unfamiliar areas. Considering the workshop presentations, the material provided, and the lesson plans developed, do you feel better prepared to teach several topics within the following three technical areas? Please circle the appropriate response for each of the following items, using the rating scale below:

1=Unprepared  2=Slightly Prepared  3=Better Prepared  4=Much Better Prepared

1. One of the workshop activities was the development of lesson plans related to the three major themes. How beneficial was this activity for you? (Please circle best response)

Not helpful  Slightly helpful  Helpful  Very helpful

2. In a similar future workshop, how much time should be spent for lesson plan development? (Please circle best response):

No time  Less time  About the same  More time  Much more time

3. Would you prefer working on development of lesson plans alone or in a group? (Please circle best response):

Alone  Small group (2-4)  Larger group (5-8)

Comments/suggestions regarding these activities:

4. One of the workshop activities consisted of the development of plans for sharing information, lesson plans, and materials with other teachers at your CTP. How useful was this activity for you? (Please circle best response)

Not helpful  Slightly helpful  Helpful  Very helpful

5. In a future similar workshop, how much time should be spent on the development of plans for information sharing? (Please circle best response):

No time  Less time  About the same  More time  Much more time
6. Would you prefer working on development of a plan for information sharing alone or in a group? (Please circle best response):

Alone    Small group (2-4)    Larger group (5-8)

Please write down suggestions regarding this activity in future workshops:
__________________________________________________________________________________
__________________________________________________________________________________

SECTION III: LOGISTICAL SUPPORT

Your participation in the workshop is important and so is your comfort. Please evaluate the following according to the following scale:

1=Unsatisfactory, 2=Minimally Satisfactory, 3=Satisfactory, 4=Excellent, NA=Not Applicable

1. The participant selection process.
   Comments/suggestions:
   ____________________________________________________________________

2. Transportation provided by UCR.
   Comments/suggestions:
   ____________________________________________________________________

3. Housing on campus.
   Comments/suggestions:
   ____________________________________________________________________
4. Meals provided.  
Comments/suggestions:

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<th>U.</th>
<th>M.S.</th>
<th>S.</th>
<th>E.</th>
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<tbody>
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<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

5. Classroom.  
Comments/suggestions:

6. Length of workshop day.  
Comments/suggestions:

<table>
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<th>M.S.</th>
<th>S.</th>
<th>E.</th>
<th>N.A.</th>
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<td>1</td>
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</tbody>
</table>

7. Support personnel on campus.  
Comments/suggestions:

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<th>M.S.</th>
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<th>E.</th>
<th>N.A.</th>
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</table>

8. Program Speakers:
   Level of competence  
   Appropriateness of presentations  
   Responsiveness to participants' questions
   Comments:

<table>
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<th>M.S.</th>
<th>S.</th>
<th>E.</th>
<th>N.A.</th>
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<td>4</td>
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</tbody>
</table>

9. UCR/ISU program staff
   (coordinators, facilitators):
   Level of competence  
   Attitude during activities  
   Responsiveness/flexibility to meet participants needs.
   Comments:

<table>
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<th>U.</th>
<th>M.S.</th>
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<th>E.</th>
<th>N.A.</th>
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</table>
10. Please comment on the workshop structure overall. Your perspectives are very important.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

11. **VERY IMPORTANT.** Please suggest possible ways that the Sede del Atlántico, UCR could provide you and other CTP teachers with educational and/or technical services and support:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

12. Any other comments or suggestions are welcome:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Your completion of this questionnaire is greatly appreciated. We'll be in touch!
Profesor(a) Participante

I Taller de Actualización para Profesores de Colegios Técnicos Profesionales de la Región Atlántica de Costa Rica
Sede del Atlántico, Universidad de Costa Rica
Turrialba, Costa Rica/8-12 de Agosto de 1994

8 de Agosto de 1994

Estimado(a) Profesor(a):

Se ha diseñado un programa de investigación para evaluar la mejor manera en que la Sede del Atlántico de la Universidad de Costa Rica puede brindar capacitación a profesores y le invitamos a participar en el mismo. A través de su participación voluntaria, se aplicarán cuatro encuestas de aproximadamente 30 minutos cada una. Las primeras dos se aplicarán en la sede del taller el 8 y el 12 de agosto. Las últimas dos serán aplicadas en su colegio entre el 22 y 26 de agosto, y el 5 de octubre de 1994. Este es el primer cuestionario relacionado con este programa de investigación.

Su participación en este estudio proporcionará información muy útil en cuanto a la necesidad de programas de capacitación, el interés de los profesores de la región, y los puntos fuertes y débiles del taller de actualización en el cual usted participa entre el 8 y el 12 de agosto de 1994. También indicará el papel que pueda desempeñar la Sede del Atlántico, UCR en brindar programas de capacitación y actualización en el futuro.

Sus respuestas serán confidenciales. El código de cuatro números que es MUY IMPORTANTE PONER EN CADA PÁGINA DEL CUESTIONARIO será usado solamente por la investigadora para organizar los datos obtenidos de las cuatro encuestas. Ningún nombre, iniciales, u otras características de identificación interesan ni serán proporcionadas a otras personas o usadas en publicaciones que resulten de este estudio.

Le agradecemos su participación en este estudio. A fines de este año, 1994, usted será informado de los resultados del mismo.

Muy atentamente,

[Signature]

Lynne W. Brookes, MSc., M.Ed.
Investigadora, Programa de Doctorado
Iowa State University
I Taller de Actualización para Profesores de Colegios Técnicos de la Región Atlántica de Costa Rica
Sede del Atlántico, Universidad de Costa Rica
8-12 de Agosto de 1994/Turrialba, Costa Rica

Investigación de Lynne W. Brookes, MSc., M.Ed.
Universidad Estatal de Iowa

CERTIFICADO DE CONSENTIMIENTO Y DE CONFIDENCIALIDAD

Estimado participante del Taller:

Se ha diseñado un programa de investigación para evaluar la mejor manera en que la Sede del Atlántico de la Universidad de Costa Rica puede brindar capacitación a profesores y le invitamos a participar en el mismo. A través de su participación voluntaria, se aplicarán cuatro encuestas de aproximadamente 30 minutos cada una en la sede del taller el 8 y el 12 de agosto, en su colegio entre el 22 y 26 de agosto, y el 5 de octubre de 1994. Se contribuirá con información pertinente para el desarrollo de un entendimiento general de la necesidad de tal entrenamiento, el interés de los profesores de la región, los puntos fuertes y los débiles del taller y el papel que pueda desempeñar la UCR/Sede del Atlántico en el ofrecimiento de tales programas de entrenamiento. La evaluación de este programa de entrenamiento en servicio proporcionará información muy útil en la elaboración de talleres similares en el futuro.

Toda la información obtenida se codificará numéricamente de acuerdo al participante. La hoja maestra para estos códigos y los cuestionarios obtenidos de los participantes quedarán en manos de la Investigadora principal en un archivo separado. Ningún nombre, iniciales u otras características de identificación interesan ni serán proporcionadas a otras personas o usadas en publicaciones que resulten de este estudio.

Le invitamos a que haga preguntas pertinentes a esta investigación en cualquier momento. Usted puede retirar su consentimiento y terminar su participación en el estudio en cualquier momento sin miedo de prejuicios u otras consecuencias negativas.

Entiendo que al final de este estudio, seré informado de los resultados del mismo.

Mi firma en este documento significa que he leído y entendido el propósito del estudio, que mi participación es voluntaria y que la confidencialidad será estrictamente mantenida.

Firma del Participante ______________ Fecha ______________
Firma del Testigo ______________ Fecha ______________
INSTRUCCIONES:  

1. PRIMERO: Favor de marcar los últimos 4 números de su cédula de identidad en el espacio arriba denominado "No. de Código _____ _____ _____" en cada una de las páginas de este cuestionario. (Es muy importante... ¡gracias!)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas

***************SECCION I: CAPACITACION, TALLERES DE ACTUALIZACION, Y EXPECTATIVAS***************

1. Describa, por favor, programas de capacitacion y de actualizacion a los que Ud. ha asistido durante los últimos cinco años:

<table>
<thead>
<tr>
<th>Mes/Año</th>
<th>Tema/Nombre</th>
<th>Duración</th>
<th>Impartido Por...</th>
</tr>
</thead>
<tbody>
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</table>

2. a) En su opinión, ¿qué importancia tienen los programas de capacitación y actualización para profesores de los colegios técnicos profesionales ("CTP")? Ponga Ud. un círculo alrededor de una de las respuestas siguientes:

No Importante  Importante  Muy Importante  No Estoy Seguro(a)

b) Por favor, explique la respuesta que Ud. seleccionó en 2.a:


1.
3. En su opinión, ¿con qué frecuencia deben los profesores de los CTP asistir a programas de capacitación/actualización? Ponga un círculo alrededor de una de las respuestas:

<table>
<thead>
<tr>
<th>Opción</th>
<th>Cada Mes</th>
<th>Cada 3-4 Meses</th>
<th>2 Veces al Año</th>
<th>Cada Año</th>
<th>Cada 2 Años</th>
<th>Cada 3 Años</th>
<th>Cada 4-5 Años</th>
<th>No Estoy Seguro(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cada Mes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cada 3-4 Meses</td>
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<td>2 Veces al Año</td>
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<td>Cada Año</td>
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<td>Cada 2 Años</td>
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<td>Cada 3 Años</td>
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<tr>
<td>Cada 4-5 Años</td>
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<tr>
<td>No Estoy Seguro(a)</td>
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</table>

4. Hay muchas razones posibles para asistir un taller de actualización. Indique, por favor, la importancia para Ud. de cada una de las siguientes razones en su decisión de asistir a este taller. Ponga un círculo alrededor del número de la respuesta que corresponde, usando la escala que sigue:

<table>
<thead>
<tr>
<th>Razaón</th>
<th>N.I.</th>
<th>P.I.</th>
<th>I.</th>
<th>M.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Para mejorar mis conocimientos técnicos para poder enseñar</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>mejor el currículo exigido para los CTP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2 Para mejorar mi metodología de enseñanza de acuerdo con las</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>sugerencias de MEP</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.3 Para mejorar el salario</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.4 Para aumentar mi prestigio</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.5 Para mejorar mi servicio profesional a la comunidad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.6 Para poder intercambiar ideas con otros profesionales en mi campo</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.7 Para poder salir de la rutina ordinaria de la clase</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.8 Curiosidad en cuanto a un programa de actualización brindado por</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>la Sede del Atlántico, UCR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.9 Solicite asistir</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.10 Me obligaron a asistir</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.11 Quise asistir porque colegas de mi CTP iban a asistir</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>No. de Código:</td>
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<td>---</td>
</tr>
<tr>
<td>4.12</td>
<td>Para mantener mis destrezas como profesor</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.13</td>
<td>Para satisfacer mejor los requisitos de mi CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.14</td>
<td>Para repasar mi compromiso con mi profesión</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.15</td>
<td>Para aprender de la interacción con otros profesionales</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.16</td>
<td>Para obtener destrezas de liderazgo relacionadas a mi profesión</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.17</td>
<td>Para prepararme mejor para los cambios de énfasis en mis responsabilidades profesionales</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.18</td>
<td>Para adquirir nuevos conocimientos y destrezas profesionales</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.19</td>
<td>Para definir mejor mi papel profesional y/o la práctica de él</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.20</td>
<td>Para ayudarme a estar al tanto de cambios en mi campo</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.21</td>
<td>Para ayudarme a aumentar la posibilidad de que mis estudiantes estén mejor atendidos</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.22</td>
<td>Para ayudarme a ser más competente en mi trabajo</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.23</td>
<td>Para aumentar la posibilidad de avanzar mi grado profesional</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.24</td>
<td>Estar desafiado por las ideas de mis colegas</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
No. de Código: __ __ __

