Journal of International Agricultural and Extension Education

A publication of the Association for International Agricultural and Extension Education
The Journal of International Agricultural and Extension Education is the official refereed publication of the Association for International Agricultural and Extension Education. The purpose is to enhance the research and knowledge base of agricultural and extension education from an international perspective.

Articles intended for publication should focus on international agricultural education and/or international extension education. Articles should relate to current or emerging issues, cite appropriate literature, and draw out implications for international agricultural and extension education. Manuscripts should not have been published or be under consideration for publication by another journal.

Three types of articles are solicited for the Journal: Feature Articles, Commentary Articles, and Tools of the Profession Articles.

**Feature Articles**

Feature articles focus on philosophy, current or emerging issues, and the methodology and practical application of specific research and appropriate technologies, which have implications for developed and developing countries. Feature articles go through the Journal’s blind review process utilizing peer reviewers to evaluate content and readability. Reviewers are usually selected from the membership of the AIAEE. In the blind review process all reference to author(s) is removed before the manuscript is sent to reviewers.

**Commentary Articles**

Commentary articles state an opinion, offer a challenge, or present a thought-provoking idea on an issue of concern to international agricultural and extension education, including a published article in the Journal. Commentary articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

**Tools of the Profession Articles**

Tools of the Profession articles report on specific techniques, materials, books and technologies that can be useful to agricultural and extension educators in a global context and/or in a country/region. Tools of the Profession articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

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# Journal of International Agricultural and Extension Education

## Volume 7  Number 1  Spring 2000

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From the Editor

This issue of the Journal of International Agricultural and Extension Education starts the seventh year of publishing feature research articles, commentary issues and tools for the international agricultural and extension profession. The Journal has matured into an important publication for scholarly professionals in the United States and around the world who strive to improve world-wide agricultural and extension education programs.

Yet, if the Journal is to continue to be a well respected professional journal your help is needed. The membership of the Association for International Agricultural and Extension Education and the readership of the Journal need to promote the Journal to friends and colleagues throughout the world. In order to select the most rigorous and quality manuscripts we need a critical-mass of papers submitted. The last six months has seen a drop in the number of feature articles, commentary articles and tools for the profession papers submitted for publication in the Journal.

Recently, I had the opportunity to promote the Journal to the Director of the Cooperative Extension System in the state of Idaho. He was so impressed he informed every county extension educator about the Journal and the opportunity to publish their writings. I have since received several inquiries about submitting papers for potential publication in the Journal. This can be done in every state across the country. If you know of Extension Directors, Associate Deans or Deans of Colleges of Agriculture who do not know about the Journal, please share this copy with them. If you need complimentary copies sent to any potential subscribers or authors please let me know. With everyone’s help we can increase the readership and submissions to the Journal.

Once again, this issue has several outstanding papers for your reading. Dr. Nick Place and his co-authors share with us the successes of the Polish-American Extension Project in the first article. Dr. David Acker and Victor Udin discuss Iowa State’s Linkage Project with the National Agricultural University of Ukraine in the article on page 17.

Last fall AIAEE President Satish Verma and Dr. John Richardson attended the European Association of Extension Education (ESEE) Conference held in Cracow, Poland. During the meeting they encouraged the authors of several papers to submit their writings to the Journal. The first article from the conference comes to us from Eelke Wielinga, former extension expert from the Dutch Ministry of Agriculture. His article on Rural Extension in Vital Networks: Changing Roles of Extension in Dutch Agriculture provides us with a window into extension education in the Netherlands. On page 37, Wayne Ganpat, Joseph Seeppersad and Isaac Bekele from the University of the West Indies in Trinidad discuss the use and non-use of credit by limited-resource farm households in Trinidad. After the outstanding 1999 AIAEE Conference in Trinidad and Tobago, all AIAEE members should be interested in improving their knowledge of agriculture on those most beautiful islands.

Improving our knowledge of international agriculture issues is the focus of the two commentary articles in this issue. Dr. James Diamond shares with us his vast knowledge of agricultural and extension education in Albania. As professionals in higher education, we should all be interested in David Acker’ and Colin Scanes’ article on globalizing undergraduate education and student learning at Colleges of Agriculture.

Finally, there is information provided about two upcoming conferences related to international agricultural and extension education. I hope AIAEE members will continue to take advantage of these and other conferences to improve their knowledge and skills in international agricultural and extension education programming.
Implications and Impact among American Extension Professionals and Near-Associates Resulting from the Polish-American Extension Project

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Abstract
A descriptive case study was conducted to determine professional, personal, and cultural/social implications and impact among American Extension professionals and near-associates resulting from the Polish-American Extension Project (PAEP). The study documented positive impact for American participants as well as secondary spin-off effects and impact among colleagues, coworkers, clientele and the general public. Unanimity existed among most PAEP participants and interviewees regarding the important role the United States exercises with international cooperative assistance.

This study revealed that the PAEP served to create camaraderie and meaningful relationships with U.S. citizens and another country. Participants were significantly changed in a positive manner through this professional international experience. They gained an increased global awareness, knowledge, and understanding as well as skill development, reinvigoration, and higher self-esteem. Through extensive integration of this experience into subsequent extension programming, many other people were able to gain international awareness, knowledge, discernment, and involvement from the initial PAEP participant. The study uncovered factors that can lead to improvement of similar types of international Extension programs.

Introduction
Several strategies have been utilized to support the progress of agriculture and rural areas in developing countries. One such strategy was the Polish-American Extension Project (PAEP). The United States Department of Agriculture (USDA) developed and implemented this agricultural technical assistance program to help address the needs of Poland in relation to agricultural production, management, Extension methodologies, and a free-market economy. The PAEP was initiated in 1989 and ended in 1995 with a primary objective of improving the structure of Polish agriculture with the goal of increasing agricultural production efficiency and improving rural quality of life.

The project was established as a joint educational project of the United States Department of Agriculture’s Extension Service (USDA-ES) and the Polish Ministry of Agriculture and Food Economy’s (MAFE) Agricultural Advisory Service. Between 1990 and 1995, more than 100 American Extension professionals representing 31 land grant universities traveled to Poland to work in this project. Over the period of the project, 70 Extension professionals representing 26 states served one or more six-month assignments as advisors at provincial-level
agricultural advisory centers (Osrodek Doradztwa Rolniczegos or ODRs) in Poland. This group of PAEP participants and their communities were the population for this study.

These 70 Extension professionals worked collaboratively with Polish Extension counterparts in one of Poland’s 49 provincial ODR offices to plan, design, develop, implement and evaluate Extension programming via a personal hands-on approach. Because the project primarily focused on improved agricultural productivity, the majority of participants were chosen to represent agriculture and farm management expertise. Extension field-experienced agents were primarily paired with campus-based specialists and the team provided expertise on farm management, agricultural technologies and Extension methodologies. However as the project unfolded, a wider variety of Extension expertise was utilized. U.S. Extension staff with expertise in other areas such as 4-H youth development, family and consumer science, and community development were recruited to provide assistance as determined via localized provincial needs assessments. Team members were housed within Poland rural communities, and consequently many became involved with a wide variety of people from the local community in addition to the ODR work environment.

There were several reasons that the Polish-American Extension Project was selected as the study focus. The Polish-American Extension Project was found to be a successful international project, and, as such, it serves as an exemplary overseas technical assistance program. Bahn (1997) found overwhelming success of this project in meeting its objectives in Poland. He found that the provincial-level project created a foundation for a progressive Extension system in Poland by changing the mentality of Extension workers and clientele. The project stressed agricultural economic and market education and led to positive growth in clientele through changes generated within the Polish Extension system.

While the immediate success and impact within Poland’s Extension system and agricultural sector were well documented, there was a lack of empirical evidence of domestic impact or implications within the United States from this overseas technical assistance program. There was no documentation about what effect that this international project had upon project participants, their Extension organizations, clientele, and their communities. Moreover, many Americans believe that overseas technical assistance programs are merely a drain on United States resources, and the tangible benefits to the United States are limited, if any. In an era of shrinking budgets for international development projects and an increasing need to show justification and accountability, the value of this study was both timely and important.

**Purpose and Objectives**

The purpose of this study was to document the domestic implications and impacts, both positive and negative, that resulted from the Polish-American Extension Project (PAEP). Specifically, the study was designed to assess and document the extended involvement of PAEP participants, colleagues, community members, groups and constituents in continuing interactions with Poland. Especially targeted were any social-cultural linkages or implications and endeavors that have affected PAEP participants and, in turn, a larger cross-section of Americans.

The study was also conducted to determine professional, personal, and cultural/social implications and impact among American Extension professionals and near-associates resulting from the PAEP. The study yielded results that are beneficial to organizations and individuals seeking to improve international cooperative assistance programs and projects through strong domestic involvement and interaction.

**Methods and Procedures**

The research design was a descriptive case study to systematically describe the domestic implications and impacts of the Polish-American Extension Project on participants and near-associates. Near-associates were defined as individuals who had direct contact with the PAEP participant and had at least some knowledge of the participant’s PAEP assignment. This group
of individuals included immediate supervisors, Extension administrators, coworkers, community representatives and family members. Community representatives included advisory committee members, Extension board members, county commissioners, and Extension clientele.

A mixed-method design was utilized in which a quantitative methodology (a mail survey) was used in conjunction with qualitative methodologies (semi-structured on-site and telephone interviews). Data analysis proceeded sequentially, whereby the survey data were analyzed prior to beginning the interviews. The preliminary analysis of the survey data provided a foundational basis for the subsequent development of interview questions and analysis of the resulting qualitative data. Typology development was utilized to integrate the quantitative results with the qualitative results (Caracelli & Greene, 1993).

Three primary research steps were conducted in order to garner the descriptive data. First, a census survey was conducted among PAEP participants (N=70, 95.7% response rate) for domestic impact assessment as well as indication of linkages that resulted. The overall purpose of the questionnaire was to document the effects of this overseas technical cooperation experience on American PAEP team members. Sections of data from the questionnaire were utilized to help explain subsequent integration of an international dimension into Extension units and educational programming. Data were entered into a preset SPSS quantitative analysis program, and basic statistical analysis tests were conducted.

Secondly, on-site interviews (N=97) were conducted in eight randomly selected states to obtain in-depth data from participants and near-associates consisting of immediate supervisors, administrators, coworkers, citizens, and family members. Priority was given to conduct actual face-to-face interviews with those selected, but telephone interviews were utilized where and when necessary. For the on-site interviews, preference was given to individuals who had knowledge or experience prior, during and subsequent to an individual's PAEP participation in order to obtain the most comprehensive and robust data (Patton, 1990; Denzin & Lincoln, 1994). A sampling frame (Denzin & Lincoln, 1994) was also established around the factors of male/female, single/multi-term assignment, program focus, and county/state staff.

Thirdly, additional telephone interviews (N=28) were conducted among community representatives across five states who had been subsequently involved with one or more international endeavors resulting from an Extension professional’s PAEP participation. This included individuals who had been involved with hosting international visitors, exchanges, study tours, social-cultural linkages or business endeavors. PAEP participants were asked to identify individuals or groups in the U.S. with whom they referred or connected to Polish people or groups. PAEP participants provided 50 referrals, and of these referrals, 28 were available to be interviewed by phone and comment on their experiences. The majority of these linkages were of a social or cultural nature.

Interview guides were developed and utilized to gather in-depth qualitative data from participants and near-associates based upon data derived from the preliminary questionnaire instrument. One fundamental guide was developed and minor adjustments and revisions were made dependent upon the category of near associate. The semi-structured interview guides served to provide structure and a protocol to assure consistency of data between and among sites and interviewees.

A panel of experts consisting of faculty with Extension and international experience from The Pennsylvania State University and Michigan State University were utilized for evaluation of content and face validity and pilot testing of the mailed questionnaire and interview guides. Suggested changes and improvements were subsequently incorporated into each instrument prior to its use. For the mailed questionnaire, Cronbach’s alpha reliability coefficients ranged from acceptable to good (0.69 to 0.92), and all items revealed strong correlations with the totals.

Prior to qualitative data analysis, responses were coded using numerical codes established for each site to ensure anonymity. The qualitative data were entered into a word document and categorized for subsequent content and critical
incident analysis. Analysis of the data consisted of bringing order to the data display and organizing it into patterns and categories based upon type of response and respondent classification.

Data interpretation involved assigning meaning and significance to the data, and defining descriptive patterns, associations and linkages among characterizing levels. This involved finding common themes that emerged from the data. Logic comparison was utilized in determining similarities and dissimilarities between the expressed outcomes and inhibiting aspects among those interviewed. From these common themes, major and minor themes emanated that were used for assigning judgment and then, subsequently, recommendations. Interview triangulation was conducted with data from other respondents and through observation to assure the highest rigor and validity of the qualitative data (Lincoln & Guba, 1985; Patton, 1990). The qualitative data were also used to clarify and/or substantiate findings revealed via the participant questionnaire.

**Results**

Involvement in the PAEP was an extremely satisfying experience for the participants. Over 89 percent rated the experience highly satisfying to very satisfying depicting strong interest, commitment, and support for their work. Of a possible eleven-point satisfaction scale, respondents rated the assignment 9.29 (very positive). Most participants (48%) rated the experience 10 while another 42 percent rated it 9 (Table 1).

Participants derived extensive impact from the experience (8.53 of a ten-point scale). They were able to gain increased global awareness, appreciation, and understanding; improved self-esteem, motivation, and reinvigoration; and they gained professionally in the areas of grassroots input, needs analysis, program development, and synergetic relationships with others. Through this international experience, participants felt that others had also received impact. On a ten-point rating scale, participants' felt that immediate and extended families had received highly moderate impact (6.79), and colleagues and clientele had received moderate impact (5.20) (Table 1).

<table>
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<th>Table 1</th>
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<td><strong>Perception of Participant Satisfaction and Overall Impact of the Polish-American Extension Project Assignment</strong></td>
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<th>Characteristic</th>
<th>Mean*</th>
<th>Std. Dev.</th>
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<tr>
<td>Participant satisfaction with their PAEP assignment</td>
<td>9.29</td>
<td>1.02</td>
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<tr>
<td>Participant personal and professional development</td>
<td>8.53</td>
<td>1.38</td>
</tr>
<tr>
<td>Impact on immediate and extended family</td>
<td>6.79</td>
<td>2.78</td>
</tr>
<tr>
<td>Impact upon colleagues and clientele</td>
<td>5.20</td>
<td>2.93</td>
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* Mean was calculated from an eleven-point scale that ranged from 0 = No impact; 5 = Moderate impact; to 10 = Extensive impact.
This effort by PAEP participants to extend the effect of the project domestically was an important step to improve the public’s attitudes and perceptions of international involvement (Holsti, 1996). People were able to connect with another country through someone that they knew. Extension was able to play a major educational role to advance public awareness and understanding through this type of extended involvement and interaction (Acker & Scanes, 1998; Moser, 1998; Johnsrud & Black, 1989; Smuckler et al., 1988).

Professional impact was clearly evident among most of the participants. The project brought about a positive degree of influence in relation to Extension career opportunities, their Extension position, clientele and community relationships, and professional relationships. Some participants (16 to 32 percent) perceived no impact in these areas while very few (2 to 9 percent) felt negative impact. Those denoting negative impact felt that the assignment hindered their professional growth, promotion, and/or tenure. The experience served to increase the status of most participants within the Extension organization, as well as, with their communities and Extension clientele. They were able to convey new international knowledge, awareness, and understanding that was appreciated by others (Table 2).

Table 2

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<tr>
<th>Percentage Distribution and Means of Self-Perceived Influencing Factors Resulting from Participation in the Polish-American Extension Project.</th>
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<td>Influencing Factor</td>
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<tr>
<td>Extension career opportunities</td>
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<td>Extension position or relationships</td>
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<td>Clientele relationships</td>
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<tr>
<td>Community relationships</td>
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<tr>
<td>Professional organization relationships</td>
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<tr>
<td>Participants’ family</td>
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<tr>
<td>Participants’ health</td>
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<tr>
<td>Participants’ economic well-being</td>
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</table>

* Mean was calculated from a five-point scale that ranged from 1 = Negative Influence; 3 = No Influence; to 5 = Positive Influence.