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<tbody>
<tr>
<td>4.25</td>
<td>Para aumentar mi servicio profesional a los estudiantes, al CTP, y a la comunidad</td>
<td>1</td>
<td>2</td>
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<tr>
<td>4.26</td>
<td>Conseguir nuevos materiales didácticos para mis cursos</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4.27</td>
<td>Conseguir información para compartir con mis colegas del CTP</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4.28</td>
<td>Mejorar mis habilidades de enseñanza</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4.29</td>
<td>Para reflexionar sobre el valor de mis responsabilidades profesionales</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

5. Favor de listar tres de las expectativas más importantes que Ud. trae en cuanto a los beneficios que Ud. pueda recibir durante este taller de actualización:

1. ___________________________________________________________________

2. ___________________________________________________________________

3. ___________________________________________________________________

SECTION II: FAMILIARIDAD CON AREAS TECNICAS ESPECIFICAS

1. Frecuentemente un profesor de colegio enseña varios cursos diferentes. De vez en cuando la materia de un curso es nuevo y/o no es muy conocido. ¿Qué tan familiarizado o preparado se siente Ud. en este momento en cuanto a la enseñanza de aspectos técnicos dentro de los siguientes tópicos? Por favor, ponga un círculo alrededor del número de la respuesta más apropiada para cada uno de los tópicos técnicos que siguen:

1=No Preparado 2=Poco Preparado 3=Preparado 4=Bien Preparado

<p>| | | | |</p>
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<td>N.P.</td>
<td>P.P.</td>
<td>P.</td>
<td>B.P.</td>
</tr>
</tbody>
</table>

A. Agricultura Sostenible

1. El uso de la tierra en el manejo de cuencas | 1 | 2 | 3 | 4 |

2. Areas protegidas y el desarrollo sostenible | 1 | 2 | 3 | 4 |

4.
No. de Código:   

N.P.  P.P.  P.  B.P.  

B. Protección del Medio Ambiente  
1. Concepto y la acción de la protección del medio ambiente 1  2  3  4  
2. Aspectos sobre la legislación de la protección del medio ambiente 1  2  3  4  

C. Importancia del sector agropecuario  
1. Importancia del sector agropecuario 1  2  3  4  
2. Programa de ajuste estructural y la agricultura 1  2  3  4  

2. Es importante para los profesores disponer de nueva información. A menudo es difícil de adquirir. ¿Tienen en su colegio métodos que han funcionado para difundir información técnica y didáctica entre los profesores?  

Encierre en un círculo su respuesta: Sí  No  No sé  

3. ¿Qué tan bien preparado se siente Ud. para difundir información a otros profesores de su CTP sobre aspectos de las siguientes tres áreas técnicas? Por favor, encierre en un círculo la respuesta más apropiada para cada uno de los siguientes tópicos, usando la escala que sigue:  

1=No Preparado 2=Poco Preparado 3=Preparado 4=Bastante Preparado  

A. Agricultura Sostenible  
1. El uso de la tierra en el manejo de cuencas 1  2  3  4  
2. Areas protegidas y el desarrollo sostenible 1  2  3  4  

B. Protección del Medio Ambiente  
1. Concepto y la acción de la protección del medio ambiente 1  2  3  4  
2. Aspectos sobre la legislación de la protección del medio ambiente 1  2  3  4  

5.
C. **Importancia del sector agropecuario**

1. Importancia del sector agropecuario  
   1  2  3  4

2. Programa de ajuste estructural y la agricultura  
   1  2  3  4

**SECTION III: ANTECEDENTES DEL (LA) PARTICIPANTE**

1. Grado académico más alto obtenido:  
   1. ____________

2. ¿En cuál área es su grado?  
   2. ____________

3. Institución en dónde obtuvo el grado:  
   3. ____________

4. Años de ser profesor de CTP:  
   4. ____________

5. ¿Qué tan bien preparado(a) se siente en el área técnica? Por favor, encierre en un círculo la respuesta adecuada:
   - No Preparado  - Poco Preparado  - Preparado  - Bastante Preparado

6. ¿Qué tan bien preparado(a) se siente en el área pedagógica? Por favor, encierre en un círculo la respuesta adecuada:
   - No Preparado  - Poco Preparado  - Preparado  - Bastante Preparado

7. Favor de listar todos las materias que Ud. está enseñando este año:

   __________________________________________
   __________________________________________
   __________________________________________

8. Favor de listar **otros cursos** que Ud. ha impartido en los últimos cinco años:

   __________________________________________
   __________________________________________
   __________________________________________

9. Indique las tres materias que más le gusta enseñar:

   __________________  __________________  __________________
No. de Código: __ __ __ __

10. Además de enseñar mencione otras responsabilidades que tiene en su colegio:

________________________________________________________________________
________________________________________________________________________

11. ¿Cuál es su cargo actual? 11.________________________

12. Existen otros trabajos o profesiones. ¿Qué tan satisfecho está Ud. con su trabajo como profesor? Por favor, encierre en un círculo la respuesta adecuada:

No Satisfecho  Poco Satisfecho  Satisfecho  Muy Satisfecho

13. ¿Cuál es su grupo de edad? (Marque con "X")

___ 20-25 años  ___ 31-35 años  ___ 41-45 años

___ 26-30 años  ___ 36-40 años  ___ más de 45 años

14. ___ Sexo Masculino  ___ Sexo Femenino (Marque con "X")

15. Estado civil: (Marque con "X")

___ Casado(a)  ___ Soltero(a)  ___ Otro

16. ¿Tiempo de vivir en la Región Atlántica? ________ años

17. ¿De cuál región procede Ud.? 17. ______________________

Muchas gracias por completar este cuestionario.

Ud. será informado de los resultados a finales de 1994.
Profesor/a Participante
Taller de Actualización para Profesores de Colegios Técnicos Profesionales de la Región Atlántica de Costa Rica
La Sede del Atlántico, Universidad de Costa Rica
Turrialba, Costa Rica/8-12 de Agosto de 1994

12 de Agosto de 1994

Estimado/a Profesor/a:

Se ha diseñado este programa de investigación para evaluar la mejor manera en que la Sede del Atlántico de la Universidad de Costa Rica puede brindar capacitación a profesores y le invitamos a participar en el mismo. A través de su participación voluntaria, se aplicarán cuatro encuestas de aproximadamente 30 minutos cada una. La primera se proporcionó en la sede del taller el 8 de agosto. Esta, la segunda, se proporciona el 12 de agosto en la misma sede. Las últimas dos serán proporcionadas en su colegio entre el 22 y 26 de agosto, y el 5 de octubre de 1994. Este es el segundo questionario relacionado a este programa de investigación.

Su participación en este estudio proporcionará información muy útil en cuanto a la necesidad para programas de capacitación, el interés de los profesores de la región, y los puntos fuertes y los débiles del taller de actualización en el cual Ud. participó entre el 8 de agosto y el 12 de agosto de 1994. También indicará el papel que pueda desempeñar la Sede del Atlántico, UCR en brindar programas de capacitación y actualización en el futuro.

Sus respuestas serán confidenciales. El código de cuatro números QUE ES MUY IMPORTANTE PONER EN CADA PAGINA DEL CUESTIONARIO será usado solamente por la investigadora para organizar los datos obtenidos por las cuatro encuestas. Ningún nombre, iniciales, u otras características de identificación interesan ni serán proporcionadas a otras personas o usadas en publicaciones que resulten de este estudio.

Le agradecemos su participación en este estudio. Al fines de este año, 1994, Ud. será informado de los resultados del mismo.

Muy atentamente,

Lynne W. Brookes, MSc., M.Ed.
Investigadora, Programa de Doctorado
Iowa State University
Instrucciones:

1. PRIMERO: Favor de marcar los últimos 4 números de su tarjeta de identidad (o el número especial que usted seleccionó para uso en estos cuestionarios) en el espacio arriba denominado "No. de Código ___ ___ ___ ___" EN CADA UNA de las páginas de este cuestionario. (Es muy importante... ¡gracias!)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas.

SECCION I: I TALLER DE ACTUALIZACION: EXPERIENCIA Y BENEFICIOS PERCIBIDOS

1. Hay muchas maneras en que un participante puede beneficiarse al asistir a un taller de actualización. Indique, por favor, el grado de beneficio que obtuvo usted por asistir a este taller. (Ponga un círculo alrededor del número de la respuesta que corresponda, usando la escala que sigue:)

1= Nada/No  2= Poco  3= Suficientemente  4= Mucho/Muy

<table>
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<th>N.</th>
<th>P.</th>
<th>S.</th>
<th>M.</th>
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<tbody>
<tr>
<td>1.1 Aumentó mis conocimientos técnicos para poder enseñar mejor el currículo exigido para los CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Mejorará mi metodología de enseñanza de acuerdo con las sugerencias del MEP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.3 Mejorará el salario</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.4 Aumentará mi prestigio</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>1.5 Mejorará mi servicio profesional a la comunidad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.6 Intercambié ideas con otros profesionales en mi campo</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>1.7 Me estimuló a mejorar la rutina ordinaria de las clases</td>
<td>1</td>
<td>2</td>
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<tr>
<td>No. de Codigo</td>
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<td>1.8</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Aprendí más sobre la capacidad de la Sede del Atlántico, UCR, de brindar programas de actualización</td>
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<tr>
<td>1.9</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>Estoy familiarizado(a) con las facilidades y recursos de la Sede del Atlántico</td>
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<tr>
<td>1.10</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Complacencia de haber asistido el taller</td>
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<tr>
<td>1.11</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>La asistencia de otros profesores de mi CTP, mejoró o habría mejorado la experiencia del taller</td>
<td></td>
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<td>1.12</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Me va a ayudar mantener con mis destrezas como profesor</td>
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<td>1.13</td>
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<tr>
<td>Voy a poder satisfacer mejor los requisitos de mi CTP</td>
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<td>1.14</td>
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<tr>
<td>Me permitió repasar mi compromiso con mi profesión</td>
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<td>1.15</td>
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<tr>
<td>Aprendí de la interacción con otros profesionales</td>
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<td>1.16</td>
<td>1</td>
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<tr>
<td>Me permitió desarrollar unas destrezas de liderazgo relacionadas a mi profesión</td>
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<tr>
<td>1.17</td>
<td>1</td>
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<tr>
<td>Me va a ayudar prepararme mejor para los cambios de énfasis en mis responsabilidades profesionales</td>
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<td>1.18</td>
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<tr>
<td>Adquirí nuevos conocimientos y destrezas profesionales</td>
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<td>1.19</td>
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<tr>
<td>Me ayudó a definir mejor mi papel profesional y/o la práctica de él</td>
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<tr>
<td>1.20</td>
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<tr>
<td>Me ayudó a estar más al tanto de cambios en mi campo</td>
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</tbody>
</table>
1.21 Va a aumentar la posibilidad de que mis estudiantes estén mejor atendidos 1 2 3 4
1.22 Me va a ayudar a ser más competente en mi trabajo 1 2 3 4
1.23 Va a aumentar la posibilidad de avanzar mi grado profesional 1 2 3 4
1.24 Estuve estimulado por las ideas de mis colegas 1 2 3 4
1.25 Va a aumentar mi servicio profesional a los estudiantes, al CTP, y a la comunidad 1 2 3 4
1.26 Conseguí nuevos materiales didácticos para mis cursos 1 2 3 4
1.27 Conseguí información para compartir con mis colegas del CTP 1 2 3 4
1.28 Mejorará mis habilidades de enseñanza 1 2 3 4
1.29 Me ayudó a reflexionar sobre el mérito de mis responsabilidades profesionales 1 2 3 4
1.30 Favor de listar tres beneficios más importantes que usted consiguió a causa de este taller de actualización:
1. ____________________________________________
2. ____________________________________________
3. ____________________________________________

2. Varias presentaciones y actividades tomaron lugar durante el taller. Por favor, evalúe cada presentación/actividad y los materiales recibidos en cuanto a su utilidad a usted como profesor usando la escala que sigue. Ponga un círculo alrededor del número de la respuesta más apropiada.
1= Nada útil 2= Un poco útil 3= Útil 4= Muy Útil
3. ____________________________________________
No. de Código

<table>
<thead>
<tr>
<th>1= Nada Útil</th>
<th>2= Un poco Útil</th>
<th>3= Útil</th>
<th>4= Muy Útil</th>
</tr>
</thead>
</table>

### 2.1 a) "Fundamentos de la educación secundaria" (lunes, M.Sc. Alicia Sequeira, UCR)

- Materiales relacionados

### 2.2 a) "Marco conceptual de la sostenibilidad: la problemática del uso de la tierra en el manejo de las cuencas" (martes, Dr. Carlos Quesada, UCR)

- Materiales relacionados

### 2.3 a) "Las áreas protegidas y el desarrollo sustentable" (miércoles, Dr. Miguel Cifuentes, WWF)

- Materiales relacionados

### 2.4 a) "Concepto y la acción de la protección del medio ambiente" (miércoles, M.Sc. Juana Coto, UNA)

- Materiales relacionados

### 2.5 a) "Aspectos sobre la legislación de la protección del medio ambiente" (miércoles, Bernal Gutiérrez, CEE)

- Materiales relacionados

### 2.6 a) Discurso con Ricardo Ramírez, MEP (miércoles, noche)

- Materiales proporcionados por el MEP

### 2.7 a) "Importancia del sector agropecuario" (jueves, Dr. Alvaro Jiménez)

- Materiales relacionados
<table>
<thead>
<tr>
<th>2.8 a) &quot;Programas de ajuste estructural&quot; (jue; M.Sc. Pedro Cussianovich R.)</th>
<th>1</th>
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<tbody>
<tr>
<td>b) Materiales relacionados</td>
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<tr>
<td>2.9 a) &quot;Aspectos importantes en la relación alumnos-profesor&quot; (jue; M.Sc. Florystella Bonilla, UCR)</td>
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<td>4</td>
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<tr>
<td>b) Materiales relacionados</td>
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<tr>
<td>2.10 a) Gira a Guayabo (vier., M.Sc. Sebastián Salazar)</td>
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<td>4</td>
</tr>
<tr>
<td>b) Materiales e información relacionados</td>
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<td>4</td>
</tr>
<tr>
<td>Comentarios/sugerencias sobre cualquiera de las presentaciones mencionadas arriba (2.1 - 2.10) Por favor, identifique por número.</td>
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</table>

1= Nada útil 2= Un Poco Util 3= Util 4= Muy Util

| 2.11 a) Sesiones de trabajo sobre la elaboración de planes de enseñanza, actividades, proyectos, etc. | 1 | 2 | 3 | 4 |
| b) Metodología, guía, procedimiento | 1 | 2 | 3 | 4 |
| c) Los resultados: 12 planes | 1 | 2 | 3 | 4 |
| Comentarios/sugerencias en cuanto a estas actividades: |

5.
2.12 a) Sesiones de trabajo sobre la elaboración de planes para compartir la información y materiales del taller con los otros profesores de su colegio que no asistieron al taller.

b) Metodología

c) Resultados: Un plan práctico a utilizar para difundir/compartir información y materiales con los profesores de su colegio que no asistieron al taller

Comentarios/sugerencias en cuanto a estas actividades:

SECTION II: ASPECTOS TECNICOS Y APLICADOS DEL TALLER:

1. Frecuentemente un profesor de colegio enseña varios cursos diferentes. De vez en cuando la materia de un curso es nuevo y/o no es muy conocido. Tomando en consideración los temas presentados, las presentaciones, las discusiones, los materiales proporcionados, y la elaboración de 12 planes de enseñanza, ¿Qué tan preparado se siente Ud. en cuanto a la enseñanza de varios aspectos técnicos dentro de los tres siguientes topicos? Favor, ponga un círculo alrededor del número de la respuesta más apropiada para cada uno de los tópicos técnicos que siguen:

A. Agricultura Sostenible

1. El uso de la tierra en el manejo de cuencas

2. Areas protegidas y el desarrollo sostenible
No. de Código: __ __ __ __

N.P. U.P.P. P. B.P.

B. Protección del Medio Ambiente

1. Concepto y la acción de la protección del medio ambiente 1 2 3 4

2. Aspectos sobre la legislación de la protección del medio ambiente 1 2 3 4

C. Importancia del sector agropecuario

1. Importancia del sector agropecuario 1 2 3 4

2. Programa de ajuste estructural y la agricultura 1 2 3 4

2. Una de las actividades del taller consistió en la elaboración de planes (actividades, proyectos) para la enseñanza relacionados a los tres temas tratados. ¿Qué tan beneficioso cree usted que fue esta actividad? Encierre en un círculo la respuesta apropiada:

No fue útil Un poco útil Útil Muy útil

3. En un futuro taller similar, ¿cuánto tiempo debe ser destinado a la elaboración de planes de enseñanza? Encierre en un círculo su respuesta.

Nada Menos tiempo Lo mismo Más tiempo Mucho más tiempo

4. ¿Prefiere usted trabajar en la elaboración de planes de enseñanza solo(a) o como parte de un grupo? Encierre su respuesta en un círculo.

Solo(a) En un grupo pequeño (2-4) En un grupo más grande (5-8)

Comentarios/sugerencias en cuanto a estas actividades:

5. Es importante para los profesores disponer de nueva información. Después del taller, ¿Qué tan bien preparado(a) se siente Ud. para compartir/difundir información, planes de enseñanza, y materiales del taller a otros profesores de su CTP sobre aspectos de las siguientes tres áreas técnicas? Por favor, encierre en un círculo la respuesta más apropiada para cada uno de los siguientes tópicos, usando la escala que sigue:

7.
1=No Preparado 2=Un Poco Preparado 3=Preparado 4=Bien Preparado

A. Agricultura Sostenible

1. El uso de la tierra en el manejo de cuencas 1 2 3 4
2. Areas protegidas y el desarrollo sostenible 1 2 3 4

B. Protección del Medio Ambiente

1. Concepto y la acción de la protección del medio ambiente 1 2 3 4
2. Aspectos sobre la legislación de la protección del medio ambiente 1 2 3 4

C. Importancia del sector agropecuario

1. Importancia del sector agropecuario 1 2 3 4
2. Programa de ajuste estructural y la agricultura 1 2 3 4

6. Una de las actividades del taller consistió en la elaboración de planes para compartir/difundir informacion, planes de enseñanza, y materiales del taller con otros profesores de su colegio. En su opinión, ¿Qué tan útil fue esta actividad? Encierre en un círculo la respuesta apropiada:

   No fue Útil  Un poco Útil  Útil  Muy Útil

7. En un futuro taller similar, ¿Cuánto tiempo debe ser proporcionado a la elaboración de planes para compartir/difundir tal información? Encierre en un círculo su respuesta.

   Nada  Menos tiempo  Lo mismo  Más tiempo  Mucho más tiempo

8. ¿Prefiere usted trabajar en la elaboración de tales planes solo(a) o como parte de un grupo? Encierre su respuesta en un círculo.

   Solo(a)  En un grupo pequeño (2-4)  En un grupo más grande (5-8)

Comentarios/sugerencias en cuanto a estas actividades:

______________________________________________________________________________

8.
9. Unos conferencistas presentaron aspectos pedagógicos. ¿Fue esto útil para usted como profesor? (Por favor, encierre su respuesta en un círculo:)

SI  No  No estoy seguro(a)

Por favor escriba cualquier comentario que tenga:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

10. Por favor describa cuáles aspectos pedagógicos serían de su interés en futuros talleres.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

SECCIÓN III: APOYO LOGISTICO

Su participación en el taller es importante. Por favor evalúe los siguientes aspectos de acuerdo a la siguiente escala:

1=Insatis-  2=Poco  3=Satisfactorio  4=Excelente  NA=No Aplic
factorio  Satisfactorio

1. El proceso de selección de participantes.

Commentarios/sugerencias:

____________________________________________________________________

2. Transporte ofrecido por la la U.C.R.

Commentarios/sugerencias:

____________________________________________________________________

3. Alojamiento

____________________________________________________________________
<table>
<thead>
<tr>
<th>4. Alimentación</th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>N.A.</th>
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<tr>
<td>Commentarios/sugerencias:</td>
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<td>5. Aula de clases</td>
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<td>6. Duración de cada día del taller</td>
<td>2</td>
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<td>Commentarios/sugerencias:</td>
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<tr>
<td>7. Personal de apoyo en la Sede</td>
<td>1</td>
<td>2</td>
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<td>Commentarios/sugerencias:</td>
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<td>8. Conferencistas:</td>
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<tr>
<td>Nivel de competencia</td>
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<td>2</td>
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<td>4</td>
<td>N.A.</td>
</tr>
<tr>
<td>Actitud durante la presentación</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N.A.</td>
</tr>
<tr>
<td>Respuesta a las preguntas de los participantes</td>
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<td>N.A.</td>
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<tr>
<td>Commentarios:</td>
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<tr>
<td>9. Personal de UCR y /ISU (coordinadores, facilitadores):</td>
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</tr>
<tr>
<td>Nivel de competencia</td>
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<td>N.A.</td>
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Actitud en las actividades.

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Correspondencia/flexibilidad para satisfacer las necesidades de los participantes.

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<th>3</th>
<th>4</th>
<th>N.A.</th>
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Commentarios:

10. Por favor comente la estructura total del taller. Sus perspectivas son muy importantes.

11. MUY IMPORTANTE. Por favor sugiera posibles formas de cómo la Sede del Atlántico/ UCR podría ofrecerle a Ud. y a otros profesores apoyo y servicios técnicos /educativos:

12. Cualquier otro comentario o sugerencia será bienvenido:

Les agradezco muchísimo el haber completado este cuestionario. Ud. será informado de los resultados del estudio a finales de 1994. NOS VEMOS!
Profesor(a) Participante
I Taller de Actualización para Profesores de Colegios
Técnicos Profesionales de la Región Atlántica de Costa Rica
Sede del Atlántico, Universidad de Costa Rica
Turrialba, Costa Rica/8-12 de Agosto de 1994

22-25 de Agosto de 1994

Estimado(a) Profesor(a):

Este es el tercero de cuatro cuestionarios relacionados con el programa de investigación sobre el I Taller de Actualización brindado por la Sede del Atlántico, UCR.