A significant amount of communication and interaction occurred during the PAEP, and many people realized these benefits. People became more cognizant and involved with a participant’s work in Poland, resulting in increased international interest, appreciation, and understanding. These efforts served to integrate international components into Extension programming. Several PAEP participants successfully utilized communication methodologies such as radio programs, newspaper articles and newsletter stories during their assignment, and this provided connection to clientele and stakeholders. People were able to maintain a sense of connectedness with the individual that minimized disregard for the person or the position. These steps also enhanced international awareness and understanding among all near associates. Inclusion of United States citizens became a convincing attribute of the PAEP. This
involvement occurred indirectly as a result of interactions and linkages that evolved from the initial project, and most of these resulted from PAEP participant initiation. This involvement included exchanges, study tours, hosting international visitors, development of an international 4-H foundation, business endeavors, and trade. A significant number of people resultanty received an effect from this international endeavor. Many of these would have not occurred without the PAEP and the large amount of involvement that subsequently ensued (Table 3).

Table 3

Interaction and Communication between the Local Extension Unit and the Polish-American Extension Project Participant during the Assignment

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean*</th>
<th>Std. Dev.</th>
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<tr>
<td>Took slides and notes for explaining the assignment to U.S. Extension colleagues and clientele</td>
<td>4.36</td>
<td>0.92</td>
</tr>
<tr>
<td>Ability to receive resources from their home unit when requested</td>
<td>3.49</td>
<td>1.11</td>
</tr>
<tr>
<td>Participant received communications or responses from their home unit</td>
<td>3.15</td>
<td>1.20</td>
</tr>
<tr>
<td>Participant initiation of communication or requests to their home unit</td>
<td>3.06</td>
<td>1.00</td>
</tr>
<tr>
<td>Involvement of U.S. Extension colleagues during the PAEP assignment</td>
<td>2.92</td>
<td>1.15</td>
</tr>
<tr>
<td>Prepared newsletters or news-releases for U.S. Extension use while on the PAEP assignment</td>
<td>2.62</td>
<td>1.38</td>
</tr>
<tr>
<td>Extension organization initiated communication with the PAEP participant</td>
<td>2.20</td>
<td>1.09</td>
</tr>
</tbody>
</table>

*Mean for interaction and communication computed from a five-point scale of 1 = Not at all; 2 = A little; 3 = Somewhat; 4 = Quite a bit; and 5 = Very much.

Most PAEP participants took extensive steps to integrate the international experience into subsequent extension programming. Resultantly, others were able to gain an increased knowledge, cognizance, discernment, and involvement from this international effort. Positive findings were noted among most interviewees regarding secondary effects to near-associates, the Extension organization and to clientele from the international experience.

Participants utilized various approaches upon their U.S. return to communicate the experience to others and for its integration into subsequent Extension programs. A very significant number of presentations were made to clientele and community groups as over 46 percent of participants stated extensive involvement (16 or more instances). Over 31 percent shared a significant amount of resources or materials about international programs, and 27 percent extensively counseled others based upon their experiences (Table 4). Mean categorical values from highest to lowest levels of integration of the international experience into PAEP.
participants’ subsequent extension program are noted in Table 4.

Clientele were impacted by the newfound insight of the participant as well as the numerous presentations delivered by participants upon their return. To derive an estimate of the total impact of these participant presentations, the midpoint of each category was used as the frequency of linkages and these frequencies were multiplied by the number of participants responding within each category in Table 4. Based upon this information, it was conservatively estimated that 753 presentations were delivered to colleagues and clientele in local communities across the United States, which is an average of 11 presentations per participant. If only 20 persons attended each presentation on average, then over 15,000 people would have been exposed to this international Extension project. Likewise, it was conservatively estimated that over 531 linkages between citizens in the U.S. and Poland had or are occurring from this initial PAEP endeavor based upon these findings.

All secondary interviewees were queried as to their perception of the importance of international involvement of the USDA, U.S. universities, and U.S. citizens. This was conducted to determine the level of public support for similar international projects among people who had at least some knowledge and awareness of the PAEP. Of a possible five-point scale, all respondents provided positive ratings. Average ratings across all groups ranged from 4.1 to 4.9 (important to very important) (Table 5). The nonparametric Friedman test was utilized to determine response differences across and within groups, and there were no significant differences across the three categories of international involvement except for the coworker group. As compared to other respondent groups, coworkers displayed statistically significant difference for the importance of USDA and university international involvement. Coworkers displayed no statistical difference in regards to citizen involvement. Within groups, no statistical significant difference was displayed in ratings of importance of involvement for citizens, universities, or USDA (Table 5).

These very positive results support the concept proposed by Holsti (1996) that citizens who are aware of and understand international involvement are more supportive of U.S. involvement in international cooperative assistance. Prior to administering the interviews, it was predicted that Extension administrators would be the most supportive and citizens least supportive overall; however, a different phenomenon occurred. Although there was no statistical difference, community representatives were the group that rated international involvement highest overall on average. The lower ratings provided by coworkers for international involvement of USDA and universities were attributed to the strains they may have faced in providing program coverage while a colleague participated in the PAEP.

The structure of the PAEP was unique since communication and interaction between the participant and their home Extension unit during the assignment was enabled and encouraged. This international involvement included newsletters, news-articles, radio programs, mailings, faxes, and requests for educational and subject-matter support. This differed from other international technical assistance projects in which there tends to be minimal connection during or after the assignment. As a result, more people were aware and involved with this international Extension effort, and this broadened awareness, understanding and impact among others who were not directly involved in the PAEP.

The unanimous opinions of secondary PAEP contacts via telephone interviews were that their interactive experiences with Polish people were extremely positive. These U.S. citizens were involved in various international activities that subsequently occurred because of connections resulting through a PAEP participant. The wide diversity of interactions included: farmer exchanges, Extension educator tours, study tours, hosting international visitors, international 4H/youth involvement, and business interactions. Interviewees provided word phrases such as “very positive,” “definitely positive,” “an eye opener,” and “very important”
as comments in response to the question: “How would you describe these secondary international interactions?”

A very high level of actual impact among these community representatives was revealed through these interviews. Respondents stated that they were able to personally learn and gain from their secondary international involvement. The findings indicate that interviewees gained the following attributes from their active participation:

- Satisfaction from helping people;
- Increased awareness of cultures, people, and history;
- Broadened world views and competencies;
- Expanded insights about interactions of environments and people’s behavior;
- An appreciation for differences among people, and;
- Increased knowledge of international markets, business transactions, and difficulties of labor and product supplies.

This sample of globally involved citizens was also asked the three rating questions concerning the importance of international involvement for citizens, universities, and the USDA. Overall rating were very high ranging from 4.8 for citizens, 4.8 for universities, and 4.7 for USDA (of the five-point rating scale). There were no significant differences across any of these groups. These ratings do correlate with the ratings provided by the community representatives during the on-site interviews. This group provided average ratings of 4.7, 4.6 and 4.7, respectively for citizen, university and USDA involvement. These findings provide further documentation in regards to support of international cooperative assistance projects among those who are aware of and understand such involvement through direct and indirect involvement (Holsti, 1996).
### Table 4

**Output, Visibility and Integration of the Polish-American Extension Project into Participants’ Subsequent Extension Program**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>None</th>
<th>A few</th>
<th>Some</th>
<th>Moderate</th>
<th>Extensive</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Extension presentations to clientele and community groups</td>
<td>3.0</td>
<td>14.9</td>
<td>25.4</td>
<td>10.4</td>
<td>46.3</td>
<td>3.82</td>
<td>1.25</td>
</tr>
<tr>
<td>Shared materials or resources about Extension international programs</td>
<td>6.0</td>
<td>28.4</td>
<td>19.4</td>
<td>14.9</td>
<td>31.3</td>
<td>3.37</td>
<td>1.35</td>
</tr>
<tr>
<td>Counseled individuals in regard to International Extension</td>
<td>6.0</td>
<td>26.9</td>
<td>26.9</td>
<td>13.4</td>
<td>26.9</td>
<td>3.28</td>
<td>1.29</td>
</tr>
<tr>
<td>Created linkages with U.S. citizens/groups and Poland</td>
<td>4.5</td>
<td>37.3</td>
<td>26.9</td>
<td>11.9</td>
<td>19.4</td>
<td>3.05</td>
<td>1.21</td>
</tr>
<tr>
<td>Level of subsequent interactions with people from Poland</td>
<td>4.5</td>
<td>45.5</td>
<td>16.7</td>
<td>15.2</td>
<td>18.2</td>
<td>2.97</td>
<td>1.24</td>
</tr>
<tr>
<td>International Extension media communications disseminated</td>
<td>18.2</td>
<td>33.3</td>
<td>19.7</td>
<td>7.6</td>
<td>21.2</td>
<td>2.80</td>
<td>1.41</td>
</tr>
<tr>
<td>Educational programs designed or modified with international perspective</td>
<td>16.7</td>
<td>40.9</td>
<td>21.2</td>
<td>10.6</td>
<td>10.6</td>
<td>2.58</td>
<td>1.20</td>
</tr>
<tr>
<td>Print materials developed and utilized with international perspective</td>
<td>20.0</td>
<td>41.5</td>
<td>18.5</td>
<td>13.8</td>
<td>6.2</td>
<td>2.45</td>
<td>1.15</td>
</tr>
<tr>
<td>Supported community groups with international interests</td>
<td>22.7</td>
<td>54.5</td>
<td>12.1</td>
<td>3.0</td>
<td>7.6</td>
<td>2.18</td>
<td>1.07</td>
</tr>
</tbody>
</table>

* Levels of interaction and value labels were defined as (1) None; (2) A Few = 1-5; (3) Some = 6-10; (4) Moderate = 11-15; and (5) Extensive = 16 or more interactions or instances.
Table 5

Participants’ and Near Associates’ Perceptions of the Importance of International Involvement of the USDA, U.S. Universities, and U.S. Citizens; and Results of Friedman Test of Rank Differences within and across groups on Rating of Importance

<table>
<thead>
<tr>
<th>Perceived level of importance for international involvement by interviewee group</th>
<th>Mean Ratings*</th>
<th>Mean Ranks*</th>
<th>N</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of USDA Involvement</td>
<td></td>
<td></td>
<td></td>
<td>Chi Square 15.62</td>
</tr>
<tr>
<td>Extension administrators</td>
<td>4.63</td>
<td>4.25</td>
<td>27</td>
<td>df=5; Sig. .008**</td>
</tr>
<tr>
<td>Immediate supervisors</td>
<td>4.58</td>
<td>3.00</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Coworkers</td>
<td>4.36</td>
<td>1.50</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Community representatives</td>
<td>4.67</td>
<td>3.56</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Family members</td>
<td>4.92</td>
<td>4.58</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Participants</td>
<td>4.77</td>
<td>4.08</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Importance of U.S. University Involvement</td>
<td></td>
<td></td>
<td></td>
<td>Chi Square 13.64</td>
</tr>
<tr>
<td>Extension administrators</td>
<td>4.50</td>
<td>3.42</td>
<td>27</td>
<td>df=5; Sig. .018**</td>
</tr>
<tr>
<td>Immediate supervisors</td>
<td>4.67</td>
<td>3.42</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Coworkers</td>
<td>4.12</td>
<td>1.58</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Community representatives</td>
<td>4.64</td>
<td>4.83</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Family members</td>
<td>4.42</td>
<td>3.67</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Participants</td>
<td>4.69</td>
<td>4.08</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Importance of U.S. Citizen Involvement</td>
<td></td>
<td></td>
<td></td>
<td>Chi Square 8.31</td>
</tr>
<tr>
<td>Extension administrators</td>
<td>4.56</td>
<td>4.25</td>
<td>27</td>
<td>df=5; Sig. .140</td>
</tr>
<tr>
<td>Immediate supervisors</td>
<td>4.50</td>
<td>3.33</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Coworkers</td>
<td>4.24</td>
<td>2.25</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Community representatives</td>
<td>4.73</td>
<td>4.17</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Family members</td>
<td>4.58</td>
<td>3.75</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Participants</td>
<td>4.62</td>
<td>3.25</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

* Means were calculated from a five-point scale that ranged from 1 = Not important; 2 = Somewhat important; 3 = Indifferent; 4 = Important; to 5 = Very Important.

** Significant at .05 level of significance.

Conclusions and Recommendations

This research has documented the importance of Extension efforts to enhance global knowledge and understanding domestically. The public attained a better global appreciation for Extension’s international involvement through those directly involved in the Polish-American Extension Project. People were able to learn more about another country, its people, and its agriculture. Because of this, more people have some type of connection to another country. Participants in the PAEP clearly obtained a personal and professional benefit from the international experience. They returned to the U.S. with improved skills, new knowledge, renewed enthusiasm, and greater commitment to Extension education. Because of this, Extension
clientele and the public were able to receive a greater amount of relevant international programming. Extension organizations subsequently benefitted from reinvigorated faculty and staff.

The Polish-American Extension Project provided numerous opportunities for involvement outside the actual project. Because of the resultant extended involvement and domestic benefit, a cooperative assistance model as utilized via the PAEP rather than more traditional technical assistance models is recommended. Through cooperation, collaboration and partnerships, people became involved through interactions, exchanges, study tours, and linkages. As a result, people obtained various levels of international experience or involvement who may not have otherwise.

Many more people were able to gain international awareness, insight, and understanding through this extended involvement. Communication and interaction during and subsequent to the international PAEP assignment facilitated these positive outcomes. Similar efforts should be established and encouraged to facilitate the best possible domestic benefit and impact from international Extension endeavors. Interviewees strongly stated that established communication and interaction guidelines for participants as well as home Extension units prior to the assignment would have augmented impact even further.

International programs should facilitate the involvement of participants’ families to strengthen and extend educational possibilities in the recipient country. Families served in a strong supportive way during the PAEP international assignment for participating faculty and staff. Family members were involved as volunteer educators and leaders. Children of PAEP participants attended Polish schools and became integrated into local communities. Family members served to open many doors for interaction with Polish residents. Moreover, family members returned to the U.S. with greatly increased knowledge and understanding that was extended to the public. This augmented and strengthened the domestic level of awareness and understanding among others that was actually attained.

In the future, greater effort should be placed on the establishment of mutually beneficial collaborative global partnerships involving extension professionals. This occurred to some extent with the PAEP, but it could have been intensified. There are numerous contextual benefits that can be derived through cooperation and collaboration among international education providers and individuals. Cooperative international efforts would help foster cognizance between the U.S. and other countries through a spirit of camaraderie and partnership.

The prominence of global issues and internationalization causes greater need for people to fully comprehend the complexities of an intertwined worldwide society. The U.S. is becoming more dependent upon international markets and trade to further its economic success. Exports generate over half of the gross national product for U.S. agriculture, and developing countries account for about half of this amount. As these developing countries improve their economies, they can afford more and better products, including food. This market development is important for the agricultural sector as well as the entire U.S. economy (Schumacher, 1998).

Extension can play a key role in this regard through taking a proactive approach to instill international appreciation, knowledge, and discernment among its clientele and the general public. Americans need to comprehend how the U.S. is interconnected to other countries through trade, economics, and politics as well as social-cultural ties. Extension should provide a key visionary leadership capacity in helping the populace realize and comprehend these issues.

Through Extension, Land-Grant Universities are able to achieve contact with the public and address nonformal educational needs while improving the public’s economic well being and quality of life. An essential part of this public education endeavor should consist of international issues. It is vital for Americans and particularly those involved with American agriculture to have a global understanding and adjust their business accordingly based upon
what is known. U.S. producers would benefit in many ways from solid broad-based knowledge of international markets and other countries. Steps should be taken to enable cooperative international opportunities for Extension faculty and staff along with stronger integration of relevant international perspectives into Extension programming to enhance global knowledge, skills and understanding of U.S. agricultural producers and the general public.

References


The Iowa State University/National Agricultural University of Ukraine Linkage Project: A Case Study of Reform of an Institution of Higher Agricultural Education in Ukraine

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Abstract

This article analyzes the context, processes, and outcomes of a joint American/Ukrainian university linkage project developed to assist the leading Ukrainian agricultural university in adjusting to the economic and political realities of the post-Soviet period. Educational leaders in Ukraine are looking for specific ways to reform education. From 1994 through 1998, the National Agricultural University of Ukraine (NAUU) and Iowa State University (ISU) administrators and faculty worked together to design and implement a university affiliation or “Linkage Project.” The objectives of the project were to: (1) revise and restructure curricula; (2) develop and acquire educational materials; (3) incorporate new teaching methodologies; and (4) modernize NAUU administrative structures. The project assisted in improving curriculum content at the university level, greater public access to higher education, student choice in selecting courses and majors, service to society on problems of special relevance to citizens, active teaching methods that engage learners and go beyond mere provision of information, and integration of teaching and research within the same institution. The project was supported by the U.S. Information Agency (USIA).

Introduction

This article analyzes the context, processes, and outcomes of a joint American/Ukrainian university linkage project developed to assist the leading Ukrainian agricultural university in adjusting to the economic and political realities of the post-Soviet period. The analysis reaffirms a comment made almost a half century ago.

There is no pat formula for an educational solution which applies everywhere and at all times. It is necessary to study a system of education in its own culture pattern, using a check list or morphology covering philosophy, people, land, historical determinants, and technology in relation to educational development.” (Moehlman and Roucek, 1952, p.1).

Historically, European universities have exerted significant influence worldwide over models of higher education. Examples include the U.S. and Russian systems that borrowed heavily from German university traditions. There are historical parallels in the early development of higher education in Russia and the U.S. Both countries have taken from German education what they felt would fit them. Yet, the systems of higher education evolved in both countries as unique and quite different systems. Russian and then Soviet universities have utilized the attributes of German rigorous administrative structure by taking it to the extreme, in the process making it fairly unwieldy (Sadlak, 1996). The American higher education system kept some components of the German system, but changed its essence to reflect the democratic nature of American society.

During the past decade, Russia and its former satellites have been looking for ways to modify their systems of higher education to function under open market conditions (Williams, 1998). During this period of history, the American model of higher education seems to be more attractive to the nations of the former Soviet Union. Examples of higher education systems patterning reforms after the U.S. system include...
agricultural universities in Russia, Ukraine, Armenia and several other newly independent countries of the region.

Ukrainian Education from an Historical Perspective

The absolute control of higher education by governments in Eastern Europe has a long tradition. Historically, the system was built on the principles of an administrative structure based on the German tradition (Eklof and Dneprov, 1993, p.3, Dalichow, 1997). Under the communist regime, the situation deteriorated as schools and universities suffered from total political oppression (Zajda, 1980). As Cerych (1991) points out, “The old system gave a central party almost total political control of access, of the curriculum, of academic staff appointments, of institutional management (insofar as it existed), and of resource allocation.” (p. 351). Such heavy centralization has had an adverse impact on all participants of the educational process, depriving instructors and students of the joy of “critical and creative thinking” (Mestenhauser and Ellingboe, 1998, p.25).

In addition to the residue of the past policies of the higher education institutions in Eastern Europe and Ukraine, there are some present day issues (Watt, 1997):

1. the absence of a philosophy for reform of higher education;
2. the lack of public resources and structural rigidities;
3. the need for private funding; and,
4. the necessity for the structural reform of higher education.

Ukraine and Higher Education

Ukraine is a country with a population of 52 million people and a territory equal to the territory of France (Hodges and Chumak, 1994 p.1). Because of its strategic location, well-educated human resources, considerable military might, sea ports, and rich soil, Ukraine is an influential player in Eastern Europe and beyond.

Changes in the Ukrainian higher education system reflect changes in Ukrainian society, and Ukraine, along with some other parts of the former communist empire, “chose to pursue a decidedly western and democratic course in order to achieve the goals commensurate with their new found status as independent nations.” (Williams, 1998). This democratic course is providing Ukrainian educators with unprecedented chances to explore the world, and to expose its universities to international influence.

With this in mind, educational leaders in Ukraine, along with some of their colleagues in other independent nations are looking for specific ways to reform education, and a number of Ukrainian higher education institutions are working to be more compatible with, but not necessarily identical to, the more democratic and sophisticated systems of higher education in the West. It is important to emphasize that adjustment, alignment, and adaptation are preferred over emulation and wholesale transference of western education systems, an unfortunate trend from the past.

University Linkage Project

From 1994 through1998, the National Agricultural University of Ukraine (NAUU) and Iowa State University (ISU) administrators and faculty worked together to design and implement a university affiliation or “Linkage Project” sponsored by the United States Information Agency. The project was directed initially by Dr. Harold Crawford and later by Dr. David Acker, Director of International Agriculture Programs at ISU. Dr. Dmytro Melnychuk, Rector, NAUU, served as director on the Ukrainian side. Dr. Victor Udin served in various capacities throughout the project. The objectives of the project were to: (1) revise and restructure curricula; (2) develop and acquire educational materials; (3) incorporate new teaching methodologies; and (4) modernize NAUU administrative structures.

Ten colleges were identified at NAUU as counterparts to seven departments in the Colleges of Agriculture and Veterinary Medicine at ISU. Partnership teams were developed with representatives from each of the
participating departments and faculties. In total, 20 ISU and 33 NAUU faculty and administrators participated directly in the linkage project. Departments at ISU and faculties at NAUU made significant contributions. Faculty and administrative leadership time devoted to the project was provided as cost sharing to the grant. Furthermore, faculty members took on the responsibility of the project in addition to their existing duties (Acker and Melnychuk, 1997).

There were a number of characteristics of U.S. higher education that Ukrainian educators valued and wished to consider for modification of their systems. These included:

1. Freedom to determine curriculum content at the university level
2. Citizen control over public universities through governing boards
3. Greater public access to higher education
4. Student choice in selecting courses and majors
5. Service to society on problems of special relevance to citizens
6. Active teaching methods that engage learners and go beyond mere provision of information
7. Integration of teaching and research within the same institution

Table 1
Comparisons of Ukrainian and U.S. systems of higher education

<table>
<thead>
<tr>
<th>UKRAINE (during the Soviet period)</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public access is very limited and competition is very high. No tuition is charged. Entrance exams utilized. Age discrimination.</td>
<td>The largest enrollment in the world. Tuition is charged, but subsidized by federal and state government. No age limit.</td>
</tr>
<tr>
<td>System-wide uniformity of programs.</td>
<td>Diversity of institutions, students, and programs. External influences, originating in society, are important. A client orientation is the key.</td>
</tr>
<tr>
<td>The government controls the university and sets all key policies and procedures. No client orientation or external world input.</td>
<td>Curriculum is determined by professors and their understanding of societal needs.</td>
</tr>
<tr>
<td>State-controlled curriculum: emphasized uniformity. Text books are centrally approved and instructors are limited in terms of the course content.</td>
<td>Active methods encourage student participation in the learning process.</td>
</tr>
<tr>
<td>Primary method of teaching – lecture. The students are supposed to learn theory and memorize (Bollag, 1996). Written essays or interpretative class papers are very uncommon. No emphasis on writing skills.</td>
<td>The content of courses is being constantly updated to reflect the changing body of knowledge. Research is an integral part of the university. External competitive grants play a crucial role in funding for research activities. Publishing is of primary importance.</td>
</tr>
<tr>
<td>Course content has remained unchanged for many years and lags behind the results of current research.</td>
<td></td>
</tr>
<tr>
<td>Research is being conducted, but not expected from the faculty members and is not a priority. Funding is equally distributed among departments, no competitive grants.</td>
<td></td>
</tr>
</tbody>
</table>


Linkage Project and Educational Reforms

Table 1 presents the substantial dissimilarities that exist between American and Ukrainian (during the Soviet period) systems of higher education. These differences did not discourage Ukrainian educators from seeking to integrate their local institutions with western universities. In this process, care is needed to ensure that international assistance does not turn into an attempt to dictate to a foreign partner or to place an alien system into a new environment.

ISU is one of the American higher education institutions that has consciously recognized the value of local educational traditions in Eastern European countries. In international technical assistance, ISU project teams attempt to keep a balance between externally derived innovations and locally established practices. Likewise, the ISU Linkage Project team tried from the beginning to be sensitive to the needs of their colleagues and avoid imposing the ISU system of higher education.

The Educational Reform Process at NAUU

The NAUU celebrated its 100th anniversary in 1998. The University began as the Kiev Polytechnic Institute on September 30, 1898, and during its rich history NAUU has gone through a number of substantial reorganizations to become the leading agricultural university in Ukraine. On August 25, 1992, NAUU was accredited as a university by a decision of the Cabinet of Ministers of Ukraine and later was granted the status of a national university which conferred greater status and much greater autonomy. Prior to that, NAUU was an academy and reported directly to the Ministry of Agriculture and Food of Ukraine, which put serious restrictions on the administration and faculty’s ability to make decisions in the area of curriculum and teaching methods.

At present, NAUU is one of the main higher education institutions in the field of agriculture among the countries of the former Soviet Union. NAUU is comprised of departments, research stations, educational farms, and a publishing center. The departments (known as faculties) are: Agronomy, Agrochemistry and Soil Science, Plant Protection, Forestry, Animal Science, Veterinary Medicine, Mechanization and Agriculture, Electrification and Automation, Agricultural Economics and Pedagogy.

As of 1998, there were 951 teachers on the teaching staff at NAUU, among them 122 (12.9%) have earned a Doctor of Science degrees and are classified as Professors. There are 14 academicians and associate members of the Ukrainian Academy of Sciences and the Ukrainian Academy of Agricultural Sciences, all distinguished scientists in various fields of science and technology. During 100 years of existence, NAUU has trained more than 80,000 specialists in the field of agriculture and forestry.

The project was designed to focus on a few areas identified by the leadership of NAUU as crucial for the reform of their institution. These were 1) revision of curricula; 2) development and acquisition of educational materials; 3) incorporation of new teaching methodologies; and (4) modernization of NAUU administrative structures.

Curricula Revision

Curricula revision became the centerpiece of the linkage project. In general, revisions focused on bringing the curriculum in line to support the adoption of free market principles as well as to infuse the curriculum with source materials heretofore underutilized in Eastern Europe. This process required a meticulous study of curricula at NAUU, conducted by ISU faculty in cooperation with their Ukrainian counterparts. Curricular review at the departmental level was complicated by a need to translate all the materials (and discussions at most meetings) from Ukrainian into English and vice versa. Early in the project, all the curricular revisions had to be approved by the Ministry of Agriculture. The situation changed in 1996 when NAUU gained its independence by obtaining the status of a national university. Even though NAUU received its autonomy, its administration still continued a constructive dialogue with the Ministry of Agriculture’s Department of Education. In the long run, this approach led to significant influence over other agricultural universities in the country; these
schools followed the pattern taken by the lead national university and reformed their curricula utilizing the NAUU model (Melnychuk, 1998).

As a part of the major changes, NAUU introduced the new degrees of Bachelor of Science and Master of Science while maintaining the existing Specialist and Candidate of Science degrees. Undergraduate and graduate catalogues were developed and published by NAUU, allowing students to choose their programs of studies for the first time in the history of higher agricultural education in Ukraine (Melnychuk, 1998). The catalogues also included elective courses which represents a real innovation and, although the system of electives has not become a common practice yet, it has become a major step forward in democratization of university programs.

The introduction of new degrees also facilitated development of new majors. Now the combination of current courses and the introduction of new ones offers students a richer “menu” of majors. These new majors were reviewed for international comparability with credit systems not only in US, but also in Europe through cooperation with Humboldt University of Berlin. After a number of peer reviews, ISU signed two Memoranda of Agreement in 1997 and 1998 recognizing some programs at NAUU as comparable to those at ISU.

Educational Materials

In the Soviet Union, educational materials and textbooks were generated under the guidance of the Ministry of Education and, after approval, were distributed among universities. Only rarely could students purchase textbooks, and most of the time, they had to check educational materials out from libraries. Faculty members did not have a choice of textbooks for their courses and textbooks were, in some cases, obsolete. Instructors relied heavily on their notes when lecturing.

Today NAUU is free to produce its own textbooks and teaching materials. The textbooks still have to be approved at the departmental level, but in comparison to past practices it is still a significantly more decentralized system. Despite this flexibility, the quality of textbooks is affected by the economic crisis in Ukraine that has caused a substantial decrease in funding for research. This deficiency, though, can be made up for by the new freedom of exchange of scientific information through international faculty exchanges and use of the Internet. These new opportunities for enriching teaching materials have improved students’ access to current sources of knowledge. In addition, the linkage project also provided opportunities for NAUU faculty members to obtain American course syllabi, videos, and extension and research publications for their own departmental use.

Extensive use of international sources of reference brought about another issue related to the teaching materials at NAUU - knowledge of foreign languages. For example, at the Institute of Agricultural Management, English is becoming more and more the language of instruction, since universally much of the terminology in business and information technology is English based (Mason, 1998). The linkage project addressed this issue by establishing the English Language Center within the Institute of Agricultural Management. The faculty at the Center were able to improve English language instruction, and in general, foreign languages became an integral part of the curriculum, not only at the economics departments but at the university as a whole.

New Teaching Methodologies

As a part of the linkage project, a great emphasis was placed on improvement of teaching methods. The traditional approach of one-way lecturing without opportunities for feedback from the students was hampering educational reforms at NAUU. Taking advice from the ISU faculty, NAUU introduced a more learner-centered education approach through dialogue, workshops and seminars. Student initiative was also emphasized. Students are now required to submit papers in more subject areas in order to develop independent research skills.

As a part of teaching methodologies improvement a new Media Resource Center was equipped with modern copy machines and
computers. At the Center instructors prepare teaching materials and slide presentations. E-mail access permitted NAUU faculty to communicate with their counterparts at ISU (and elsewhere) when they needed assistance with putting together teaching materials or handouts that reflected the results of current research.

**Administrative Reform**

The university modernization could not be fully completed without a substantial revision of administrative structures and practices. The leadership at NAUU drew heavily on the administrative model at ISU in redesigning their administrative structure (Acker and Melnychuk, 1997). As part of administrative restructuring, NAUU has introduced such administrative positions as Provost, Vice Rector for Student Affairs, and Director of Extension. These changes made the administrative setup at NAUU more faculty and student friendly, as well as client oriented. The delegation of some decision-making power to the Provost released the Rector (President) of the responsibility for day-to-day operations and allowed him to focus on development of the university-wide strategies and policies.

The Vice Rector for Student Affairs was made responsible for addressing the daily non-academic needs of students at NAUU. The introduction of this administrative position has significantly improved the situation in dormitories and gave new impetus to social activities on campus.

Additionally, colleges were allowed some limited independence in decision making regarding curriculum, and establishing new programs of study. The general trend at NAUU is that colleges are gaining more confidence in their ability to influence the quality of teaching in their areas of study.

In an attempt to strengthen the research component of the teaching process, a number of research institutes, members of the Ukrainian Academy of Agricultural Sciences, launched joint pilot programs with NAUU. Scientists with many years of research experience became involved in teaching courses to undergraduate and graduate students. The combination of teaching and serious academic research was a real breakthrough in a country where, during the Soviet period, a division between the academic institutes and teaching universities was the norm (Stone, 1998).

**Conclusion**

Profound educational reforms will not come easily in the countries of the former Soviet block. As Bollag (1996) stated, “Educational experts say that Eastern Europe’s rapid economic and political transformation has not been accompanied by a remaking of its antiquated university systems, with their outdated approaches to teaching and learning” (p. 59).

Historically, bureaucratic pressures have inflicted serious damage to the universities in the socialist countries of the former Soviet Union. Reform of the university system will require not only sincere efforts of local educators but also long-term external assistance. NAUU, with support from ISU and USIA, has made significant progress through its partnership. The ISU/NAUU linkage project has been a rewarding experience for both institutions as well as the numerous individual faculty, who generously contributed to the success of the project.