Su participación en este estudio proporcionará información muy útil en cuanto al papel que pueda desempeñar la Sede del Atlántico, UCR en brindar programas de capacitación y actualización en el futuro.

Sus respuestas serán confidenciales. El código de cuatro números que es MUY IMPORTANTE PONER EN CADA PAGINA DEL CUESTIONARIO será usado solamente por la investigadora para organizar los datos obtenidos de las cuatro encuestas. Ningún nombre, iniciales, u otras características de identificación interesan ni serán proporcionadas a otras personas o usadas en publicaciones que resulten de este estudio.

Le agradecemos su participación en este estudio. A fines de este año, 1994, usted será informado de los resultados del mismo.

Muy atentamente,

Lynne W. Brookes, MSc., M.Ed.
Investigadora, Programa de Doctorado
Iowa State University
CUESTIONARIO 3

22-25 DE AGOSTO DE 1994

Instrucciones: No. de Código __ __ __ __

1. PRIMERO: Favor de marcar los últimos 4 números de su tarjeta de identidad (o el número especial que usted seleccionó para uso en estos cuestionarios) en el espacio arriba denominado "No. de Código __ __ __ __" EN CADA UNA de las páginas de este cuestionario. (Es muy importante... ¡gracias!)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas.

************************************************************************************

SECCION I: INFORMACION Y MATERIALES DEL TALLER

Las tres primarias áreas técnicas a las cual se dirigió el I Taller de Actualización fueron "agricultura sostenible," "protección del medio ambiente," e "importancia del sector agropecuario." Varios tópicos en el área de pedagogía fueron presentados también. Además de presentar información verbalmente, casi todos los conferencistas entregaron material escrito para su revisión y uso.

La revisión de esta material le va a proveer con información para incorporar dentro de los cursos que usted enseña o va a enseñar. Es un recurso didáctico para la elaboración de planes de enseñanza, actividades, y proyectos relacionados con sus cursos.

Solo un poco más de una semana ha pasado desde el taller... Por favor, indique cuánto ha revisado usted la información y materiales relacionados a los siguientes presentaciones.
PRIMERO: Por favor encierre en un círculo su respuesta:

1= Nada  
2= Un poco  
3= Suficientemente

SEGUNDO: Si usted encierre con un círculo un "1," por favor encierre con un círculo uno de los códigos que siguen para indicar por qué:

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<tr>
<th>TI=</th>
<th>NI=</th>
<th>NA=</th>
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<tbody>
<tr>
<td>Tiempo Insuficiente</td>
<td>No Interés</td>
<td>No en mi Area</td>
</tr>
</tbody>
</table>

1. "Fundamentos de la educación secundaria"  
(lun., M.Sc. Alicia Sequiera, UCR)

2. "Marco conceptual de sostenibilidad: La problemática del uso de la tierra en el manejo de cuencas"  
(mar., Dr. Carlos Quesada, UCR)

3. "Las áreas protegidas y el desarrollo sustentable"  
(mar., Dr. Miguel Cifuentes, WWF)

4. "Concepto y acción de la protección del medioambiente"  
(mier., M.Sc. Juana Coto, UNA)

5. "Aspectos sobre la legislación de la protección del medio ambiente"  
(mier., Bernal Gutierrez, CEE)

6. Discusión con Ricardo Ramírez, MEP (mier., noche)

7. "Importancia del sector agropecuario"  
(jue., Dr. Alvaro Jiménez)

8. "Programas de ajuste estructural"  
(jue., M.Sc. Pedro Cussianovich R.)

2.


Le va a ayudar a mejorar y a enriquecer su enseñanza si usted hace el compromiso de revisar la información y materiales que obtuvo del taller. ¿Qué disfrute de la revisión de los materiales!

SECCION II: PLANES DE ENSEÑANZA, ACTIVIDADES, Y PROYECTOS

Como usted recordará, Uds. los participantes del taller elaboraron 12 "planes de enseñanza" para usar en la enseñanza de estudiantes sobre tópicos relacionados a los tres temas principales del taller. Responda por favor a las preguntas siguientes. Encierre su respuesta con un círculo y haga un comentario por favor.

1. ¿Fue útil la elaboración de planes de enseñanza durante el taller?

(Encierre su respuesta con un círculo): SÍ No Un poco

¿Por qué? Explique por favor: _______________________________________

2. ¿Cuántos de los 12 planes de enseñanza ha revisado desde la semana del taller? (Encierre su respuesta en un círculo):

0 1-3 4-6 7-9 10-12 No estoy seguro(a)

3. ¿Cuántos de los 12 planes piensa usted que podría usar en sus cursos en los próximos 2 años? (Encierre su respuesta en un círculo)

0 1-3 4-6 7-9 10-12 No estoy seguro(a)

4. ¿Planea desarrollar más planes de enseñanza utilizando los materiales obtenidos durante el taller en los próximos 2 años?

(Encierre su respuesta en un círculo) SÍ No No estoy seguro(a)
SECCION III: DIFUSION DE INFORMACION Y MATERIALES DEL TALLER

Una importante expectativa del taller es que la información y los materiales sean difundidos por los participantes a colegas de su colegio que no participaron en el taller.

1. ¿En otros eventos de actualización se le ha encargado difundir a otros profesores de su colegio que no asistieron información y/o materiales que usted obtuvo?

   (Encierre su respuesta en un círculo) Sí   No   No estoy seguro(a)

2. ¿Tenía usted un método exitoso para difundir información en su colegio antes del taller al que asistió?

   (Encierre su respuesta en un círculo) Sí   No   No estoy seguro(a)

3.1 ¿Cree que usted ha desarrollado un plan útil para difundir la información y materiales a profesores de su colegio no participantes en el taller? (Encierre su respuesta en un círculo)

   En Desacuerdo   Poco de Acuerdo   De Acuerdo   Muy de Acuerdo

3.2 Por favor, describa brevemente cómo planean en su CTP difundir la información y materiales del taller a profesores no participantes:

   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

4.1 ¿Planea usted difundir algún(os) aspecto(s) de la información y materiales del taller dentro de su comunidad? (Encierre su respuesta en un círculo)

   En Desacuerdo   Poco de Acuerdo   De Acuerdo   Muy de Acuerdo
4.2 Por favor, describa brevemente cómo planean en su comunidad difundir la información y materiales del taller.


5.1 ¿Piensa usted que asistir al taller le ayudó a desarrollar planes útiles para difundir información a otros profesores y/o a su comunidad? (Encierre su respuesta en un círculo)

En Desacuerdo Poco de Acuerdo De Acuerdo Muy de Acuerdo

5.2 Por favor, comente qué aspectos del taller fueron más útiles y/o menos útiles para planear la difusión de información:


6. Reflexionando acerca del taller del 8-12 de agosto de 1994, hay algún comentario adicional que usted desee hacer:


Gracias por la información tan útil que usted ha suministrado. Usted tendrá la oportunidad de contestar preguntas similares en el cuarto y último cuestionario dentro de ocho semanas, el 5 de octubre.

Mantenga su buen trabajo de enseñanza y de difusión de ideas, información, y materiales obtenidos en el taller. ¡Los mejores deseos de éxito en sus labores!
Profesor(a) Participante
I Taller de Actualización para Profesores de Colegios
Técnicos Profesionales de la Región Atlántica de Costa Rica
Sede del Atlántico, Universidad de Costa Rica
Turrialba, Costa Rica/8-12 de Agosto de 1994

5 de Octubre de 1994

Estimado(a) Profesor(a):

Este es el cuarto y último cuestionario de la serie relacionada con el programa de investigación sobre el I Taller de Actualización brindado por la Sede del Atlántico, Universidad de Costa Rica.

Según lo discutido, este cuestionario debe ser completado por todos los participantes del I Taller el 5 de octubre. O el 6 o el 7 de octubre, una persona de la Sede del Atlántico vendrá a su colegio para recoger este cuestionario. Su colaboración está muy apreciada.

Su participación en este estudio proporcionará información muy útil en cuanto al papel que pueda desempeñar la Sede del Atlántico, UCR en brindar programas de capacitación y actualización en el futuro.

Sus respuestas serán confidenciales. El código de cuatro números que es MUY IMPORTANTE PONER EN CADA PÁGINA DEL CUESTIONARIO será usado solamente por la investigadora para organizar los datos obtenidos de las cuatro encuestas. Ningún nombre, iniciales, u otras características de identificación interesan ni serán proporcionadas a otras personas o usadas en publicaciones que resulten de este estudio.

Le agradecemos su participación en este estudio. A fines de este año, 1994, usted será informado de los resultados del mismo.

¡Ha sido un placer trabajar con usted!

Muy atentamente,

Lynne W. Brookes, MSc., M.Ed.
Investigadora, Programa de Doctorado
Iowa State University
I TALLER DE ACTUALIZACION PARA PROFESORES DE COLEGIOS TECNICOS PROFESSIONALES DE LA REGION ATLANTICA DE COSTA RICA
8-12 DE AGOSTO DE 1994
SEDE DEL ATLANTICO, UNIVERSITY DE COSTA RICA

CUESTIONARIO 4
5 DE OCTUBRE DE 1994

Instrucciones:

No. de Código __ __ __

1. PRIMERO: Favor de marcar los últimos 4 números de su tarjeta de identidad (o el número especial que usted seleccionó para uso en estos cuestionarios) en el espacio arriba denominado "No. de Código __ __ ___" EN CADA UNA de las páginas de este cuestionario. (Es muy importante... ¡gracias!)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas.

*****************************************

SECCION I: INFORMACION Y MATERIALES DEL TALLER

Las tres primarias áreas técnicas a las cual se dirigió el I Taller de Actualización fueron "agricultura sostenible," "protección del medio ambiente," e "importancia del sector agropecuario." Varios tópicos en el área de pedagogía fueron presentados también. Además de presentar información verbalmente, casi todos los conferencistas entregaron material escrito para su revisión y uso.

La revisión de esta material le va a proveer con información para incorporar dentro de los cursos que usted enseña o va a enseñar. Es un recurso didáctico para la elaboración de planes de enseñanza, actividades, y proyectos relacionados con sus cursos.

8 semanas ya han pasado desde el taller... Por favor, 1) indique cuánto ha revisado usted la información y materiales relacionados a los siguientes presentaciones y 2) cuánto ha usado esta información y materiales para la enseñanza:

1.
**PRIMERO:** Por favor encierre en un círculo su respuesta:

<table>
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<tr>
<th>Revisado</th>
<th>Usado</th>
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<tbody>
<tr>
<td>1= Nada</td>
<td>1= Nada</td>
</tr>
<tr>
<td>2= Un poco</td>
<td>2= Un poco</td>
</tr>
<tr>
<td>3= Suficientemente</td>
<td>3= Suficientemente</td>
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**SEGUNDO:** Si usted encierre con un círculo un "1," por favor encierre con un círculo uno de los códigos que siguen para indicar por qué:

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<tr>
<th>TI= Tiempo Insuficiente</th>
<th>NI= No Interés</th>
<th>NA= No en mi Area</th>
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<tr>
<td>1. &quot;Fundamentos de la educación secundaria&quot; (lun., M.Sc. Alicia Sequiera, UCR)</td>
<td>Revisado</td>
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<td>2. &quot;Marco conceptual de sostenibilidad: La problemática del uso de la tierra en el manejo de cuencas&quot; (mar., Dr. Carlos Quesada, UCR)</td>
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<td>3. &quot;Las áreas protegidas y el desarrollo sustentable&quot; (mar., Dr. Miguel Cifuentes, WWF)</td>
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<td>5. &quot;Aspectos sobre la legislación de la protección del medio ambiente&quot; (mier., Bernál Gutierrez, CEE)</td>
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<td>6. Discusión con Ricardo Ramírez, MEP (mier., noche)</td>
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7. "Importancia del sector agropecuario"  
(jue., Dr. Alvaro Jiménez)  

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8. "Programas de ajuste estructural"  
(jue., M.Sc. Pedro Cussianovich R.)  