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**Vital Networks in Dutch Agriculture**

The Dutch agricultural sector has been quite successful in the post-war period, and it is generally believed that the agricultural knowledge system has made a major contribution to its innovative capacity. Agricultural extension has played a pivotal role in linking farmers to research, policy makers and the commercial sector. These actors developed into a network which showed a remarkable vitality: cooperation and task division led to and ever increasing specialisation in farming activities and services, enabling the average Dutch farmer to reach a productivity level which is not matched by any other country in the world. The sector conquered a considerable share of the world market in agricultural products, and it became an important political power in the country, which is remarkable for a small and industrial country like the Netherlands.

Success can turn into its opposite if one fails to recognise the signs of changing conditions. I will not argue that Dutch agriculture is in deep trouble now, but it is certainly going through a difficult period since it reached its limits in the years after 1980. Overproduction and pollution forced the government to impose restrictive measures that increased the costs of production and forced the agricultural sector to a drastic reorientation. What we see now is that the once so powerful “green front” is scattering into many smaller pluriform networks performing many different functions in the rural space.

Some of these new networks are more vital than others, and sometimes old structures form barriers for renewal. The former minister of agriculture (1994-1998) has done much to break down such old structures. His successor who took office in 1998 saw that it is was time to build up again. He released his leading policy document (Spring 1999) titled: “Power and Quality”, stating that government has a role to play in stimulating vitality in rural networks. This meant that government should contribute to the creation of conditions which invite people to take up their responsibility in creating a multifunctional rural space which is attractive to farming, recreation, living and making money.

While preparing new proposals for the role the Dutch Ministry of Agriculture, Nature Management and Fisheries should play in rural extension for the years to come I reviewed the different stages extension in Dutch agriculture went through. My conclusion was that in every period new aspects of knowledge come to the foreground, which causes extensionists to redefine their role. Looking at it from this angle, it becomes an interesting question what changes we may expect in the coming years.

In this paper I would like to take the reader along the different stages Dutch agricultural extension has gone through since 1945, in order to investigate what the challenges were which made it necessary to look for a wider definition of extension, and how extensionists responded. I will present a logical framework in which these different roles can be related to each other, which might help to determine what should be the next step. Maybe every step brings us closer to the point of what extension is actually all about.
Roles of Extension

Extension as technology transfer

After the severe famine in the last winter of German occupation in the Second World War food security was the first concern of the Dutch government. The government increased the number of extension workers from 518 to 1219 in the period 1946-1951 (Zuurbier, 1984). They had to teach farmers modern agricultural techniques in order to increase production. Marshall help brought in new farm machinery which farmers should learn to use. Science based analysis leaded to knowledge about the best way of growing potatoes or milking cows. A good extension worker was someone with extended technical knowledge.

This role of extension fits to -what I would call- the instruction aspect of knowledge. There is a best way of doing things, based on sound scientific research, and extension transfers this knowledge to farmers who can use it for improving their production.

Extension as facilitator in community development

At the same time local organisation was recognised as a precondition for improvement. Farmers should reach agreement about the way to go because their active support for change was necessary to modernise agriculture. At the local level “Associations for farm extension” were created that could make use of the services of the government extension worker, while at the provincial and national level the Councils for Farm Extension were given considerable political powers to implement changes. In fact the government delegated part of its power to the farmers leaders through these structures on the condition that they would create unity among the farmers (Frouws, 1994). In the fifties many “Area Improvement Projects” were implemented in which the agricultural extension workers were active along with advisors in home economics. These services would later become the Socio-Economic Extension Service, managed by the farmers organizations and subsidised by the government. In the “Land Consolidation Projects” consensus was even more urgent, because in these projects ownership of plots of land had to be reshuffled to make new farm roads and drainage systems feasible.

Here extension workers facilitated community development, knowing that the local community needed to be receptive for new ideas and actively involved in implementing changes under the specific conditions. Changes would have no chance if they were not sufficiently accepted in the community. Although in this period community development work was not associated with knowledge it is obvious that the social process of acceptance of knowledge did play an important role. I consider this as an aspect of knowledge: the community aspect of knowledge.

Extension as assistance to decision making

In the sixties the target of food security was reached and the local market became saturated for agricultural products. The next target was to gain a share of the international market. In order to do so specialisation of Dutch farmers was promoted by agricultural policies. Not only production, but also productivity had to increase in order to offer a good product at low prices. Specialization and increase of farm scale were necessary. Now farmers had to make choices: there was not one best way of farming anymore. They had to select by themselves what technology would fit them best, and for many it was better to stop farming at all. Agricultural extension got an additional task: to help farmers with their decision making process. Apart from technical knowledge this required communication skills. This was the time when extension education became a profession and Van den Ban defined extension as “assistance to decision making processes”. He stressed that the client is free to choose, and that extension can be effective as long as it proves to serve the interest of the farmer (Van den Ban 1974, 1996).

The notion of knowledge became wider: there is not just one best way, and what fits to one may not fit the other. People have to select from available information, taking their own circumstances into account. This could be called the choice aspect of knowledge.
Extension as intermediate

In the late sixties and early seventies experts involved in development assistance found that technologies that work in western countries did not always have the same effect in the Third World. The circumstances under which agricultural research derived its conclusions were often so different from those of the target population that the results were irrelevant for them. If nevertheless new technologies were imposed on them they would disturb vulnerable social and ecological balances with disastrous effects. “Farming systems research” became popular, taking all these conditions into account. Multidisciplinary teams are necessary for this type of research on the spot, and extension got a role as intermediate between target groups and researchers in the search for appropriate technology.

In Dutch agriculture farmers practice was seen as an important source of information for research. On-farm research was one of the tasks of the regional extension offices, and the chief extension officer was also director of the experimental farms in his area. It should be mentioned that most extension workers were farmers sons (and also daughters, especially in the socio-economic service) and many researchers at Wageningen University and the research institutes had their roots in the farming community as well. In what I would like to call “the anniversary circuits” back home many ideas and experiences were exchanged between the various stakeholders in agriculture.

When specialization increases, the associations for agricultural extension developed more and more into study clubs for the various sectors in which farmers exchange results and experiences. The government extension officers actively supported these clubs. In the formal structure for research and extension the translation of research results to farmers was considered as a task too important to leave it to the researchers themselves. Therefore the extension service developed a fine mazed network with national intermediate services for every sector (e.g. dairy production) and discipline (e.g. housing techniques) located at the research stations. These units ensured the two-way exchange between researchers and farmers in order to speed up the innovation process in agriculture. The regional extension offices did not only provide services to farmers, but they also actively participated in networks with farmers representatives and local governments on policy matters.

In this period Röling argued that the knowledge process should not be seen a flow from research to users, but as a system in which stakeholders interact with each other. Knowledge emerges from this interaction (Röling 1988, 1998). Knowledge is the result of search- and learn processes involving the major stakeholders. This is the search-and-learn aspect of knowledge.

Extension as facilitator for empowerment

Development workers in Third World countries found out that the interests of those who are promoting new technologies were not necessarily the same as the interests of the target group that was supposed to bring them into practice. This was unlike the Dutch situation in those years where farmers were regarding the knowledge infrastructure including the Ministry of Agriculture that is administering it as their own. Extension work for development now included empowerment. Participation became a major tool to enhance local organisation that was necessary for development. Target groups should be enabled to help themselves and to defend their legitimate interests. This facilitating work looked quite similar to the community development work of the early fifties in The Netherlands and in developing countries in the sixties. However, there was an important difference. Instead of making local communities receptive for change, this time the target was to create power in order to withstand others who are exploiting them.

This power struggle was not so visible in the Netherlands in the seventies where farmers leaders, government officers, politicians and captains of the agricultural industry (mostly co-operatives) still very much agreed on the way to go and put great emphasis on consensus. Yet, also in the Dutch extension service the objective of helping people to help themselves was introduced in what is called “capacity building.
extension”. Group-extension was being promoted and the role of extension workers in farmers study clubs was further enhanced. This policy had a practical reason: the government budget did not allow its extension service to grow along with the growing demand for advice, and through groups the efficiency of its efforts would increase.

Especially in development work it became clear that knowledge means power, and that access to information was an important weapon in conflicts of interest. This is the power aspect of knowledge.

**Persuasive extension**

In the eighties Dutch agriculture reached its limits: overproduction created butter-mountains and milk-lakes, and pollution had been ignored so long that the damage caused by manure surpluses and pesticides could no longer be neglected. In 1984 the European Committee imposed quota for milk, and in the same year the Dutch government restricted expansion of pig- and poultry production on sandy soils. These events marked an abrupt change in policies from production increase to production control, and from this moment interests of farmers and government were not the same anymore, at least not in the short run. A long flow of environmental measures followed. Now it was important that farmers understood the background and the necessity of these restrictive measures, and extension was seen as an instrument to promote acceptance. Van Woerkum (1989) worked out the concept of “persuasive extension”.

This time we are dealing with information people would rather ignore. Taking this information seriously would mean that they have to change their behaviour because it is harmful to their environment, to others, or to themselves. Such information has to get across whether these people like it or not. This could be called the imperative aspect of knowledge.

**Extension as advisory business**

In the same period ongoing specialisation of farmers and shrinking government budgets paved the way for private extension agencies, and farmers were prepared to pay for adequate and timely information. Meanwhile government had to admit that it could not control the knowledge system anymore. In the market, actors were free to make their own arrangements for exchanging information services. The government extension service was privatised in 1989. Persuasive extension proved to be difficult because extension workers did not like to serve two masters. The strategy for restrictive policies changed: the law would set out the limits within which farmers had to find solutions, while the necessary knowledge could be acquired in the knowledge market. Private extension workers had no solidarity conflict in helping farmers to cope with government regulations.

Extension can become a business when information and advice are getting a price which clients are prepared to pay. This is the market aspect of knowledge.

**Present Government extension policies**

In the mainstream of present Dutch government policies the market aspect of knowledge plays a dominant role. Government is creating the conditions for free market exchanges. Government services that can be executed by private businesses are being privatized because private institutions can move more easily along with the rapid changes in the market. Structural subsidies to certain beneficiaries have a freezing effect on the market because the beneficiaries have insufficient incentives to respond to changing demands. Such subsidies are being abandoned.

The Dutch Ministry of Agriculture did not learn this lesson at once. When the extension service was privatized the intermediate services were reinforced. Government was concerned about the free flow of information in the open knowledge system in Dutch agriculture, as well as its own access to relevant information which so far had been provided by the extension service with its excellent relationships in the farming community. The Information and Knowledge Center (IKC) were formed as spiders in their webs for technical knowledge. For the communication between different levels
of government and interest groups part of the former extension service was transformed into provincial agricultural offices (CL).

Things turned out to be different. These new intermediate services had a difficult time in establishing their new role in an environment with growing conflicts of interests, a crumbling representation of farmer’s organizations, and a government which did not believe in consensus anymore. The Ministry did not use these services for communicating with interest groups, but as reservoir of experts to develop its own policies. Actors in the knowledge market did not need these services to connect them to each other. In 1995 the two IKC’s for agriculture were merged and cut down to half their size while their offices at the research stations were closed. The 12 provincial centers were reduced to four regional offices. The present situation is that, if government wants to disseminate information that is not picked up by the market, it now acts as a client in the knowledge market, renting services with a clearly defined output and on a temporary basis. There is a budget to be spent on extension, and through a yearly program cycle this budget is allocated to projects with clear objectives that respond to the wishes of the Ministry of Agriculture. At least, that is the idea. In practice it is a bit more complicated because of agreements made during the privatization which still gives the former government extension service exclusive privileges until the year 2000, but this must be seen as an artefact which goes by.

From this review of different roles of extension based on different aspects of knowledge at least two interesting questions emerge. First: are there common traits that unite this family of extension activities? Is it possible to redefine extension in a way that encompasses them all? Second: what is next? Can we foresee how changing circumstances will force us to take yet another aspect of knowledge into account, and what will be the corresponding role of extension?

Roles of Extension in the perspective of vital networks

Where definitions on extension fail

The descriptions of extension I am familiar with are too limited if I try to fit in all roles just mentioned above. The famous definition from Van den Ban, with which extension started to be a distinct profession in The Netherlands, referred to help in decision making. This definition does not give much weight to the interests of the ones who provide the service. It makes sense as long as interests between client and the extension service converge, as was the case in Dutch agriculture when Van den Ban formulated his definition. The definition becomes too limited when the power aspect of knowledge comes at stage. Van den Ban simply excludes the power aspect by stating that extension only works if interests are parallel. But who is being helped by persuasive extension? Extensionists may argue that their interventions will turn out to be help in the long run, but whether the target audience will agree to this still remains to be seen.

Sometimes extension activities are only seen as the distribution of information to specific target groups. This excludes all activities to activate people to communicate with each other and to take up responsibility for their common goals.

Actors who wish to use extension to promote change would not be satisfied with only the distribution of information. They would also like to see acceptance for what needs to happen. A popular notion of extension therefore sees change of behavior as the target. Extension workers are seen as change agents. One objection is that an extension agency rarely controls all factors that determine the final outcome of changing behavior. If this is the objective, the exclusive effect of extension is hard to measure. More serious than this is my principal objection against the change agent. Few people will appreciate an agent who sets as his or her target to change their behavior, as long as they did not ask for this themselves. Their right to choose for themselves is being denied, and they are devaluated to objects that can be changed with the proper instruments. This is an instrumental view on communication that
overestimates the power of the communicator (Van Woerkum, 1997).

Some go further by saying that this change should lead to more autonomy of the target group. This may make sense in some situations, but not as a general definition. In the knowledge market, extension services rather try to establish a steady role in advising farmers by offering them advisory contracts than making themselves superfluous. This cannot be seen as wrong in a society where tasks become further divided and actors become more interdependent.

The perspective of vital networks

In order to find a better definition it might help to take a closer look at knowledge processes in a social context. I will focus on a network of actors who communicate with each other in various ways. Through communication these actors discover that they can be useful to each other or even that their fate is mutually dependent. Thus, the network can have -or develop- an identity, and the communication between the actors tends to take the form of interaction patterns that allow for more efficient communication, a division of tasks and exchange of services and goods. Such networks tend to grow towards more coherence, allowing for higher degrees of specialization and mutual exchange, and requiring more sensitive mechanisms of communication that increasingly stimulate individual actors to aim their efforts to what is collectively needed.

This process is similar to what can be observed in ecological systems, and actually in all processes of life. Capra summarizes a number of recent insights from ecologists, physical scientists, mathematics and neurophysiologists, and concludes that living organisms all can be seen as networks of interrelated components, each forming a network in itself again. Some of the most important conditions for life are:

- that the components are interrelated by feedback mechanisms;
- that the network has an identity distinguishing the inside world from the outside;
- and that the components can exist and reproduce themselves by means of the network;
- while the network is reproduced by the interaction patterns of its components.

Under these conditions living structures can develop over time an ever-increasing task division and complexity. At times old structures have to die in order to make room for new life, and entire structures may have to pass points of instability before reaching a higher order of complexity (Capra, 1996).

The development of living structures is an autonomous process. This notion has far reaching consequences if we accept that human networks can be seen as living structures as well. We can recognize the principles of life in the process in which actors get involved in a network and become prepared to aim their efforts towards the collectivity of the network and thus creating synergy. I like to refer to this as the vital process that takes place in vital networks. Vital processes are self-propelling, and the only thing actors can do to influence them is to create room for them to develop, or to create barriers for communication that disturb essential feedback mechanisms. This also is quite similar to ecology: if the proper biotope is restored life will appear in all its diversity. There is no way to create life and it is not needed either: it will come back if it is given the chance. On the other hand there are many ways to disturb life. Unfortunately people are quite effective in doing so.

Let us now go back to the role of knowledge. I follow Maturana and Varela who see knowledge as a function of social co-ordination (Maturana & Varela 1987). Actors can only communicate if they share sufficient language, meanings and concepts in order to understand each other and to identify each other as belonging to the same identity. Meanwhile there are no two individuals having entirely the same knowledge. Fortunately so, because otherwise there would be nothing to communicate about. These differences make further development of knowledge possible by constantly recombining different experiences, interpretations and concepts into new
experiences, interpretations and concepts.

These differences can be too much, however. In that case they cause confusion. In severe cases this might threaten actors basic concepts and beliefs, affecting their own identity because then they are not able anymore to make proper sense of what they perceive. Cultural shock is a good example. Somewhere between too much similarity and too much difference there is a space where communication is interesting for the actors involved, and where they are willing to contribute to further development of knowledge. This is essential for vital processes, and therefore I call this the vital space. Nobody can predict what will emerge, and it is not possible to accurately determine the limits of this vital space. One only can experience it as interaction that is inspiring and pleasant. One can also recognize the signs of stagnation: too much emphasis on similarity (e.g. if people try to determine what should emerge) slows down development and affects motivation in a negative way.

In a healthy process this gives room for curiosity which pushes actors to look for new differences. Too many disturbing differences lead to confusion and chaos, and a healthy system reacts by decreasing its sensitivity for new signals. Thus, on the dimension of knowledge the vital space is determined by acceptable levels of similarity and differences in the knowledge of the individual actors, and the steering mechanism is the increase or the decrease for the sensitivity for signals.

For vital processes it is not only necessary that people understand each other: they also must take each other seriously. If they keep each other at too much distance, no knowledge exchange will take place. If they come too close, actors will be preoccupied with protecting their own position and freedom of maneuver, which also blocks the road for meaningful communication. Therefore people always communicate at different wavelengths simultaneously: they send and perceive messages at the level of knowledge as well as the level of relations (see e.g. Watzlawick, 1974). At the wavelength of relations people express messages about the position they wish to take vis-à-vis the others. Even by saying nothing someone is sending a message, for instance: “I don’t think you are interesting enough to talk with”.

So, on the dimension of relations there is also a vital space where actors accept each others presence and where development can take place. The limits of this space can not be determined either, and one can only experience each others presence in the communication as inspiring and pleasant, or recognize the signals of stagnation. In a healthy process too much emphasis on the collectivity will cause a feeling of stagnation. A healthy system will react by restoring individual freedom. Too much strive for individual interests will lead to chaos, provoking reactions in order to safeguard the collective protection and benefits.

In this perspective we see that vital processes can develop autonomously if there is vital space both on the dimension of knowledge and relations (figure 1). This can be visualized in what I call the circle of coherence. In the vital space a network can grow towards more coherence, with increasing task division, complexity and diversity.

The circle of coherence is an interesting tool for the analysis of interaction patterns that lead either to vital processes or regression. In this paper I will limit myself to the roles of extension in the Dutch agricultural knowledge system. If indeed development is an autonomous process in which people respond on signals of stagnation, we should be able to observe this in the changing roles of extension. Every new role would emerge as a reaction of the agricultural system upon an interaction pattern that tends to move out of the vital space in certain direction. The new role would then restore the vital space again by putting emphasis on aspects of knowledge that tend to become underestimated. If this hypothesis makes sense, it may help to find an answer on the questions what extension is all about and what role is coming up next.
Roles of extension as means to create vital space

Extension as technology transfer focuses on the knowledge dimension. Vital space appears when the gap between existing knowledge and new knowledge is interesting enough to explore, but not so big that it would create confusion. After the famine farmers felt the need for improvements, and new machinery and technologies had created expectations. This explains curiosity amongst farmers. On the other hand the knowledge gap could not become too wide, because both extension workers and researchers were firmly rooted in the farming community. Farmer’s practices and the limitations of farmers were well known and taken seriously. After his retirement, Vijverberg, who was closely involved in the horticultural knowledge system as chief extension officer and director of the experimental station, recently summarized his experiences in a PhD study. He concluded that in the fifties and sixties researchers were primarily occupied with farmers practices for which they tried to find a scientific basis. Many innovations originated from farmers and spread over the sector after scientific validation and modification. It was only later on that findings from fundamental research became an important source of innovations as well (Vijverberg, 1997).

In the classical opinion on technology transfer the best technical means is developed by research and should be transferred by extension to farmers who are supposed to use it. However, there must be some mechanism that prevents the gap between new technology and farmers practice from becoming too wide. I think Vijverbergs findings help to explain what these mechanisms were in the Netherlands.

Extension as facilitator for community development created vital space in the dimension of relationships. Decisions to change farm practices were not taken in isolation, certainly not in the Dutch farming community of the early fifties. The opinion of leaders, support when things go wrong, and also contributions to collective actions necessary for change: all these social factors needed to be addressed in addition to the pure technology in order to create room for improvement in a community. In the Dutch case, the government created room for the development of strong farmers organizations, firstly through the investments in extension for community development that stimulate local organization, and secondly by delegating power to the farmers organizations on the condition of consensus. Thus, there was a strong incentive to reach agreement amongst farmers and to maintain discipline: something which farmers unions were not able to achieve before the Second World War. This kept diverging powers within limits. Meanwhile there were sufficient opportunities for individual farmers to develop so that the pressure from the collectivity was not yet experienced as too limitative. Here the Dutch “Poldermodel” was born.

In retrospect we can conclude that the simultaneous investments in extension for technology transfer and for community development under the Dutch conditions of the fifties had been a perfect combination to escape from chaos and to create vital space for development. Successful it was indeed, and the innovative process resulted in a growing task division, diversity and high production. At a certain moment this created friction: the network needed to find another fit in the outside world, and the internal structure needed to be adjusted. The external fit was found in the jump towards the international market. Internally the friction was felt in the relations dimension. Not all farmers could continue doing more or less the same thing. Some had to leave while others had to specialize. This transition was facilitated by extension as help in decision making while simultaneously favorable conditions were
created, e.g. by the “Fund for Development and Reconstruction” providing subsidies for farmers to invest in specialized and productive technology and for others to stop farming. This accent in extension focused on the relations dimension, assisting individuals in finding their own space in the collectivity.

Specialisation brought along new requirements. The “anniversary circuit” was not sufficient anymore to maintain the communication lines between the various stakeholders in the knowledge system. Differences could become too complicated to handle. Therefore, information flows had to be organised, and this is where extension as intermediate came in. The fine mazed network that developed in the sixties and seventies along with the specialization in the various agricultural sectors was quite unique in the world, and could exist thanks to the fact that the Dutch agricultural network was strongly aware of its identity. To be successful in the world market the network had to operate untidily to guarantee its reputation. Therefore everyone recognized the need of open, reliable and short information lines between research, farmers and policy makers. This intermediate function created vital space in the knowledge dimension, but also in the relations dimension by maintaining mutual understanding for what needed to happen.

The power aspect seemed absent in Dutch agriculture until the mid-eighties. Of course this was not completely true. Where there is rapid growth, there are victims too. The point is however that the local organization and national representation of farmers had become so strong that it could effectively neutralize any threats to the system. Farmers who could not cope with the race for productivity were gracefully sent to the exit, and critical groups like the environmentalists coming up in the seventies could not match the political power of the agricultural network.

Nevertheless the government extension service moved towards capacity building extension, much similar to extension for empowerment that developed in the same period in many developing countries. In my opinion this is an interesting phenomenon. The new generation of extension specialists by that time which introduced the methodology sympathized with the political target of empowerment. The managers of the government service adopted the method for quite a different reason, namely reaching more farmers with less government workers.

If corrective powers have no chance within the network, they will come from outside. Overproduction became a political problem because the price guarantee system of the European Community turned out much too expensive, and pollution problems had grown to a level where they could not be denied anymore.

Of course these problems were felt earlier in a small and densely populated country with an extremely intensive agricultural production system then it was felt in most other areas in the world. It is actually amazing that it took until 1984 before the first serious restrictive measures are taken, although the responsible expert on soil and fertilization had rung the alarm bell over the unsustainable animal production system already in 1969. In a closer look it is even more amazing that the agricultural lobby appeared to be able to postpone drastic measures even ten years longer. When after 9 years of negotiations finally a “national manure agreement” was signed in 1993 by farmers organizations and government, the farmers did not agree with their leaders and effectively found their way to the parliament to overrule the agreement.

In the dimension of knowledge we see here that unpleasant information had been ignored too long. Farmers needed to find new ways to bring their production systems more in line with the limitations of their environment and the wishes of consumers. Since the unpaid bill for pollution was already quite high, this was impossible without pain. This is where the government extension service received the additional task of persuasive extension. Government was banking heavily on its knowledge instruments research, extension and education, and hoped that farmers would be wise enough to take up their own responsibilities.

In my analysis, government implicitly expected sufficient vital space in the relations dimension to maintain effective communication in the
dimension of knowledge. In this period leaders from both sides frequently expressed that government and farmers had the same interests in the long run. It would be a matter of finding reliable and objective norms for what levels of nitrate and minerals in the soil are acceptable, and government and farmers were jointly investing heavily in technical solutions like industrial processing of excess manure to overcome the problems. The fear for diverging opinions within the system urged government to reinforce the intermediate function under its own management while the extension service for farmers is split off and privatized.

The leaders in agriculture in the late eighties, including those holding public functions, were unable to see that the vital space in the relations dimension became too small to maintain its strong common identity. This loss of coherence was not only due to the restrictions imposed by the outside world. Specialization and diversification had made the distances between farmers and their leaders larger, and the once so powerful farmers commodity board ("Landbouwschap" in Dutch) had become a kind of semi-government. The general decline of hierarchical structures in the Western World had also affected the power of this structure, that could not cope anymore with the new threats from outside and the turmoil this had created inside the farmers networks. At the same time the uniform knowledge system provided by government was unable to address all the needs of the ever further specializing farmers, who instead found their way to commercial advisors. The conflicts of interests affected the extension workers who felt quite uncomfortable having to tell farmers to reduce their milk production while in the years before they had been promoting investments because increase of production would be the only way to survive.

The decision of the top management of the Ministry of Agriculture in 1986 to privatize the extension service was rapidly losing its position in the commercializing knowledge market. Extension as advisory business assured vital space both in the relations and the knowledge dimension on the micro level because otherwise the client would not hire the agent. Furthermore commercial services were much better able to address the changing needs of specializing farmers, that says, as long as they were able and willing to pay the price for knowledge.

Looking at the agricultural network as a whole, there were disadvantages as well. Most farmers did not like to pay for imperative knowledge, e.g. on environment or animal welfare. Furthermore commercial interests made actors more prudent in exchanging information than they were before in the open knowledge system provided by government. When communication lines are cut off, this slows down the speed of innovation. Furthermore, the agricultural knowledge system lost its role as the glue for the common identity of the sector. Until the privatization of the extension service in 1989 policy makers had been intensively updated about developments in the farming community through the direct communication lines provided by its extension service, and considerations at the level of national policy spread rapidly to farmers through the same system. The newly formed IKC’s and CL’s as intermediate extension structures were not able to maintain these information lines because the privatized extension service disconnected the line in its efforts to restore confidence from the farming community.

The once so powerful agricultural network has now split up into many smaller networks, all trying to find their own identity and niches in the market. The shared responsibility of farmers and government for agricultural development in The Netherlands has become history.

What are the common traits of the different roles of extension I mentioned? I think the circle of coherence can help to distinguish them (figure 2). Technology transfer focuses on the best technical means, and should therefore be placed on the axis of knowledge at the side of similarity. This helps if farmers are looking for the best way and try to escape from confusion.
and chaos. As a prerequisite vital space at the relations dimension is needed. Extension as community development helps if farmers feel the need of more co-operation and try to escape from too many individual interests which block the road to progress. We will place it therefore on the axis of relations at the side of collectivity. Together they stimulate an interaction pattern based on consensus. Later on, when communication lines become longer and more complex, extension as intermediate performs a dual function: exchange of knowledge and mutual understanding. These two further enhance consensus as dominant interaction pattern.

Extension as help in decision making can be seen as a response to too much emphasis on collectivity and similarity. Farmers have to find their own identity and make their own decisions. This role can be placed at the axis of relations at the side of the individual. Extension as capacity building and empowerment goes further than that. It is meant to escape from the dominance of the collectivity that imposes too many limitations to the individual freedom to develop the way it wants. It focuses both on relations (becoming a strong actor that can effectively play its own role in the network without being exploited by others) and on knowledge (identifying knowledge with which it can distinguish itself from others in order to acquire a better position). This role is therefore located in between individual and differences.

Extension as advisory business depends on the willingness of individual farmers to pay for the services. On the knowledge dimension these services must be interesting enough in terms of fit into the farming system and potential to improve it. Within the vital space we probably should locate it more at the side of similarity because farmers do not like to pay for unpleasant messages. On the relations dimension it should be located at the individual side, because extension workers should make sure that they maintains a good relationship with their clients by serving their individual interests.

We can now draw a picture, placing the different roles in the circle of coherence. It becomes visible that each new aspect of knowledge with its corresponding role of extension emerges upon developments that move the interaction of the network out of its vital space. These new extension efforts seem to be meant to restore the vital space again, even though the actors involved are not fully aware of this. Technology transfer and community development emerge simultaneously after a period of chaos. Help in decision making emerges after too much emphasis on unity. Empowerment emerges as this emphasis on unity leads to exploitation. The advisory business gets chances when the intermediate is not able anymore to maintain a collective identity.

The common traits of these roles of extension are the following:

1. they are activities by means of communication;
2. they target specific audiences;
3. they focus on specific issues or subject areas;
4. they aim to stimulate target audiences to acquire knowledge that is relevant to them.
This brings me to the following definition of extension:

Extension is a communication activity that aims to stimulate a specific audience to acquire relevant knowledge about specific issues.

Within this definition extension can both concentrate on contents by providing information, and on the process by facilitating encounters between relevant actors. It gives room to intermediate roles: the specific audience might be stimulated most in a two way communication process. The initiative for an activity can come either from the clientele that asks for services or from an agent who has interest in influencing a specific audience. Activities on contents should stimulate vital space on the knowledge dimension while activities on the process should do the same on the dimension of relations.

This definition provides for some distinction from other communication activities, although such distinctions only can be gradual. Education does not limit itself to a certain issue, but covers knowledge and skills that are required for a certain qualification. Training can be part of both extension and education, and deals with the development of skills and/or knowledge about a certain subject. Extension distinguishes itself from public information services by more narrowly specified target audiences.

With this definition we also circumvent my objections against the change agent. Extension cannot aim for more than the acquisition of knowledge by individuals. If an actor judges that this is not enough, other than communicative instruments need to be used. At that moment the question of legitimacy needs to be raised. If the actor has no public authority over the audience to be influenced, he needs to offer a fair deal that can be accepted or refused by the other. If public interests are at stake and the aim is to keep behavior of individuals within limits that are acceptable for the community, a public authority like government has alternative means at its disposal like sanctions by law. These measures should be controlled democratically.

Coming up next:
the mediators role of extension

The second question to answer is: what’s next? What aspect of knowledge will come to the foreground now, and what is the corresponding role for extension? Western societies have gone through the stages of growth of production and productivity. There was hope that the welfare state could be manufactured, until it had to be admitted that reality couldn’t be controlled. Then it was concluded that the market should do its work. The market however does not solve all problems, and society is facing many major challenges that can only be met if many actors take up their responsibility for collective issues. However, it is hard for people to communicate about the costs and benefits of their contributions towards a common goal if their visions on the problems and what needs to happen are wide apart. It requires from individuals and institutions a certain degree of collective consciousness in order to see how their fate is related to others, and how their behavior effects the common good. This is what I would like to call the collective aspect of knowledge.

A combination of market and law is not enough. The market does not necessarily stimulate collective consciousness. Law can only be maintained if a majority of people accepts it. The tendency in society is that worlds grow further apart. Van Woerkum points at the phenomenon of self-referentiallity, describing how networks of e.g. policy makers, farmers or researchers seek confirmation for their vision on reality only in their own circle. This causes growing dissatisfaction between different actors (Van Woerkum, 1997). Others have pointed at the paradox of information overflow: although people have more access to information than ever before, it does not lead to more shared visions. There are so many sources of information available that everyone can easily seek confirmation for his own ideas. The collective aspect of knowledge puts extension in the role of mediator. A mediator stimulates actors to acquire relevant knowledge to the effect that they are prepared to negotiate with each other, and that such negotiations lead
to satisfactory solutions for the common good.

The difference between this mediators role and the role of intermediate is that the mediator deals with conflicting interests. In the period Dutch intermediates were highly successful there was a high degree of consensus on the ultimate goal, and intermediates facilitated the search and learn process in order to find out how to get there most effectively. At present, Dutch politicians still have bad feelings about the consensus period because it has led to a dangerous form of groupthink within the “green front”. The fact that the damaging side effects of uncontrolled growth in Dutch agriculture could be neglected so long can be attributed to this effect.