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9. "Aspectos importantes en la relación alumnos-profesor"  
(jue., M.Sc. Florestella Bonilla, UCR)  

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10. Gira al parque Guayabo  
(vier., M.Sc. Sebastián Salazar)  

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<td>NA</td>
<td>NI</td>
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<tr>
<td>9</td>
<td>NA</td>
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11. Hay diferentes razones posibles para no haber revisado y/o usado algo o mucho del material mencionado arriba. Describa, por favor, por qué usted podría haber tenido dificultades revisar y/o usar lo que usted obtuvo por el taller:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

12. Tomando en consideración los temas presentados en el I Taller, las presentaciones, las discusiones, los materiales proporcionados, y la elaboración de 12 planes de enseñanza, ¿qué tan preparado se siente Ud. para enseñar varios aspectos técnicos dentro de los tres siguientes tópicos?

(Encierre en un círculo el número de la respuesta más apropiada para cada uno de los tópicos técnicos que siguen:)

1=No Preparado  2=Un Poco Preparado  3=Preparado  4=Bien Preparado

3.
A. Agricultura Sostenible

1. El uso de la tierra en el manejo de cuencas  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

2. Areas protegidas y el desarrollo sostenible  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

B. Protección del Medio Ambiente

1. Concepto y la acción de la protección del medio ambiente  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

2. Aspectos sobre la legislación de la protección del medio ambiente  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

C. Importancia del sector agropecuario

1. Importancia del sector agropecuario  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

2. Programa de ajuste estructural y la agricultura  
   N.F. tJ.P.P. P. B.F.  
   1 2 3 4

Le va a ayudar a mejorar y a enriquecer su enseñanza si usted continua a revisar la información y materiales que obtuvo del taller. ¡Qué disfrute de la revisión de los materiales!

SECCION II: PLANES DE ENSEÑANZA, ACTIVIDADES, Y PROYECTOS

Como usted recordará, Uds. los participantes del taller elaboraron 12 "planes de enseñanza" para usar en la enseñanza de estudiantes sobre tópicos relacionados a los tres temas principales del taller. Responda por favor a las preguntas siguientes. Encierre su respuesta con un círculo y haga un comentario por favor.

1. ¿Ha sido útil la elaboración de planes de enseñanza durante el taller?

   (Encierre su respuesta en un círculo):  Sí  No  Un poco

   ¿Por qué?  Explique por favor:  

   

   

   4.
2. ¿Cuántos de los 12 planes de enseñanza ha revisado o usado desde la semana del taller? (Encierre su respuesta en un círculo:)

<table>
<thead>
<tr>
<th></th>
<th>Revisado</th>
<th></th>
<th>Usado</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 1-3 4-6 7-9 10-12 No estoy seguro(a)</td>
<td></td>
<td>0 1-3 4-6 7-9 10-12 No estoy seguro(a)</td>
<td></td>
</tr>
</tbody>
</table>

3. ¿Cuántos de los 12 planes piensa usted que podría usar en sus cursos en los próximos 2 años? (Encierre su respuesta en un círculo)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>No estoy seguro(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1-3</td>
<td>4-6</td>
<td>7-9</td>
<td>10-12</td>
</tr>
</tbody>
</table>

4. ¿Planea desarrollar más planes de enseñanza utilizando los materiales obtenidos durante el taller en los próximos 2 años?

(Encierre su respuesta en un círculo) Sí No No estoy seguro(a)

SECCION III: DIFUSION DE INFORMACION Y MATERIALES DEL TALLER

Una importante expectativa del taller es que la información y los materiales sean difundidos por los participantes a colegas de su colegio que no participaron en el taller.

1.1 ¿Cree que usted(es) desarrolló(aron) un plan útil para difundir la información y materiales a profesores de su colegio no participantes en el taller? (Encierre su respuesta en un círculo)

<table>
<thead>
<tr>
<th></th>
<th>En Desacuerdo</th>
<th>Poco de Acuerdo</th>
<th>De Acuerdo</th>
<th>Muy de Acuerdo</th>
</tr>
</thead>
</table>

1.2 ¿Ha(n) usado este plan para compartir información del taller con profesores de su CTP que no pudieron asistir el taller? Encierre en un círculo su respuesta:

<table>
<thead>
<tr>
<th></th>
<th>Sí</th>
<th>No</th>
<th>No todavía</th>
</tr>
</thead>
</table>

1.3 Si usted contestó "No" o "No todavía" a No. 1.2, pase a No. 2.1 en la próxima página.

Si usted contestó "Sí" a No. 1.2, conteste lo siguiente:

Por favor, describa brevemente cómo planean en su CTP difundir la información y materiales del taller a profesores no participantes:

________________________________________________________________________

________________________________________________________________________

(continue en la próxima página)
2.1 ¿Desarrolló(aron) usted(es) un plan para difundir algun(os) aspecto(s) de la información y materiales del taller dentro de su comunidad? (Encierre su respuesta en un círculo)

SI  No  No todavía

2.2 Si usted contestó "No" o "No todavía" a No. 2.1, pase a No. 3.1 abajo.

Si usted contestó "Sí" a No. 2.1, conteste lo siguiente:

Por favor, describa brevemente cómo usted(es) difundió(ieron) información y/o materiales del taller en su comunidad:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3.1 ¿Piensa usted que asistir al taller le ayudó a desarrollar planes útiles para difundir información a otros profesores y/o a su comunidad? (Encierre su respuesta en un círculo)

En Desacuerdo  Poco de Acuerdo  De Acuerdo  Muy de Acuerdo

3.2 Por favor, comente qué aspectos del taller fueron más útiles y/o menos útiles para planear la difusión de información:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
4. Es importante para los profesores disponer de nueva información. Después del taller, ¿qué tan bien preparado(a) se siente Ud. para compartir/difundir información, planes de enseñanza, y materiales del taller a otros profesores de su CTP que no asistieron el taller sobre aspectos de las siguientes tres áreas técnicas? (Encierre en un círculo la respuesta más apropiada para cada uno de los siguientes tópicos, usando la escala que sigue:)

1=No Preparado  2=Un Poco Preparado  3=Preparado  4=Bien Preparado

<table>
<thead>
<tr>
<th>A. Agricultura Sostenible</th>
<th>N.P.</th>
<th>U.P.P.</th>
<th>P.</th>
<th>B.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. El uso de la tierra en el manejo de cuencas</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Areas protegidas y el desarrollo sostenible</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Protección del Medio Ambiente</th>
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<tbody>
<tr>
<td>1. Concepto y la acción de la protección del medio ambiente</td>
</tr>
<tr>
<td>2. Aspectos sobre la legislación de la protección del medio ambiente</td>
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<th>C. Importancia del sector agropecuario</th>
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<tbody>
<tr>
<td>1. Importancia del sector agropecuario</td>
</tr>
<tr>
<td>2. Programa de ajuste estructural y la agricultura</td>
</tr>
</tbody>
</table>

5. Reflexionando acerca del taller del 8-12 de agosto de 1994, hay algún comentario adicional que usted desee hacer:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Gracias por toda la información tan útil que usted ha suministrado. Este es el cuarto y último cuestionario relacionado al I Taller. ¡Felicitaciones!

Usted recibirá una copia de los resultados del estudio al fines de 1994.

Mantenga su buen trabajo de enseñanza y de difusión de ideas, información, y materiales obtenidos en el taller. ¡Los mejores deseos de éxito en sus labores!
II TALLER DE ACTUALIZACIÓN PARA PROFESORES DE COLEGIOS TÉCNICOS PROFESIONALES
1-3 de Junio de 1995
LA SEDE DEL ATLANTICO, UNIVERSITY DE COSTA RICA

CUESTIONARIO N°1
El 1 Junio de 1995

Instrucciones:

No. de Código: __ __ __ __

1. PRIMERO: Favor de marcar 4 números en el espacio arriba denominado. "No. de Código __ __ __ __" en cada una de las páginas de este cuestionario.
   (Es muy importante recordar este número para usar de nuevo el sábado.)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas.

SECCIÓN I: CAPACITACIÓN, TALLERES DE ACTUALIZACIÓN Y EXPECTATIVAS

1. Describa, por favor, programas de capacitación y de actualización a los que Ud. ha asistido durante los últimos cinco años:

<table>
<thead>
<tr>
<th>Mes/Año</th>
<th>Tema/Nombre</th>
<th>Duración</th>
<th>Impartido Por...</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

2. a) En su opinión, ¿qué importancia tienen los programas de capacitación y actualización para profesores de los colegios técnicos profesionales ("CTP")? Ponga Ud. un círculo alrededor de una de las respuestas siguientes:

   No Importante       Importante       Muy Importante       No Estoy Seguro

   b) Por favor, explique la respuesta que Ud. seleccionó en 2.a:

   ------------------------------------------------------------------
   ------------------------------------------------------------------
   ------------------------------------------------------------------

   1.
3. En su opinión, ¿con qué frecuencia deben los profesores de los CTP asistir a programas de capacitación/actualización? Ponga un círculo alrededor de una de las respuestas:

<table>
<thead>
<tr>
<th>Opción</th>
<th>Cada Mes</th>
<th>Cada 3-4 Meses</th>
<th>2 Veces al Año</th>
<th>Cada Año</th>
<th>Cada 2 Años</th>
<th>Cada 3 Años</th>
<th>Cada 4-5 Años</th>
<th>No Estoy Seguro(a)</th>
</tr>
</thead>
</table>

4. Hay muchas razones posibles para asistir un taller de actualización. Indique, por favor, la importancia para Ud. de cada de las siguientes razones en su decisión de asistir a este taller. Ponga un círculo alrededor del número de la respuesta que corresponde, usando la escala que sigue:

1 = No Importante  
2 = Poco Importante  
3 = Importante  
4 = Muy Importante

4.1 Para mejorar mis conocimientos técnicos para poder enseñar mejor el currículo exigido para los CTP:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.2 Para mejorar mi metodología de enseñanza de acuerdo con las sugerencias de MEP:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.3 Para mejorar el salario:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.4 Para aumentar mi prestigio:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.5 Para mejorar mi servicio profesional a la comunidad:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.6 Para poder intercambiar ideas con otros profesionales en mi campo:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.7 Para poder salir de la rutina ordinaria de la clase:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.8 Curiosidad en cuanto a un programa de actualización brindado por la Sede del Atlántico, UCR:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.9 Solicité asistir:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.10 Me obligaron a asistir:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4

4.11 Quise asistir porque colegas de mi CTP iban a asistir:  
   - N.I. 1  
   - P.I. 2  
   - I. 3  
   - M.I. 4
4.12 Para mantener mis destrezas como profesor