The mediators role should not be confused with creating consensus, however. It is not necessary that actors agree with each other to create workable relationships. The essential part is that they respect each others interests and vision, and that they recognise that they are interdependent. I would propose therefore to place this role in between collectivity and differences (there where I left a question mark in figure 2), because the mission is not to create unity but to learn how to deal with differences. With the mediators role we can complete the picture of extension roles related to aspects of knowledge (table 1).

Table 1

Roles of extension, related to different aspects of knowledge

<table>
<thead>
<tr>
<th>role of extension</th>
<th>aspect of knowledge</th>
<th>essential elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>technology transfer</td>
<td>instruction</td>
<td>best technical means</td>
</tr>
<tr>
<td>facilitator for community development</td>
<td>community</td>
<td>local organization, receptivity for change</td>
</tr>
<tr>
<td>help in decision making</td>
<td>choice</td>
<td>need to choose, taking specific circumstances into account</td>
</tr>
<tr>
<td>intermediate</td>
<td>search &amp; learn process</td>
<td>required knowledge needs to be developed</td>
</tr>
<tr>
<td>facilitator for participation</td>
<td>power</td>
<td>emancipation; access to information</td>
</tr>
<tr>
<td>persuasive extension</td>
<td>imperative</td>
<td>information has to pass, whether people like it or not</td>
</tr>
<tr>
<td>advisory business</td>
<td>market</td>
<td>information has a price</td>
</tr>
<tr>
<td>mediator</td>
<td>collective</td>
<td>understanding of shared interest; dealing with differences on the condition of mutual respect</td>
</tr>
</tbody>
</table>

Conclusions

Does this analysis bring us closer to what extension is all about? There is a logical sequence in the different aspects of knowledge I mentioned. The latter are adding to- and are sometimes encompassing the earlier ones. Taking a later aspect into account is necessary to cope with a new category of problems, but this does not replace the other aspects of knowledge: they keep their value. When in a certain situation mediation is at stake (collective aspect), still the terms for exchange of costs and benefits must be acceptable for the parties involved (market aspect), unpleasant information has to be taken seriously (imperative aspect), parties have to be aware of the effect of their relative positions on the interaction (power aspect), part of the knowledge needed has to emerge from the process itself (search & learn process), the actors own choices need to be respected (choice aspect), changes must be tolerated in the social context (community aspect), and reliable information should be communicated effectively (instruction aspect).
The contribution I hope to make with this analysis is that professionals who have been concentrating on only a few of these aspects and their corresponding roles of extension might consider the value of other aspects for their situation as well. I also offered a definition of extension that encompasses all the aspects I identified in this paper. However, I do not pretend to be exhaustive. I can very well imagine other aspects coming up in future. Maybe the spiritual aspect of knowledge is next?

In this period in time I see an increasing relevance of the collective aspect of knowledge and the mediators role of extension. We are witnessing a major shift in western societies towards complex network structures which cannot be controlled anymore by central governments or powerful lobbies; networks in which people choose for themselves what knowledge to believe and what things to do. The time that scientists could tell them what is true, and churches or politicians could tell them what to value, is past. People have to take their own responsibility in collective issues, and collective awareness of mutual interdependency is a precondition for this. Meanwhile the time of consensus is over as well. Now we must learn how to cope with the differences and to make good use of it (Van Gunsteren 1998). To this effect the mediators role of extension is to stimulate actors to take each other seriously, in order to create vital space for development in the rural area.

References


A Comparison of Agricultural Credit Use and Non-Use Among Limited-Resource Farm Households in Trinidad

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Abstract

Issues surrounding credit use in developing countries have come to the forefront because of market globalization and the consequent need for farms to be competitive.

This study, conducted among 180 limited-resource, crop-based, commercial-oriented farm households in Trinidad, investigated the variables associated with the decision to use credit or not. Canonical Variate Analysis was used to test differences between group means, as well as to identify the main differentiating variables. Results showed that overall farm performance, some human capital variables (farm experience and education), along with several psychological variables (attitude toward risk, adventurism and fear of the future), and resource-base variables (capital base, entrepreneurial and managerial abilities) were the more important variables that explained differences in households' decision to use credit or not.

Based on the variables identified, profiles of credit users and non users were developed. The importance of the findings for policy and program development was discussed.

Introduction

Economic globalization has changed the nature of agricultural trade. Developing countries are now required to refocus strategies to compete successfully, and this involves strengthening institutional framework to facilitate increased and efficient production. One of the areas that needs attention (IICA, 1998) is the reform /development of specialist institutions that relate to credit, insurance and market promotion. Commercial-oriented, limited-resource farm systems constitute the majority of farm systems in developing countries (Rajack et al., 1990).

These systems have restricted access to most of the key resources necessary for improved, efficient production. Capital, as one of the main factors of production, is necessary to purchase farm inputs and to undertake development work necessary to enhance the competitiveness of farms. The degree of access to this resource will undoubtedly influence farming decisions. Where capital is not easily available from household resources, credit is an alternative.

Issues surrounding credit use or non-use are quite complex however. Using credit impacts production on one hand, while the level of farm
activities associated with production practices influences the use of credit. Further, credit can be obtained from informal lenders in addition to traditional sources, and terms and conditions of repayment may vary. All these add to the complexity of the situation. Consequently, the response of farm owners to access credit or not can be considered a behavioral issue, and is likely to be influenced by the characteristics of the decision-maker, available resources, market conditions, labor availability, and other factors in the immediate farming environment. An understanding of the circumstances that encourage credit use, as well as those that do not encourage its use, is important as policies and plans are developed.

**Literature Review**

Credit use determinants have been investigated mainly in developing areas primarily because of the vast numbers of small, limited-resource farmers and the importance of agriculture to these families and economies.

Hefferman and Pollard (1983) found that education, farm revenue, experience, on-farm investment, extension, and labor differentiated borrowers from non-borrowers in small holder farm systems in Jamaica. Mkandawire (1989) found that in Malawi "fear of getting credit" was a significant deterrent to farmers' accessing credit. Odoemenem (1991) found that in Nigeria, age, acreage cultivated, farmers' goals, labor used, and land owned were positively related to the decision to use credit, while non-farm income and percent inherited land negatively influenced farmers' decisions. Roth et al. (1994) indicated that land tenure was an important variable in accessing credit in Somalia. Among Philippine small farmers, farm size and cost of borrowing positively influenced decisions while high levels of interest rate characterized non-use (Cardenas, 1994). Kashuliza and Kydd (1996) determined that awareness of credit facilities, lack of experience in credit use, and gender of the recipient constrained credit use among Tanzanian small holders.

Because of its potential to improve productivity and farm performance, it is important to understand the factors associated with limited-resource farmers' decisions to access credit or not. Moreover, an examination of the problem from the perspective of contrasts and commonalities among farm systems with respect to their differing credit responses can bring further insight to these issues. The set of characteristics that distinguish credit users from non-users is useful to planners and policy makers as they attempt to shape future policies and restructure institutions to encourage greater participation in credit markets. Formal credit institutions can also use this information to enable them to target potential customers, as well as identify possible defaulters.

Knowledge of the variables associated with positive decisions is the base for programs to encourage non-users to enter credit markets, if it would be to their benefit to do so. Also, the profiles of different user groups present an opportunity to compare and contrast decisions, to highlight constraints and limitations to non-use, and can be used to predict the behavioral response of clients with respect to credit use. This study addresses these issues.

**Objectives**

The objectives of this study were to:

1. Determine the extent, nature, and purpose of credit use among limited-resource farm systems;
2. Identify and describe the most important variables that differentiate groups stratified *a priori* by their credit use decision;
3. Profile differentiated groups to highlight their contrasts and commonalities.

**Methods**

**Sampling**

Crop-based farm systems of sizes 1 ha. or less, that offered for sale at least 25% of their crops, were the focus of the study. These were regarded as commercial-oriented, and using Koppel's (1985) classification, regarded as limited-resource systems. These are the majority of farms in Trinidad (CSO, 1982).

Because of constraints of time and budget,
stratified random sampling was done in two stages to select the sample from a population estimated at 20,000 (Food Crop Bulletin, 1996). Seventy-five "pockets", where 50 or more farms were concentrated were demarcated over the country and 9 chosen by simple random sampling. Within each "pocket", 20 farms were chosen, again by simple random sampling, to select a final sample of 180 farms for survey. Data were collected using a structured interview schedule over a 3-month period in 1996.

Variables
A wide choice of variables was investigated. Variables were assembled under the following headings:

1. Farm performance: Net Cash Income.
3. Psychological: Goals, Aspirations, and Attitudes of operators.
4. Farm-Related: Time spent farming, Land use intensity, Topography, Spacing practiced, and Farm risk-bearing ability.

Credit use was measured dichotomously and scored (Yes=1; No=0).

Analysis
Simple univariate as well as Canonical Variate Analysis (CVA) were used. CVA is useful to explore and describe which variables are most important for discriminating among groups, to develop profiles, and to test differences among groups.

Results
Extent, Nature and Purpose of Credit
Farmers' accessed credit from both informal and formal lending sources (Table 1). Some 23.3% of farmers sampled took some form of credit to finance farming operations. Of those who took credit, the majority (66.6%) obtained it from agroshops in the form of inputs to cultivate their crops. The credit was usually repaid promptly at the end of the crop season without interest. Only seven farmers reported borrowing money from banks or credit unions.

The value of supplies bought on credit from the agroshop ranged from TT$60 to TT$10,000 ($1 US = $TT 6.30 approximately, in 1996). The majority (91%) of farmers bought supplies up to a maximum loan value of $3,000; a large percentage (62.5%) bought supplies valued at $1,000 or less. The amount of money borrowed from lending agencies ranged from $400 to $80,000; most, however, borrowed between $1,000 and $10,000. Money borrowed was used mainly to prepare land, finance labor, purchase inputs and repair equipment.

Differentiating Variables
CVA results (Table 2) show that credit users can be differentiated from non-users on the basis of the following eleven variables:

Net Cash Income.

Human capital: Farming experience, and education.

Psychological: Attitude towards risk, Commitment to agriculture, attitudes labeled "adventurism," and "fear of the future."

Resource base: Capital base value, entrepreneurial ability, and managerial ability.

Decision making: Record keeping.

The discriminant function derived was moderately successful in distinguishing between the two groups (Canonical correlation = .592; Wilks Lambda = .644), and explained 35% of the variation between credit use and non-use (Table 2).
Table 1

Frequency Distribution of Number of Respondents Taking Credit and Source of Credit (N=180)

<table>
<thead>
<tr>
<th>Whether Obtained Credit</th>
<th>Credit Source</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Agroshop</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friend</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial bank</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agricultural bank</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit union</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>42</strong></td>
<td><strong>23.3%</strong></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>138</td>
<td><strong>76.7%</strong></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>180</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The group centroids are also presented in Table 2. The null hypothesis that "in the population from which the sample was drawn, there is no difference between the group means on the discriminant scores" is rejected based on Wilks Lambda (.644) and its associated statistics (Chi Square =75.7; df=11; and p<.001). Credit use groups are significantly different from non-credit use groups.

Group Profiles

The standardized discriminant function coefficients detail that credit users are characterized generally by greater entrepreneurial abilities, higher net cash income, a greater spirit of adventurism, a more positive attitude towards risk, less farming experience, positive record keeping practices and to a minor extent higher education.

On the other hand, non-credit users are distinguishable by their higher commitment to agriculture, higher capital base values, lower managerial ability and a greater sense of fearfulness of the future.

Accuracy of The Procedures

The discriminating variables correctly classified 80.6% of the cases (Table 3). The majority (79.7%) of the non-credit users and 83.3% of the credit users were predicted correctly by the discriminant function into their respective groups.

Based on knowledge of the discriminating variables, it is possible to predict with 80.6% accuracy whether a farm household would use credit or not.
Table 2

Results of CVA of Farm System Variables by Credit Use

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Discriminant Function Coefficients</th>
<th>Wilks Lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial ability</td>
<td>.747</td>
<td>.878</td>
</tr>
<tr>
<td>Net cash income</td>
<td>.658</td>
<td>.791</td>
</tr>
<tr>
<td>Commitment to agriculture</td>
<td>-.493</td>
<td>-.756</td>
</tr>
<tr>
<td>Capital base value</td>
<td>-.424</td>
<td>-.699</td>
</tr>
<tr>
<td>Adventurism attitude</td>
<td>.402</td>
<td>.834</td>
</tr>
<tr>
<td>Attitude to risk</td>
<td>.377</td>
<td>.721</td>
</tr>
<tr>
<td>Farming experience</td>
<td>.370</td>
<td>-.686</td>
</tr>
<tr>
<td>Record keeping</td>
<td>.342</td>
<td>.669</td>
</tr>
<tr>
<td>Managerial ability</td>
<td>-.321</td>
<td>.659</td>
</tr>
<tr>
<td>Fear of the future attitude</td>
<td>-.206</td>
<td>-.651</td>
</tr>
<tr>
<td>Education</td>
<td>.180</td>
<td>.644</td>
</tr>
</tbody>
</table>

Groups

<table>
<thead>
<tr>
<th>Centroids</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non credit use</td>
</tr>
<tr>
<td>2. Credit use</td>
</tr>
</tbody>
</table>

FUNCTION STATISTICS

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Wilks Lambda</th>
<th>Chi. Sq.</th>
<th>df.</th>
<th>Probability</th>
<th>%Variance Explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>.551</td>
<td>.592</td>
<td>.644</td>
<td>75.7</td>
<td>11</td>
<td>&lt;.001</td>
<td>35.0%</td>
</tr>
</tbody>
</table>

Table 3

Results of Classification Analysis - Credit Use Groups

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Non credit users</td>
<td>138</td>
<td>110 28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>79.7% 20.3%</td>
</tr>
<tr>
<td>2. Credit users</td>
<td>42</td>
<td>7   35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.7% 83.3%</td>
</tr>
</tbody>
</table>

Percent of "Grouped Cases" Correctly Classified : 80.6%
Conclusion

Credit use by limited-resource farmers is low, and mainly accessed from informal sources. Farm-related, decision-making and most human capital variables did not differentiate credit users from non-credit users. Data show that abilities, resources, and attitudes are key considerations in credit use decisions. Action to encourage credit use lies in the domain of these variables. The variables associated with credit use are not unexpected. Credit users will have a more positive attitude to risk and an entrepreneurial, adventurous spirit. They are more likely to have more education and to keep records. Fewer years in farming may probably be associated with a younger, more enterprising class of farmer who may appreciate the need for some sort of credit if farming is to be successful. That farming is successful is borne out by the higher net cash incomes associated with using credit. Surprisingly, higher technology use was not a differentiating variable associated with credit use. This underscores the complex relationship between credit use and technology use.

Farmers who have a long term commitment to agriculture may not be inclined, as opposed to those who have shorter term interests and a more entrepreneurial spirit, to utilize credit facilities. A relatively sound capital base may not necessitate the need to borrow. In addition, a lower ability to manage resources may work against any desire to seek credit. Fear as well as a dismal outlook on farming will act as serious de-motivators to innovativeness and credit use.

There is a need for policy makers to make credit more accessible to limited-resource farmers. Extension also has a key role through education to improve farmers' managerial and technical abilities, as well as to foster more positive attitudes toward credit in their clients. Institutions have a role in making all activities related to credit farmer-friendly to allay farmers' fears and anxieties.

In the changing regional and international marketing scenes, competitiveness comes to the fore. Domestic farmers are constantly striving to compete against cheaper imported products and at the same time to improve exports to earn foreign exchange. In Trinidad, unlike other developing countries in the region, credit is available for farmers from several institutions. That farmers use credit at low levels highlights the need for a concerted effort among all actors to re-evaluate their approaches and strategies to support those farmers who would like to increase their competitiveness.

References


Commentary

Agricultural and Extension Education in Albania

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Abstract

Albania was the last Communist country in eastern Europe to reshape its political structure and was dubbed “the last domino.” This commentary briefly describes the current situation in Albania with a focus on the severe agricultural development constraints that are beyond the scope of agricultural policies. Political, social, and economic constraints have repressed rural and agricultural development to a subsistent status and it has yet to reach its fullest potential. The contents of this commentary are based upon first-hand information acquired by the authors in Albania during May, 1998. For Albania to become economically strong, it must first develop its agriculture. To develop its agriculture, it must have a strong agricultural extension system and effective agricultural schools. To have a strong agricultural extension system, there must be available well trained and highly qualified cadres of extension officers and agriculture teachers.

Introduction

As we walked across the campus of the Agricultural University of Tirana in early May, 1998, I asked “... who are all these people living here.” Our Extension Education host, Professor Pirro Veizi replied, “They are refugees from Kosovo.” More than 1000 refugees were living in six four-story dormitories with no running water or electricity because they were destroyed by fire during the anti-government riots in 1997. At the port town of Dunes, another crumbling agricultural college built by Americans in 1926, housed another 500 refugees, living in partitioned classrooms lined with beds and the few personal belongings they could carry. These were only two of dozens of places where nearly 300,000 ethnic Albanians from the Province of Kosovo, Yugoslavia were being housed across this impoverished nation of Albania. The comprehension of ethnic cleansing, murders, torture, and horrible reports of mass killings became undeniably real and the reports seen on television, read in newspapers, and magazines were no longer quasi-abstract images of events far away from secure living rooms in homes across United States.

Geography

The Republic of Albania, an extremely poor country by European standards, is located in southeastern Europe nested between the shores of the Adriatic and Ionian Seas and the borders of Greece, Macedonia, Serbia and Montenegro. It obtained its independence from the Ottoman Empire on 28 November 1912 and its capital is Tirana. Since 1990, the Albanian people have experienced substantial political and social upheavals following the demise of communism and the shift to a market economy. According to the 1996 census, Albania, about the size of Maryland, has an estimated population of 2,250,000 people.

Agriculture

Fifty-five per cent (55%) of Albania’s gross domestic product is derived from the agricultural sector on 500,000+ privatized farms averaging 1.5 hectares in size. Most agricultural production is at the subsistence level and only a small number are commercial farms. Because of varying altitudes, there are a wide range of micro-climates that are suitable to grow both temperate and tropical agricultural commodities.
Expanding Extension

The Government of Albania (GoA) has confirmed that its agricultural sector is important in its national economy (MoAF, 1998). Given the profound changes that have taken place in Albania’s agricultural sector and the economic and political circumstances the country has experienced, government officials have established agricultural development as a high priority objective. The GoA intends to strengthen and expand its nationwide public agricultural extension system to disseminate technical, management and economic information to farmers. To achieve this objective, several cadres of competent extension officers strategically placed throughout administrative districts are necessary. Currently extension education in Albania is in its infancy with about 500 inexperienced, mostly male (90%) extension officers who serve 36 administrative districts. The primary extension teaching method used is lecturing to small groups of subsistence farmers.

Situation

The agricultural development is presently severely constrained by political, social, and economic factors that are beyond the scope of agricultural policies. Because of these constraints, rural and agricultural development has yet to reach its fullest potential. Because of security risks, travel to the countryside was severely limited. A series of meetings were conducted with officials from both The Agricultural University of Tirana and Ministry of Agriculture and Food in Tirana to identify and verify these noted external, internal, agricultural extension, and farmer constraints.

External Constraints:

External constraints include a worsening macro-economic framework after the collapse of notorious investment “pyramid schemes” in 1997 that resulted in inflation and depreciation of the local currency; economic regression of industrial, construction and transportation sectors; high competition with other European countries; low efficiency of banking systems; break-up of former eastern Socialist block that resulted in the Loss of major international markets for Albanian agricultural products; deficiencies in the system of roads; difficulties resulting from remnants of the “old” communistic mentality and adjustment to a new economic environment; migration of refugees into Albania from Kosovo; and other sectors of Albanian economy that presently have a low potential for employment opportunities.

Internal Constraints:

Government officials reported these internal constraints that were affecting Albania’s agricultural development: uncertainty of land ownership; fragmented and very small family farms; uncompleted rehabilitation of inefficient systems of production and transportation; lack of market channels; lack of credit; inability to prevent and control plant and animal diseases; underdeveloped agro-processing industry; and an inefficient research, extension and information system.

Agricultural Extension Constraints:

University officials reported that non-formal educational activities of rural agricultural extension officers were constrained because they had little to no access to MoAF research results; lacked experience, extension education, and training; had long distances to travel between villages and farmers without transportation; there were too many farmers per extension officer; extension officers had no operating budget; many farmers did not want to produce crops or raise livestock; and “pilot” farmers for various reasons wouldn’t carry out extension officers recommendations.

Farmer Constraints:

Farmers, too had constraints that reduced their efficiency, production levels, and income. They were reluctant to take the “risk” of implementing new practices, technologies or skills; had small scattered plots of land; showed little interest in extension programs because they lacked confidence in the extension officers; possessed insufficient capital for inputs and little opportunity to acquire bank loans; had little experience in management and decision making;
many farmers sold their livestock in 1997 and lost their money by investing in “pyramid schemes;” and farmers no longer received services from research institutes (i.e. seedlings, pesticides).

**Rural Extension Training Program**

In view of all the above constraints within a politically tense society, a ten-day Rural Extension Training Program was offered in May, 1998 to 14 high ranking extension officers and agriculture teachers to support the development of an effective and efficient agricultural extension system in Albania. The Program was organized, conducted and sponsored by bilateral Albanian-Dutch National Extension Project in cooperation with Department of Education and Extension in Agriculture at the Agricultural University of Tirana, Agricultural Cooperative Development International/Volunteers of Overseas Cooperative Assistance (ACDIIVOCA), and United States Agency for International Development.

**Program Objectives**

“Learning by Doing” was the leading learning principle for the Rural Extension Training Program and participants had many opportunities to use their newly learned information. The seven objectives for the “Rural Extension Training” included: 1) familiarizing the participants with concepts of agricultural extension; 2) understanding the role of extension in rural development; 3) clarifying roles of agricultural extension officers; 4) studying concepts of agricultural knowledge information systems; 5) learning to use participatory methods for planning and implementing extension programs; 6) how to determine farmer needs; (7) preparing an action plan; and (8) evaluating extension programs (Lambertus, 1998).

**Results**

At the end of the Rural Extension Training Program, a five-point Likert-type scale having 17 items was used to evaluate the participants perceived effectiveness of the teaching.

Collective participant (14) scores consistently indicated a strong agreement that the teaching caused them to understand role of extension officers, how to determine farmer needs, how to develop, implement, and evaluate an extension plan. However, because of political insecurity, two months after offering this perceived successful program, all American and Dutch officials were evacuated. Then the NATO bombing of Yugoslavia followed. Because of these factors, at this writing, no follow-up has been carried out to determine the impact this extension training program had on Albania’s 500 agricultural extension officers.

**Summary**

Albania was the last Communist country in eastern Europe to reshape its political structure and was dubbed “the last domino.” Even though the Albanian people are still struggling with the throes of a change process, the resilience of brave and patriotic Albanian people is Albania’s hope for a dignified emergence into the European economy. Linda White (1995, p. vii) best describes the nature of Albanian people by saying “The people have nothing, but share everything with their guests.”

Despite the current constraints within the agricultural sector, there is much that can still be accomplished. The central core of thinking throughout the Rural Extension Training Program emphasized using low cost approaches to delivering knowledge and information to farmers.

For Albania to become economically strong, it must first develop its agriculture. To develop its agriculture, it must have a strong agricultural extension system and effective agricultural schools. To have a strong agricultural extension system and effective agricultural schools, there must be available well trained and highly qualified cadres of extension officers and agriculture teachers. For it is the responsibilities of extension officers to provide knowledge and information to farmers and agriculture teachers to prepare students to be future farmers of Albania.

The future of Albania’s agriculture sector is now...
in the hands of its agricultural extension officers and agricultural teachers. The strength of Albanian agriculture now relies upon how well extension officers and teachers do their jobs.

References


Commentary

A Case for Globalizing Undergraduate Education
and Student Learning at Colleges of Agriculture

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Abstract

This is a commentary on the rationale for globalizing programs in research and graduate education at agricultural universities. The case of U.S. land-grant universities is used to present the argument that globalizing research and graduate education has numerous advantages. However, the concepts may apply to agricultural universities in many countries. The authors make the case that the advantages for globalizing research and graduate education greatly outweigh any disadvantages and that globalization provides one strategy towards the continued improvement of research and graduate education at agricultural universities.

Introduction

In a previous commentary, published in this journal by the authors, it was argued that international components are essential, integral, and central to the education, research, and outreach missions of agricultural universities (Acker and Scanes, 1998). The present commentary discusses in some detail the raison d'être for globalizing research and graduate education in agriculture and focuses on the case of U.S. agricultural universities. The core thesis is that by providing an international component, the quality of research and graduate education is markedly improved and frequently made more relevant. Cautionary notes are also included. As with so many approaches, globalization is important but not a panacea. It is a reasonable approach when used as an adjunct to a series of strategies to achieve quality and relevance.

As late as the 1980's, thoughtful commentaries on U.S. land-grant universities, their agricultural colleges and their research, teaching, and extension programs could be written where the global perspective was completely absent (e.g. McDowell, 1988; Beattie, 1983; Ladd, 1991). This may reflect other issues being viewed as more critical or that international aspects of programs were so intuitively obvious and hence, not worthy of mention or that the question had not arisen.

More recently, there have been changes in attitude coupled with more frequent discussion on the subject of globalization. For example, the implications of international issues was ranked as one of the most important challenges for the research program for U.S. agricultural universities in a 1992 survey of land-grant university administrators (Meyers, 1992). The general category of “international issues” was ranked seventh on a list of top challenges as perceived by administrators.

Globalizing Research and Science

The importance of both an international research experience and on-going scientific research collaborations has been recognized as vital to a scientist’s development. This view is becoming increasingly prevalent throughout both the developed and developing worlds. Such experiences have particular relevance to quality research in agricultural and environmental sciences which benefit from testing across a wide range of ecological or social conditions.
An international research experience may include being part of one of the best "laboratories" or research groups in the world. For example, in the first third of this century, many scientists, particularly chemists, spent part of their training in Germany, the locale of the finest scholars in the field. The value to the host research group is the ability to have some of the best minds in the world together focusing on a specific research problem.

Table 1
Examples of sources of support for international research cooperation in agriculture

- Bilateral Agricultural Research and Development (BARD) (For example, U.S. and Israel)
- National Science Foundation Grants
- Fogarty Fellowships
- Ford Fellowships
- Fulbright Fellowships
- North Atlantic Treaty Organization Grants
- Rockefeller Fellowships
- United States Department of Agriculture Research Exchange Program
- Wellcome Fellowships
- Multinational research programs under the auspices of the European Union

The value of international scientific cooperation in developing mutual understanding is almost axiomatic. David Sammons (1999) captures a key element of international agricultural research when he states, "knowledge knows no geographic boundaries." There are numerous, although arguably still insufficient, programs to support this (see Table 1 for examples of sources). The advantages to the host and recipient of this symbiosis are numerous, including the strong research results from the cumulative experimental efforts, the ability to access different equipment, germplasm, environments, and sources of funding, the strength derived from combining very different perspectives in a research group, and the commitment of scientists to key societal problems such as food security and environmental sustainability.

No discussion of international agriculture research and graduate education would be complete without a treatment of the role of national funding for agricultural research and its implications for food security. At a national policy level in most countries, the rationale for funding research in support of production agriculture rests on both the moral imperative of food security (local or global) and the pragmatism of competitiveness of a nation's agricultural sector. According to Tweeten (1998), global agricultural productivity is increasing in a linear manner with the rate of increase declining over time. For example, cereals had yield increases in 1961 of 3.2 percent; in 1971, it was 2.4 percent and by 1996, it had declined to 1.5 percent (Tweeten, 1998 a,b). In developing countries, grain production (per capita) has been stagnant since 1980 (IFPRI, 1994). Increases in agricultural productivity (excluding changes/increases in land area being employed) are not keeping pace with human population growth. The picture of food security is much more complex when food distribution, access, and quality are considered.

This situation is accentuated as economic growth and personal spending power are accompanied by shifts in the types of food consumed. It is calculated that global agricultural production will not meet the demands for food for the first 30 to 40 years of the 21st century (Tweeten, 1998 a). The analysis assumed that agricultural research in both the public and private sectors will continue at the present rate.

In the U.S. context, the drive to keep U.S. agriculture competition in a global market provides a strong rationale for domestic agricultural research funding. Exports represent
30 percent of the U.S. agricultural economy. Some examples of commodities for which exports represent a key marketing outlet include almonds (exports = 70 percent); wheat (exports = 54 percent); cotton (exports = 45 percent); and soybeans (exports = 30 percent) (Dwyer, 1998). One of the key components of globalized trade is that increasing global trade and economic development is best served when regions/countries compete based on their competitive advantage. Research is a key enabling factor in this system. It is argued that investing public and private funds in agricultural research will be critical to a nation’s competitive trade position, as well as people's quality of life, health, and even survival throughout the world.

However, public funding of agricultural research has not been the highest priority. In the cases of the U.S., Canada, and Europe, the rate of growth of funding for agricultural research has declined. For instance, growth in constant dollars in public funding for agriculture research in the U.S. was 2.7 percent for the decade of the 1970's, 2.0 percent for the 1980's, and less than 1.0 percent for the 1990's (based on Huffman and Just, 1998).

Further exacerbating this situation of limited funding at domestic levels is the recent and precipitous decline in support of international agricultural research funding at the 16 International Agricultural Research Centers of the Consultative Group on International Agricultural Research (Table 2).

These International Agricultural Research Centers are funded by donor countries and agencies including the U.S. through the United States Agency for International Development (USAID) (12.4 percent of funding in 1995), Japan (11.4 percent of funding), and Europe (34.4 percent of funding); international agencies like World Bank (15.2 percent of funding); and foundations (2.0 percent of funding) (Pardey, et al., 1996). There is convincing evidence that the International Agricultural Research Centers have been very successful with IRRI and CIMMYT playing a pivotal role in the green revolution. Moreover, Pardey and colleagues (1996) provided a strong case that a major component in the increases in wheat and rice yields in the United States are based on germplasm from CIMMYT and IRRI, and that the cost benefit analysis of United States contributions versus benefits to U.S. producers and consumers are in excess of 1:15.

It is intuitively obvious that strong links between the agricultural universities and the International Agricultural Research Centers would be mutually beneficial. There is a history of linkages particularly at the scientist-to-scientist level and through graduate students spending time at centers. There have been efforts recently to enhance interactions. However, it seems to be unlikely that relationships can move to a new level until there are sources of funds for joint research proposals, reciprocal visits of scientists to each other's laboratory or research facility, and for effective sharing of specialized research equipment.

Role of Faculty in Globalizing Agricultural Research

The faculty member/scientist is of paramount importance to the success of internationally relevant agricultural research. Beattie (1983) reminded us that universities are built on the creativity, imagination, and intellectual horsepower of individual faculty members. Collaborative research with scientists on
Table 2

International Agricultural Research Centers

- CIAT - Centro Internacional de Agricultura Tropical, Colombia
- CIFOR - Center for International Forestry Research, Indonesia
- CIMMYT - Centro Internacional de Mejoramiento de Maiz y Trigo, Mexico
- CIP - Centro Internacional de la Papa, Peru
- ICARDA - International Center for Agricultural Research in the Dry Areas, Syria
- ICLARM - International Center for Living Aquatic Resources Management, Philippines
- ICRAF - International Centre for Research in Agroforestry, Kenya
- ICRISAT - International Crops Research Institute for the Semi-Arid Tropics, India
- IFPRI - International Food Policy Research Institute, USA
- IWMI - International Water Management Institute, Sri Lanka
- IITA - International Institute of Tropical Agriculture, Nigeria
- ILRI - International Livestock Research Institute, Kenya
- IPGRI - International Plant Genetic Resources Institute, Italy
- IRRI - International Rice Research Institute, Philippines
- ISNAR - International Service for National Agricultural Research, The Netherlands
- WARDA - West Africa Rice Development Association, Ivory Coast

Campus, in other universities, or at national and international research institutions together with the private sector provides opportunities to move science forward in many ways. Less tangible advantages of international collaboration include having a professional network throughout the world and a deeper understanding of how the collaborator is contributing to global food security, sustainable development, environmental protection and enhancement.

It should be noted that, in addition to inputs, there are transaction costs in international agricultural research. These may include travel for proposal development, for data collection, and for presentation of results at international conferences. They may include time required to translate documents and time needed to fully understand the cultural context in which the research is undertaken. With greater emphasis on accountability, there are increasing costs associated with impact measurement and reporting. For national and international collaboration in research to be successful, transaction costs should be minimized and/or impacts and outcomes maximized. Communication over the internet combined with occasional face-to-face meetings can help reduce the costs associated with planning of research protocols and sharing of data. Faculty are central to the success of any effort to globalize agricultural research through their role as initiator, communicator, conceptualizer, and promoter.

International and Domestic Graduate Students

A clear and compelling case exists for the presence of international graduate students in graduate programs in United States agricultural universities. The case will likely have equal merit at agricultural universities anywhere in the world. International students bring different perspectives, and hence, provide a diversity of viewpoints and familiarity with different environments for faculty and fellow students alike. International students studying in colleges of agriculture have generally been rigorously screened, are well-educated, talented, and highly motivated. They bring these characteristics to the research program of the host institution. Therefore, a graduate program with some international students is almost invariably better than one with no international students.

Globalizing graduate education goes beyond having international students in graduate programs at U.S. agricultural universities. In view of the global nature of science and agriculture, innovative approaches need to be...
developed or implemented for broadly internationalized graduate education. These mechanisms include:

- The inclusion of faculty of universities outside of the United States on the thesis committees for graduate students;
- Joint graduate or "sandwich" degrees with foreign universities in which students take coursework at their home university, conduct their research at an international partner university, and return to their home university to complete their degree;
- Globalization of graduate curricula, especially coursework that provides opportunities for exploring the application of their discipline in another setting;
- Team investigations utilizing multi-national teams of graduate students; and,
- Graduate students spending sojourns in laboratory or conducting field research at a foreign university or international agricultural research center.

These and other innovative approaches improve the quality of graduate education in the United States per se as well as develop long-term partnerships with universities or research centers around the world.

**Conclusion**

Globalization of research and graduate education in agriculture is a key driver of quality improvement whether the context is the U.S. land-grant system or another agricultural university system. Engagement of multi-national teams of scientists and graduate students brings new perspectives and greater strength to research efforts.

Departments of agricultural and extension education can benefit from increased efforts to globalize both the coursework offered as well as the research undertaken by faculty and students. The extension leaders and teachers prepared in these departments will need to assist their students in understanding a globally interdependent agricultural system.

Departments of agricultural and extension education must be responsible for educating future agricultural and extension education leaders to understand these forces. However, agricultural research and graduate education in general is suffering from a lack of international cooperation. The authors propose that to achieve greater international collaboration in agricultural research and graduate education requires a borderless system. Readers interested in examining what such systems might look like are advised to consult the Global Consortium of Higher Education and Research for Agriculture (http://www.gchera.iastate.edu) and the Global Forum on Agricultural Research (http://www.egfar.org).

Investments to date in cereals research have yielded significant returns on investment that benefit developing and developed countries. There needs to be a broader recognition of the importance of globalizing agricultural research and a commitment to increasing exchanges and funding related to research of this nature. International graduate students and exchanges of students and faculty members are critical mechanisms to globalizing agricultural research.

**Literature Cited**


Meyers, J.H. 1992. Rethinking the outlook of colleges whose roots have been in agriculture. University of California-Davis.


Needs assessment for rural development projects just got easier. After several JIAEE articles, a number of scholarly paper presentations and considerable discussion about needs assessment among AIAEE members, now there is a workbook. The *Participatory Rural Appraisal and Planning Workbook* will guide those who wish to complete a needs assessment which is thorough, effective in the use of limited time and other resources, and involves rural residents who are supposed to benefit from a development project.

Previously a handbook on participatory needs assessment, *Participatory Rural Appraisal Handbook: Conducting PRAs In Kenya* (1990), was published by the Center for International Development and Environment, World Resources Institute, in collaboration with the National Environment Secretariat of the Government of Kenya, Clark University (Worcester, MA), and Egerton University (Njoro, Kenya). PRA was based on an earlier methodology called “rapid rural appraisal” (RRA) developed by Gordon Conway, International Institute for Environment and Development, and Robert Chambers, University of Sussex, England. That handbook has been out of print for several years.

The current workbook takes the previous work on RRA and PRA further, refining the methodology and providing additional specific instruments to make the needs assessment process more practical. The workbook also gives numerous examples from assessments conducted in Latin America. It adds an emphasis on the planning (hence PRAP) that should follow the needs assessment. It also introduces discussion of the gender perspective which has been often ignored.

According to the workbook, the PRAP process has three steps: 1) site selection, 2) preliminary visit and 3) application of PRAP. This is a simplification of the 1990 handbook process which described eight steps: 1) site selection, 2) preliminary visits by the PRA team, 3) data collection, 4) data synthesis and analysis, 5) ranking problems, 6) ranking opportunities, 7) adopting a village resource management plan, and 8) implementation of the plan. PRA also emphasized a team of outside officials, technical specialists and local villagers. The current workbook speaks only of the facilitators and community members.

Data collection with PRA, as well as PRAP, consists of a variety of technical and social assessments including mapping, description of social organization, depiction of institutional relationships, development of historical timelines and seasonal trends. PRA puts more emphasis on technical measures (soil type, land use, rainfall records) while PRAP focuses on the social aspects. PRAP adds a number of instruments to collect data on family livelihood, income, expenses, and well-being. It adds a “gender disaggregated activity calendar” to quantify the use of family members’ time and to point out that all “productive” work is not done just by males, that all reproductive work is not done just by females, and that community or collective work is necessary and should be counted.
The PRAP workbook introduces techniques to analyze and prioritize problems that are identified through data analysis. It does not, however, describe nominal group process, a structured group technique which this reviewer has used successfully in Latin America to achieve a truly participatory needs assessment. Still the workbook does go well beyond PRA’s very limited advice for prioritizing problems.

Project planning is enhanced in the PRAP workbook by the use of a program planning matrix. By constructing this matrix participants answer questions about project objectives, justification, results, indicators of success, means of verification, activities, timetable, inputs, budget and persons responsible. This information, written in detail, will then guide project implementation. The last section of the workbook (35 pages) provides case studies of the use of different needs assessment techniques during actual PRAP sessions in Latin America.

The result is a workbook which provides a wealth of resources for grassroots project development. This result is not surprising given the experience of the lead author and the strong reputation of the International Institute of Rural Reconstruction. Daniel Selener is the author of Farmer to Farmer Extension: Lessons From the Field (1997), and Documenting, Evaluating and Learning From Our Development Projects (1996), reviewed in recent issues of JIAEE.

Some individuals might criticize the workbook for describing too many techniques in such detail. They might argue that needs assessment, as described in the workbook, is almost as expensive, at least in terms of time, as the statistical research reports which rapid rural appraisals were developed to replace. This reviewer is concerned that much of the technical data collection by team members with technical expertise has been discarded. What remains is a much more in-depth collection of sociological data. Given the experience on which PRAP and this workbook are based, however, those concerns may not be important.

This workbook should be useful to students of community development, to administrators and specialists in governmental agencies and NGOs that work with community development as well as to village-level workers. To order, send a check for twenty-five US dollars payable to IIRR. The check should be issued from a bank located in the USA and sent to IIRR, Apartado Postal 17-08-8494, Quito, Ecuador.

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The International Farming Systems Association (IFSA) will hold the 16th symposium in Santiago, Chile in 2000. Simultaneously, the 4th Latin American Farming Systems Research and Extension (IESA AL - IV) symposium also will take place.

The main theme of these symposia is the interaction (conflicts as well as opportunities) between global and local processes, which are shaping the rural regions of the world and their relation with the impact on small farmers' production systems and rural communities, and on their technical, social, economic and cultural behavior.

Within the main framework, the meeting will be organized around the following concrete societal issues, looking at them from different angles representing the view and interest of governments, farmers, researchers, rural agents and rural communities.

* Rural poverty and food security.

This topic includes analyses, case studies and specific aspects that help to understand and alleviate rural poverty among small agricultural producers and rural communities. Food security comprises incentives and conditions allowing small producers and rural communities to make substantial contributions to ensure food availability.

* Small farming systems, markets and competitiveness.

All relevant issues aimed at helping small rural producers insert themselves successfully into the national and international economies, considering all levels, organizational options and circumstances that may create favorable conditions to take advantage of their economic and social environment.

* Environmental sustainability.

This topic comprises analyses of practices, technology development, social and economic incentives, institutions, community organizations and cultural factors that interact to influence the use and management of the natural resource base by small producers and rural actors.

* Institutional development.

Issues related to decentralization, democratization, local governments, stakeholder participation, privatization of public supported services, civil organizations and regional development that affect small rural producers constitute the main core of this topic.

Within each topic, papers dealing with technology, methodology, concepts, institutions, and policy, are welcome. Gender and empowerment are issues which cut across the four topics.

**Organization**

A limited number of about 140 papers and 80 posters will be accepted for presentation at the symposia. On the basis of their relevance to an
international audience, some of these papers will be selected for oral presentation by the main author at one of the simultaneous sessions. Other papers will be summarized and, together with other related summaries, will be presented and discussed at one of the sessions by a Facilitator. All papers will be included in the Proceedings.

The symposia will be organized to allow ample time for dialogue among participants, both in the formal sessions and during the informal intervals.

A limited number of rooms for 2-hour Free Sessions are also available. Individuals and organizations wanting to make use of that time and facilities to organize panels, training sessions, roundtables, Tool Bazaars, etc., should also apply. Materials and/or papers presented at these Free Sessions will not be included in the Proceedings. The Organizing Committee may provide limited logistical support to condition the room to the needs of each Special Session, but the preparation and implementation of the meeting will be the responsibility of the organizers.

Submission of papers, posters and special session applications

The organizing committee will review only full papers and final posters, which adjust to the format defined below.

Authors who are in doubt about whether their papers or posters are relevant to the topics of these symposia, can send in a brief abstract to obtain the opinion of the organizing committee.

The organizing committee will review only final applications for Special Sessions.

Deadlines

Final deadlines for submission of papers, posters and Special Session applications are the following:

Abstracts (optional) are due on 29 February 2000.

Full paper, posters and Special Session applications are due on 30 March, 2000.

Peer review results announced by 30 June 2000 Revised versions of papers are due on 30 August 2000.

Format of Papers

Original and unpublished manuscripts can be submitted in English, Spanish, Portuguese or French in an electronic version (any file which can be read with Word 97 without disturbing the format of text, tables or graphs).

Manuscripts must not exceed 6000 words, including the front page, abstract, tables, graphs, footnotes and bibliography. Papers which have more than 6000 words will not be reviewed.

Please include a title page with the full name, institutional affiliation, postal address, fax and email of all the authors. The title page must explicitly identify which the four main symposia topics is being addressed by the paper; papers which do not comply with this requirement cannot be reviewed since it will not be possible to identify to which reviewers it should be forwarded.

An abstract of no more than 150 words should accompany the manuscript, in a separate page. The author should also identify no more than six key words to be used to index the article. This abstract will be published in the final program to provide information to participants wanting to decide which simultaneous session they should attend.

A 3.5" HD/DD computer disk containing the final version of the paper (once it has been selected and corrections have been introduced, if any) should be sent for further reproduction.

Please title all electronic files with the first initial, middle initial and last name of the first author (e.g., jadoe.doc). If the same person is submitting more than one paper and electronic file, please add a number after the name (e.g., jadoe1.doc, jadoe2.doc)

Papers should follow standard style norms as requested by most international, peer reviewed

Posters

Authors of posters can apply by sending an abstract with a maximum of 600 words. Abstracts longer than that will not be reviewed. The abstract should review the contents of the poster. It is this text that will be included in the Proceedings of the symposia.

In addition to the abstract, please include a title page with the full name, institutional affiliation, postal address, fax and email of all the authors. The title page must explicitly identified which one the four main symposia topics is being addressed by the poster; posters which do not comply with this requirement cannot be reviewed since it will not be possible to identify to which reviewers it should be forwarded.

Special Sessions

Individuals and organizations who want to organize a 2-hour Special Session, should send a letter to the Organizing Committee with the following information: (a) identification of the organization and the persons responsible for the Special Session, with full names, postal address, fax and email; (b) objectives and expected results of the Special Session; © description of the activities to be conducted during the Special Session; (e) special logistical and equipment requirements; (f) other information which is relevant and that can assist in understanding and assessing the proposal.

All the Special Sessions will be open to all the participants in the symposia, i.e., no private sessions can be organized using these facilities during the course of the symposia.

Official Languages

Spanish and English will be the official languages of the symposia. Papers in Portuguese and French will be accepted, but they must include a translation of the abstract to English or Spanish. Papers and posters will be included in the Proceedings in the same language that were originally submitted. At the time of printing this Call for Papers, simultaneous translation can only be assured between the two official languages of the symposia.

Field trips

A number of field trips will be organized the previous week and the following days after the symposia.

Registration and Fee

Early registration to both the symposia and field trips is encouraged. Participants registered by July 30 will pay US$200. Registration fees after July 30 will be US$ 300. Field trip details and costs will be announced by June, 2000.

Financial aid

Partial financial aid would be available for a limited number of attendants to the Symposia. Accepted papers by peer reviewers will be considered for partial financial aid to cover room and board during the three days of the meeting, on first request, first serve bases. Awarded participants will be responsible for transportation, inscription and other traveling and participation costs.

Organizing Committee

The 16th IFSA and 4th IESA symposia are organized by an International Organizing Committee:

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Luis Marambio, INDAP, Chile

Vice-Chairman:
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Executive Secretary:
German Escobar, RIMISP

Main Sponsors
Up to the present, the Symposia has two main sponsors: The Agricultural Development Institute of Chile, INDAP, and Texas A&M University.

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The Web Site of the Symposia will be regularly updated to provide new information to authors and participants. If planning to attend and/or submit a paper, poster or Special Session, we encourage you to check this Web Site periodically.
International Workshops on Participatory Development:

Concepts, Tools and Application in PLA and PRA Methods

June 19-24, 2000 or July 3-8, 2000

Ottawa, Canada

Mosaic.net International will be hosting two International Workshops on Participatory Development focusing on Concepts, Tools and Application in PLA and PRA Methods in Ottawa, Canada from June 19-24, 2000 and July 3-8, 2000. These are intensive six day workshops set in the community to maximize learning, group interaction and networking.

Topics include:

- The Origins of Participatory Development, Learning and Application of PRA tools
- Participation and the Project Cycle
- Effective Facilitation Skills
- Building Action Plans
- Team-Building.

Details of the workshops are posted on the World Wide Web at: http://www.mosaic-net-intl.ca or by email at: workshop@mosaic-net-intl.ca.

International Workshop on Participatory Monitoring and Evaluation (PM & E)

July 10-15, 2000

Ottawa, Canada

Mosaic.net International will also be hosting an international workshop specifically on Participatory Monitoring and Evaluation to be held in Ottawa, Canada from July 10-15, 2000. Participatory Monitoring and Evaluation (PM & E) involves a different approach to project monitoring and evaluation by involving local people, project stakeholders, and development agencies deciding together about how to measure results and what actions should follow once this information has been collected and analyzed. This intensive six day experiential workshop is practically focused with daily excursions into the community and a three day community assignment.

Topics covered at the workshop include:

- Origins of PM & E
- Skills and Attributes of a PM & E facilitator
- Learning PM & E Tools
- Designing a Monitoring and Evaluation Framework
- Actions Plan and much more.

A Project Clinic will include projects from participant's workplace and provide a rich environment for feedback. Details of the workshop are posted on the World Wide Web at: http://www.mosaic-net-intl.ca or by email at: workshop@mosaic-net-intl.ca.
Mark these dates on your calendar and don't forget to register early.

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