4.13 Para satisfacer mejor los requisitos de mi CTP

4.14 Para repasar mi compromiso con mi profesión

4.15 Para aprender de la interacción con otros profesionales

4.16 Para obtener destrezas de liderazgo relacionadas a mi profesión

4.17 Para prepararme mejor para los cambios de énfasis en mis responsabilidades profesionales

4.18 Para adquirir nuevos conocimientos y destrezas profesionales

4.19 Para definir mejor mi papel profesional y/o la práctica de él

4.20 Para ayudarme a estar al tanto de cambios en mi campo

4.21 Para ayudarme a aumentar la posibilidad de que mis estudiantes estén mejor atendidos

4.22 Para ayudarme a ser más competente en mi trabajo

4.23 Para aumentar la posibilidad de avanzar mi grado profesional

4.24 Estar desafiado por las ideas de mis colegas
<table>
<thead>
<tr>
<th>No.</th>
<th>Descripción</th>
<th>N.I.</th>
<th>P.I.</th>
<th>I.</th>
<th>M.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.25</td>
<td>Para aumentar mi servicio profesional a los estudiantes, al CTP, y a la comunidad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.26</td>
<td>Conseguir nuevos materiales didácticos para mis cursos</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.27</td>
<td>Conseguir información para compartir con mis colegas del CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.28</td>
<td>Mejorar mis habilidades de enseñanza</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.29</td>
<td>Para reflexionar sobre el valor de mis responsabilidades profesionales</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

5. Favor de listar tres de las expectativas más importantes que Ud. trae en cuanto a los beneficios que Ud. pueda recibir durante este taller de actualización:

1. ________________________________________________________________

2. ________________________________________________________________

3. ________________________________________________________________
SECTION II: ANTECEDENTES DEL (LA) PARTICIPANTE

1. Grado académico más alto obtenido:  

2. ¿En cuál área es su grado?  

3. Institución en dónde obtuvo el grado:  

4. Años de ser profesor de CTP:  

5. ¿Qué tan bien preparado(a) se siente en el área técnica? Por favor, encierre en un círculo la respuesta adecuada:  

No Preparado  Poco Preparado  Preparado  Bastante Preparado

6. ¿Qué tan bien preparado(a) se siente en el área pedagógica?  
Por favor, encierre en un círculo la respuesta adecuada:  

No Preparado  Poco Preparado  Preparado  Bastante Preparado

7. Favor de listar todas las materias que Ud. está enseñando este año:  

8. Favor de listar otros cursos que Ud. ha impartido en los últimos cinco años:  

9. Indique las tres materias que más le gusta enseñar:  

----------------------------------------
----------------------------------------

5. 
10. Además de enseñar mencione otras responsabilidades que tiene en su colegio:

11. ¿Cuál es su cargo actual? Poco Satisfecho Satisfecho Muy Satisfecho

12. Existen otros trabajos o profesiones. ¿Qué tan satisfecho está Ud. con su trabajo como profesor? Por favor, encierre en un círculo la respuesta adecuada:

13. ¿Cuál es su grupo de edad? (Marque con "X")

20-25 años 31-35 años 41-45 años
26-30 años 36-40 años más de 45 años

14. Sexo Masculino Sexo Femenino (Marque con "X")

15. Estado civil: (Marque con "X")

Casado(a) Soltero(a) Otro

16. ¿Tiempo de vivir en la Región Atlántica? años

17. ¿De cuál región procede Ud.? 

Muchas gracias por completar este cuestionario.
CUESTIONARIO 2
3 DE JUNIO DE 1995

Instrucciones:

1. PRIMERO: Favor de marcar los mismos 4 números del número especial que usted seleccionó para usó para el primer cuestionario) en el espacio arriba denominado" No. de Código _________ " EN CADA UNA de las páginas de esta cuestionario. (Es muy importante... ¡gracias!)

2. Complete por favor cada sección que sigue según las instrucciones estipuladas.

SECCION I: II TALLER DE ACTUALIZACION: EXPERIENCIA Y BENEFICIOS PERCIBIDOS

1. Hay muchas maneras en que un participante puede beneficiarse al asistir a un taller de actualización. Indique, por favor, el grado de beneficio que obtuvo usted por asistir a este taller. (Ponga un círculo alrededor del número de la respuesta que corresponde, usando la escala que sigue:)

<table>
<thead>
<tr>
<th></th>
<th>1= Nada/No</th>
<th>2= Poco</th>
<th>3= Suficientemente</th>
<th>4= Mucho/Muy</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.</td>
<td>P.</td>
<td>S.</td>
<td>M.</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Aumentó mis conocimientos técnicos para poder enseñar mejor el currículo exigido para los CTP</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Mejorará mi metodología de enseñanza de acuerdo con las sugerencias del MEP</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.3</td>
<td>Mejorará el salario</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.4</td>
<td>Aumentará mi prestigio</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>Mejorará mi servicio profesional a la comunidad</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>1.6</td>
<td>Intercambié ideas con otros profesionales en mi campo</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.7</td>
<td>Me estimuló a mejorar la rutina ordinaria de las clases</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>N. de Código</td>
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<tr>
<td>1.21 Va a aumentar la posibilidad de que mis estudiantes estén mejor atendidos</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.22 Me va a ayudar a ser más competente en mi trabajo</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.23 Va a aumentar la posibilidad de avanzar mi grado profesional</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.24 Estuve estimulado por las ideas de mis colegas</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.25 Va a aumentar mi servicio profesional a los estudiantes, al CTP, y a la comunidad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.26 Conseguí nuevos materiales didácticos para mis cursos</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1.27 Conseguí información para compartir con mis colegas del CTP</td>
<td>1</td>
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<tr>
<td>1.28 Mejorará mis habilidades de enseñanza</td>
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<tr>
<td>1.29 Me ayudó a reflexionar sobre el mérito de mis responsabilidades profesionales</td>
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<td>1.30 Favor de listar tres beneficios más importantes que usted consiguió a causa de este taller de actualización:</td>
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2.12a) Sesiones de trabajo sobre la elaboración de planes para compartir la información y materiales del taller con los otros profesores de su colegio que no asistieron al taller.

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<tr>
<th>1= Nada útil</th>
<th>2= Un Poco Util</th>
<th>3= Util</th>
<th>4= Muy Util</th>
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b) Metodología

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c) Resultados: Un plan práctico a utilizar para difundir/compartir información y materiales con los profesores de su colegio que no asistieron al taller

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<th>1= Nada útil</th>
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Comentarios/sugerencias en cuanto a estas actividades:

__________________________________________________________________________

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__________________________________________________________________________

1. Una de las actividades del taller consistió en la elaboración de planes (actividades, proyectos) para la enseñanza relacionados a los tres temas tratados. ¿Qué tan beneficioso cree usted que fue esta actividad? Encierre en un círculo la respuesta apropiada:

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<tr>
<th>No fue útil</th>
<th>Un poco útil</th>
<th>Util</th>
<th>Muy útil</th>
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2. En un futuro taller similar, ¿cuánto tiempo debe ser destinado a la elaboración de planes de enseñanza? Encierre en un círculo su respuesta.

<table>
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<tr>
<th>Nada</th>
<th>Menos tiempo</th>
<th>Lo mismo</th>
<th>Más tiempo</th>
<th>Mucho más tiempo</th>
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3. ¿Prefiere usted trabajar en la elaboración de planes de enseñanza solo(a) o como parte de un grupo? Encierre su respuesta en un círculo.

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<tr>
<th>Solo(a)</th>
<th>En un grupo pequeño (2-4)</th>
<th>En un grupo más grande (5-8)</th>
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6. Una de las actividades del taller consistió en la elaboración de planes para compartir/difundir información, planes de enseñanza, y materiales del taller con otros profesores de su colegio. En su opinión, ¿Qué tan útil fue esta actividad? Encierre en un círculo la respuesta apropiada:

- No fue útil
- Un poco útil
- Útil
- Muy útil

7. En un futuro taller similar, ¿Cuánto tiempo debe ser proporcionado a la elaboración de planes para compartir/difundir tal información? Encierre en un círculo su respuesta.

- Nada
- Menos tiempo
- Lo mismo
- Más tiempo
- Mucho más tiempo

8. ¿Prefiere usted trabajar en la elaboración de tales planes solo(a) o como parte de un grupo? Encierre su respuesta en un círculo.

- Solo(a)
- En un grupo pequeño (2-4)
- En un grupo más grande (5-8)

Comentarios/sugerencias en cuanto a estas actividades:

SECCION III: APOYO LOGISTICO

Su participación en el taller es importante. Por favor evalúe los siguientes aspectos de acuerdo a la siguiente escala:

1=Insatisfactorio  2=Poco Satisfactorio  3=Satisfactorio  4=Excelente  NA=No Aplic.

1. El proceso de selección de participantes.

Número de participantes:

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<td>6. Duración de cada día del taller</td>
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**Respuesta a las preguntas de los participantes**

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**9. Personal de UCR y ISU (coordinadores, facilitadores):**

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<th>Correspondencia/flexibilidad para satisfacer las necesidades de los participantes</th>
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**10. Por favor comente la estructura total del taller. Sus perspectivas son muy importantes.**

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**No. de Código: __ __ __**

**1=Insatisfactorio  2=Poco Satisfactorio  3=Satisfactorio  4=Excelente  NA=No Aplic.**
11. **MUY IMPORTANTANTE.** Por favor sugiera posibles formas de cómo la Sede del Atlántico/UCR podría ofrecerle a Ud. y a otros profesores apoyo y servicios técnicos/educativos:

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12. Cualquier otro comentario o sugerencia será bienvenido:

________________________________________________________________________

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Les agradezco muchísimo el haber completado este cuestionario. ¡NOS VEMOS!
APPENDIX D

APPROACH FOLLOW-UP: EVALUATION, IMPACT, AND FOLLOW-ON
MINISTRY OF PUBLIC EDUCATION
DEPARTMENT OF TECHNICAL EDUCATION
AGRICULTURE AND LIVESTOCK SECTION

FROM: Ricardo Ramírez Alfaro
National Consultant

FOR: Ing. Fernando Bogantes Cruz
Director a. i.
Dept. Technical Education

SUBJECT: Report

REPORT ON THE PROFESSIONAL DEVELOPMENT WORKSHOP FOR TEACHERS FROM PROFESSIONAL AND TECHNICAL SCHOOLS OF THE ATLANTIC REGION

1. Date: From Monday 8 to Friday 12 of August, 1994.

2. Place: Atlantic campus, University of Costa Rica, Turrialba.


4. Topics developed:
   - Sustainable agriculture
   - Protection of the environment
   - Importance of the agriculture and livestock sector

5. Objectives:

   To explore and develop methodologies in order to incorporate information about the three topics into current courses, such as:

   [in the] Agriculture and livestock module, specialties in Agroecology and applied Ecology, exploratory workshops for the conservation and use of natural resources, getting to know our fauna, and education in ecology, in addition to the general application of these topics in the Agriculture and Livestock sector overall.
To elaborate a plan to spread the information distributed in the workshop to colleagues of the school from which each of the participants comes.

6. **Methodology used:**

a) The first day, the participants arrived, the work dynamic was presented, and a didactic session about "important aspects in the student-teacher relation" was given.

b) During the mornings of the following three days lectures related to the three topics of the workshop were delivered, one topic each day:

- **Tuesday: Topic:** Sustainable agriculture.
  Lectures: "Conceptual frame of sustainability: problems with the use of land in the exploitation of the river basins". "Protected areas and sustainable development".

- **Wednesday: Topic:** Protection of the environment.
  Lectures: "Theory and practice of the protection of the environment". "Some aspects of the legislation for the protection of the environment".

- **Thursday: Topic:** The importance of the agriculture and livestock sector.
  "Programs of structural adjustment".

c) During the afternoon and evening, they worked on the elaboration of teaching plans about each day’s topic, the design of a plan to spread the acquired information and the presentation to the entire group of those plans made in groups.

d) On Friday they took a field trip to the National Monument in Guayabo, which is the most important archeological area discovered in the country.

Upon returning, lesson plans were presented about the topic, "Importance of the Agriculture and Livestock sector". Results were presented concerning the design of plans to spread the acquired information.

e) In order for the UCR to determine the best way in which it can provide the teachers of professional and technical schools with skills, and the role that the Atlantic campus can play in programs of updating in the future, two surveys will be made, one in the beginning of the workshop, the other at
the end. In addition to the latter, two more surveys will be carried out in each school; one, 15 days after the workshop, and the other two months after the workshop.

7. **Participants came from the following [CTP] schools:**

   ![CTP School]
   Guácimo
   Batán
   Siquirres
   La Suiza
   Valle de la Estrella
   Guápiles
   Talamanca

8. **Conclusions**

   Excellent hospitality was provided for food, lodging and general conditions.

   The workshop showed excellent organization, planning and use of didactic resources.

   In addition to the acquired knowledge, the participants received updated materials which are difficult to obtain in their workplaces.

   It was important to incorporate the planning of mechanisms to spread the information, because this achieves a multiplying effect of the workshop.

   The participants became aware of the need for updating and acquisition of new skill.

   The teachers expressed the most frequent need of acquisition of new skills regarding the topics presented.

   The topics presented are very wide, and sparked great interest among the participants, but it was not possible to develop them in depth.

   Those topics are so important and deep, that they should allow development of a specific workshop one week long for each of them.
The program for Monday should be changed to start earlier so that it is not necessary to work until so late in the evening (10 p.m.), in order to achieve the same performance, with longer resting time and still maintain the same number of work hours.

Changing the date of the workshop from July to August, made it take place in the week following the Congress of APSE. This changed the attendance: although, 75% of the teachers that attended this had attended [the other]. Also the celebration of the twenty-fourth anniversary of the School of Guápiles affected the participation.

We thank the institutions that participated in this activity, because they help us confront one of the most serious and relevant problems of technical education, that is, the need for updating and training our teachers.

\magui

Cc: M.S. Gerardo Arce Arce
    Director of Technical Education

Cc: Ing. Carlos Calvo
    UCR

RICARDO.INF
INFORME DEL TALLER DE ACTUALIZACION PARA
PROFESORES DE COLEGIOS TECNICOS PROFESIONALES
DE LA ZONA ATLANTICA


2. Lugar: Sede del Atlántico, Universidad de Costa Rica, Turrialba.


4. Temas desarrollados:
   - Agricultura sostenible
   - Protección del medio ambiente
   - Importancia del sector agropecuario

5. Objetivos:
   Explorar y elaborar metodologías para incorporar información sobre los tres temas en los cursos actuales, tales como: Modalidad agropecuaria, especialidades de Agroecología y Ecología aplicada, Talleres exploratorios de conservación y manejo de recursos naturales, conozcamos nuestra fauna y educación ecológica, además de la aplicación general que tienen esos temas en todo el sector agropecuario.
Elaborar un plan para difundir la información recibida en el taller a los profesores compañeros del colegio de procedencia de cada uno de los participantes.

6. Metodología empleada:

a) El primer día se realizó la llegada de los participantes se expuso la dinámica de trabajo y una sesión didáctica sobre "aspectos importantes en la relación alumnos-profesores."

b) En los siguientes tres días por la mañana se desarrollaron conferencias relacionadas con los tres temas a desarrollar, un tema cada día, a saber:

   **Martes:** Tema: Agricultura sostenible.
   Conferencia: "Marco conceptual de sostenibilidad: La problemática del uso de la tierra en el manejo de cuencas". "Las áreas protegidas y el desarrollo sostenible".

   **Miércoles:** Tema: Protección del medio ambiente.
   Conferencias: "Concepto y la acción de la protección del medio ambiente." "Aspectos sobre la legislación de la protección del medio ambiente."

   **Jueves:** Tema: Importancia del sector agropecuario.
   Conferencias: "Importancia del sector agropecuario". "Programas de ajuste estructural"

c) Durante la tarde y la noche se trabajó en la elaboración de planes de enseñanza sobre el tema de cada día, diseño del plan para difundir la información recibida y exposición en plenaria de esos planes que fueron elaborados en grupos.

d) El día viernes se realizó una gira de campo al Monumento Nacional de Guayabo que es el área arqueológica más importante descubierta en el país.

Al regreso se presentaron los planes de lección sobre el tema "Importancia del sector agropecuario y presentación de los resultados del diseño de los planes para difundir la información recibida."
e) Para determinar por parte de la UCR sobre la mejor manera cómo pueden brindar capacitación a los docentes de colegios profesionales y el papel que puede desempeñar la sede del Atlántico en programas de capacitación y actualización en el futuro. Se aplicarán dos encuestas, uno al inicio del taller y otro al finalizar. Además de los anteriores, se aplicarán dos encuestas más en cada colegio, una 15 días después y otra dos meses después de realizado el taller.

7. Participantes:

Colegio
Guácimo
Estáan
Siquirres
La Suiza
Valle de La Estrella
Guápiles
Talamanca

8. Conclusiones

Se brindó una magnífica atención en lo referente a alimentación, hospedaje y condiciones generales.

La actividad denotó una magnífica organización, planificación y utilización de recursos didácticos.

Además de los conocimientos recibidos, los participantes adquirieron materiales que son poco accesibles en sus lugares de trabajo y con una gran actualización.

Fue importante incorporar la planificación de mecanismos para difundir la información porque se logra un efecto multiplicador del taller.
Se logró en los participantes la toma de conciencia de la necesidad de capacitación y actualización que se tiene.

Se manifestó por parte de los docentes la necesidad de capacitación más frecuente y continua en los temas desarrollados.

Los temas desarrollados son muy amplios y despertaron gran interés en los participantes, pero no se pudo profundizar mucho.

Los temas desarrollados son tan importantes y profundos que permiten desarrollar un taller específico de una semana para cada uno.

Se debe modificar la programación en el día lunes para iniciar temprano y no tener que trabajar tan tarde en la noche (10 p.m.) y así, lograr un mayor aprovechamiento al tener un mayor descanso por día, manteniendo la duración del taller en cuanto a número de horas.

Al pasar la fecha del taller de julio a agosto, hizo que éste se realizará la semana siguiente al Congreso de APSE, lo que afectó la asistencia; aunque, se logró que esta fuerza de un 75% de los convocados. También afectó la participación, la celebración del Veinticuatro Aniversario del Colegio de Guápiles.

Se brinda un reconocimiento a las instituciones participantes en esta actividad porque nos ayudan a enfrentar uno de los problemas más serios y relevantes que tiene la educación técnica como lo es la necesidad de capacitación y actualización de nuestros docentes.

/magui

Cc: Msc. Gerardo Arce Arce
Gerente de Educación Técnica

Cc: Ing. Carlos Calvo
UCR

RICOARDO-INF
Ms. Mary De Baca
M. Sc. Iowa State University
U.S.A.

Dear Madam:

I am pleased to inform you that we have finished Professional Development Workshop I for teachers of the Agriculture and Livestock Schools of the Atlantic region, which has been a great success.

We have administered surveys to the participants, who have expressed their satisfaction for having attended the workshop. We would not have achieved this success without the support that we found in the institution that you represent.

Again I thank you for your valuable collaboration, since in this way we have achieved one of our goals.

Very sincerely,

Ing. Carlos Eduardo Calvo P.
Vice-director
Atlantic Campus, UCR

(Administration Seal)
Señora

M.Sc. Mary De Baca
Universidad del Estado de Iowa
ESTADOS UNIDOS

Estimada señora:

Me complazco informarle que hemos concluido el I Taller de Actualización para Profesores de Colegios Agropecuarios de la Zona Atlántica, el cual ha sido de un gran éxito.

Hemos realizado encuestas a los participantes, quienes han manifestado su satisfacción por haber asistido a la mencionada actividad. Esos éxito no lo hubiéramos alcanzado de no ser por el apoyo que encontramos en la Institución que usted representa.

Nuevamente agradezco su valiosa colaboración, ya que de esa manera hemos logrado una de nuestras metas propuestas.

Con toda consideración,

[Inicia firma]

Ing. Carlos Eduardo Calvo P.
Subdirector
SEDE DEL ATLÁNTICO, U.C.A.
MINISTERIO DE EDUCACIÓN PÚBLICA
DESPACHO DEL VICEMINISTRO

San Juan 30 de agosto de 1972

Señor
Dr. Orlando Salazar M.
Director
Casa del Atlántico
Turrialba
C. C.

Estimado señor Director:

Después de analizar los resultados del Primer Taller de Actualización de Profesores de los Colegios Técnicos Profesionales, estamos muy satisfechos con esa actividad.

Asimismo este Ministerio está muy interesado en consolidar un programa permanente de capacitación en servicio de estos profesores en el ámbito nacional, en coordinación con la Casa del Atlántico de la Universidad de Costa Rica.

Por lo tanto, deseo manifestarle nuestro compromiso de participar en actividades de capacitación a futuro, por lo que considero importante que se inicie por su parte las negociaciones con los organismos donantes, como el World Wildlife Fund y otros, para cubrir los gastos de estos talleres.

Cardialmente,

[Signature]

Viceministro de Educación
Ministerio de Educación Pública
SEMINARIO SOBRE PROTECCION DEL MEDIO AMBIENTE

CONTAMINACION POR PLAGUICIDAS

Organizado por Ministerio de Educación Pública/Iowa State University/Sede del Atlántico, Universidad de Costa Rica

30 de mayo de 1995, Colegio Técnico Profesional, Siquirres, Limón

8:00 a.m. - 8:30 a.m. I. Introducción

8:30 a.m. - 10:00 a.m. Actividad introductoria


(Receso con refrigerio)


12:00 m.d. - 1:00 p.m. (Almuerzo)

1:00 p.m. - 2:30 p.m. III b. Las Cuencas Hidrográficas, Agricultura y Plaguicidas (continuación)

Plaguicidas y sus a efectos. ¿Qué se puede hacer?

(Receso con refrigerio)

2:30 p.m. - 4:00 p.m. IV. Educación Ambiental. Planificación para la enseñanza de los temas. Clausura.
SEMINAR ON PROTECTION OF THE ENVIRONMENT

POLLUTION BY PESTICIDES

Organized by the Ministry of Public Education/Iowa State University/Atlantic Campus, University of Costa Rica

May 30, 1995, Professional Technical School, Siquirres, Limón

8:00 a.m. - 8:30 a.m. I. Introduction

8:30 a.m. - 10:00 a.m. Introductory activity

II. Hydrographic basins.
   Biodiversity.
   Changes within your hydrographic basin.

(Recess with refreshments)

10:00 a.m. -12:00 p.m. III.a. Hydrographic basins, Agriculture and pesticides.
   History.
   Pesticides in the environment.
   Discussion on pesticides in the Atlantic region.
   M. Sc. Ana Tapia.

12:00 p.m. - 1:00 p.m. (Lunch)

1:00 p.m. - 2:30 p.m. III.b. Hydrographic basins, Agriculture and pesticides (continuation).
   Pesticides and its effects
   What can be done?

(Recess with refreshments)

2:30 p.m. - 4:00 p.m. IV. Environmental education
   Planning the teaching of the topics.
   Closing.
ENVIRONMENTAL PROTECTION SEMINAR
May 30, 1995 - CTP Siquirres, Limón
EVALUATION SUMMARY

The 23 participants were given an evaluation form to complete at the end of the day-long seminar entitled "Pesticide Contamination" rating the following using a scale of 1 - 10 as seen below. 20 participants completed the evaluation.

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1. Seminar Presentations:  
   Average (n = 20)
   
   a) Importance of the contents  9.5
   b) Clarity of the presentations  9.3
   c) Written material  9.6
   d) Audiovisual aids  9.1
   e) Length of the presentations  9.1

Suggestions provided about the presentations:

Longer duration [for more depth] (3 comments)  
Well done  
Very good presentation  
It seemed very important for our country  
Excellent presentation, I hope they continue  
It seemed excellent to me - congratulations  
Spend at least 15 min. on video presentation on subject

2. Seminar Organization:  
   Average (n = 20)
   
   a) Seminar format  9.3  
   b) Lead time  9.2  
   c) Time of year  8.9 (n = 19)  
   d) Facilities  8.4  
   e) Refreshments  9.7  
   f) Lunch (CTP Siquirres)  9.7
Suggestions provided about the organization of the seminar to help in the development of future events:

More time
Include us [their CTP as a seminar site]
Make visits
Use videos
Better room/facilities (2 comments)
Provide more material on handouts
Excellent
Well/excellently organized (2 comments)
Review workshop themes to better coordinate
We hope for some talks at Bataan
Vary content with the seminar
It seemed fine to me
These seminars need to have greater institutional participation
   [more teachers/CTPs need to come/be involved]
We would like one at Pocosí

Future seminar topics suggested:

We need a course on garbage/trash management, especially
   biodegradable methods
Compost management and organic farming
Recycling (3 comments)
Trash (4 comments)
Control of pests and diseases
Organic fertilizers
I would like to participate in a seminar on garbage management, recycling, bioreduction
Additional themes, carrying capacity, production sustainability, value added as products
Estimado Jim:

Creo que ahora si nos estamos comunicando, recibí tu fax del día de hoy. En este momento no he recibido confirmación de Ministerio de Educación Pública acerca de tu visita. Sin embargo, he conversado con Carlos Calvo y hemos llegado a un acuerdo que veo crudamente la situación podríamos aprovechar tu visita para lograr varios objetivos que interesan:

1. Visitar algunos Colegios con el fin de dar seguimiento a los dos talleres anteriores, además de hacer una evaluación de los mismos. Esto nos ayudaría mucho a replantear una propuesta para dar continuidad a actividades parecidas a estas y ya tenemos identificado un donante. En este sentido tenemos presupuesto para usar un vehículo de la Universidad para este fin, además de que alguno de nosotros, Ana, Carlos o yo estaríamos acompañándole.

2. Ayudamos a replantear la propuesta que te mencioné antes para lo que requirimos entre dos y tres días de tu tiempo.

3. Programar la visita con tus estudiantes tal y como lo habíamos conversado previamente.

Quisiera decirte que hemos hecho todos los esfuerzos para que todo salga como lo programado, pero Roberto González te puede decir lo difícil que es coordinar este tipo de eventos con el MEP.

Tendríamos interés en que sí se realiza tu viaje en estas condiciones pudieran conseguir materiales para la Biblioteca.

Estoy enviando copia de esta nota a Mary De Bacca.
En cuanto a lo que dices en tu fax de hablar por teléfono el día Miércoles a las 10 a.m. hora de CR, me parece muy bien, espero tu llamada al 506/256-1044 o al 506/2560316.

Gracias por tu paciencia y esperamos verte pronto.

Saludos,

Margarita Meseguer

Margarita FAX - (506) 556-7020
PROGRAMA VISITA DEL DR. JAMES PEASE  
DE IOWA STATE UNIVERSITY  
(18 - 26 de noviembre, 1995)

Propósito:

- Impartir al menos dos conferencias en Colegios Técnicos Profesionales de la Región Atlántica.

- Elaborar junto con el equipo de la Sede del Atlántico de la Universidad de Costa Rica los lineamientos base para una propuesta de continuidad a los Talleres realizados previamente con los profesores de los Colegios Técnicos Profesionales.

- Planificar visita de estudiantes del Dr. James Pease en mayo de 1996.

Participantes por la Sede del Atlántico - U.C.R.

- Dr. Orlando Salazar, Director de la Sede del Atlántico, U.C.R.
- Ing. Carlos E. Calvo, Coordinador Académico
- Ana Tapia, M.Sc., Profesora Carrera Fitotecnia
- David Hine, M.Sc., Profesor Carrera Fitotecnia
- Margarita Meseguer, M.Sc. Profesora Carrera Fitotecnia
- Ing. Carlos Henríquez, Profesor Carrera Fitotecnia
- Sra. Yamileth Núñez, Secretaria
- Greivin Trejos, Estudiante Fitotecnia
- Allan Retana, Estudiante Fitotecnia
- Marielos Montoya, Estudiante Fitotecnia
- Marco Alonso Andrade, Estudiante Fitotecnia
DATE: 12 December 1995

TO: Mary de Baca  
College of Agriculture International Programs

FROM: Dr. Jim Pease  
Dept. of Animal Ecology


The 10-day trip to Costa Rica was an extremely productive one. As you can see from the attached agenda of the trip, it was quite packed with three major agenda items: 1) evaluation of the previous workshops and delivery of two more seminars; 2) planning and making final arrangements for the study tour with ISU students in May; and 3) proposal planning with Ing. Carlos Calvo, Academic Coordinator and Sub-director for UCR-Turrialba and Ms. Margarita Meseguir, Professor. In addition, I met with Professor Carlos Henriquez and visited the experimental composting project he directs at the Juan Viñas sugar cane and coffee plantation. I also had meetings with Dr. Orlando Salazar, the Director of the Turrialba campus, and worked with Ana Tapia, David Hine, Yamileth Nuñez, and several UCR students during the week.

The most interesting parts of the week were the visits to two schools of teachers that had previously attended one or both of the previous workshops (the earliest being that organized by Lynne Brooks and Margarita Meseguir in 1994 and the later one that the three of us organized and conducted earlier this year in June.) I was able to visit the agricultural school at La Suiza, about 20 minutes from Turrialba and the technical school at Bataan, east of Turrialba near Limon in the heart of the banana-growing region.

At both schools there were several items on the schedule. We toured the schools' facilities, viewing the types of programs they offered, seeing students in action, and the facilities available for education. We met with both teachers who had attended the previous workshops (2-3 in both cases) and those who had not, asking both to complete evaluations and describe their training needs (copies attached.) I presented an introduction to environmental education to all the teachers, concentrating on material presented in the workshop I offered in May. The teachers who had previously attended then presented 2-3 activities that they
learned at the May workshop so that we could observe how they implemented what they had been taught. Lastly, we conducted a discussion with all the teachers of what they perceived as the most important needs for future workshops and/or training. This discussion built on what they had already written on the evaluations, allowing them to stimulate one another’s ideas. We also distributed to them some handouts of activities, a set of overheads from my talk, and a few posters and books for their libraries.

From these two schools, several things were evident to me:

1) The teachers who participated in the previous workshops were very happy with the mix of both new knowledge and new teaching techniques they were presented. In particular, they mentioned biodiversity, pesticide management, and actual participation in activities for learning as being particularly helpful. They also mentioned the interchange of ideas with their colleagues as especially valuable. (Time and opportunity for such interchange is apparently fairly rare in Costa Rica.)

2) As with teachers here in the U.S., it takes time to build both capacity and creativity in teachers. As I have found with my evaluation of teachers who have participated in programs here, they only implement things in small increments. They try one or two small things and then, if they are successful, they gradually incorporate other aspects over several years. This is also true with the teachers in Costa Rica, especially so with those at La Suiza: they lacked the self-confidence to stretch much beyond what they had always done. As you are aware, most elementary and secondary teachers in Costa Rica teach basically from lecture notes. The techniques I taught them—use of games, drama, writing, etc. for environmental education—were so novel to their teaching styles that as yet, they are using them little. That’s not to say they weren’t enthusiastic; they were. In fact, they were very excited to be able to demonstrate these ideas to their fellow teachers. It was clear, however, that they had never been given a chance to pass on their knowledge: the idea of teachers inserviceing other teachers in their school is completely foreign to the school administrators in Costa Rica. Both a lack of time and a perceived lack of support from administrators, together with a need to feel a part of something larger (a country-wide organization of environmental educators, for example) led, I believe, to their not sharing much of what they had been taught with their fellow teachers, probably from either workshop. They had, however, been using some of it in their own teaching. This was particularly true for the teachers at Bataan.

3) Teachers in both schools expressed a need to see the results of their teaching implemented in the community. La Suiza, in particular, is well-connected
with the community, striving to involve them in a variety of small-scale agricultural projects appropriate for the terrain and climate. Bataan is a bit more of a "company town" and the teachers expressed some frustration at how slow the community seemed to accept more ecologically sound ideas of agriculture. The Bataan teachers, in particular, were excellent teachers and had actually implemented a number of ideas not only with their own students but with the whole school.

4) There is a strong interest in pursuing more knowledge in the areas of organic agriculture, forest management and the consequences of deforestation, watershed conservation, and environmental education in general.

5) Teachers see a need to have their school administrators also participate in an EE workshop to engender the support they (teachers) need in their school systems. They are split in their opinions as to whether they should participate with teachers or in a separate workshop.

I also worked with Roberto Gonzalez in the CICET office and over the weekend to finalize plans for our study tour with ISU students in May. Roberto was exceptionally helpful to me and especially knowledgeable about all that Costa Rica has to offer and understanding of students' needs. It would be very difficult, if not impossible, to conduct such a tour without the help of the CICET office. As we proceed to internationalize our curricula in the ISU College of Agriculture, please know that the existence of such an office is absolutely critical to the success of such efforts. Please see the attached itinerary.

Lastly, I spent some time working with Carlos Calvo and Margarita on the outline of a proposal I am presently trying to complete for submission to the US EPA Environmental Education grants program. Due to the political nature of the time I was there (Carlos was elected over Orlando as the Director of UCR-Turrialba), we did not get this as completely fleshed out as I had hoped. Therefore, the proposal will not be as extensive as I had once envisioned it. However, it will take into account what has been accomplished so far and build on it, seeking to continue our efforts at bringing training in environmental education to Costa Rican teachers through the UCR-ISU relationship.

Overall, it was a highly productive week, one of many I hope to spend there over the next few years. My thanks to you, to CICET, and to the International Programs Office of the College for your support.

cc: Dr. Bruce Menzel
    Ms. Margarita Meseguir
BIBLIOGRAPHY
BIBLIOGRAPHY


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deBaca, M. (n.d.). ISU-CICET activities at Turrialba. International Agriculture files, UDLP/UCR SDA


