Journal of International Agricultural and Extension Education

Conference Issue

A publication of the Association for International Agricultural and Extension Education
The *Journal of International Agricultural and Extension Education* is the official peer-reviewed, refereed publication of the Association for International Agricultural and Extension Education. The purpose of the *Journal* 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 must not have been published or be under consideration for publication by another journal.*

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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. For publication in the *Journal*, feature articles must pass the *Journal’s double blind, peer-review process*, which utilizes peer reviewers who evaluate manuscript content and ensure readability. Reviewers are selected usually from the membership of the AIAEE. In the double-blind, peer-review process, all reference to author(s) is removed before the manuscript is sent to reviewers. Feature Articles may be re-submitted for peer-review a total of three times before they are no longer acceptable for publication in the *Journal*.

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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.

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Tools of the Profession articles report specific techniques, materials, books and technologies that can be useful for 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 11 Number 2 Summer 2004**

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From the Editor

Greetings from the *Journal of International Agricultural and Extension Education (JIAEE)* and the Association for International Agricultural and Extension Education (AIAEE).

This summer issue of the *JIAEE* brings a variety of contributions from the 20th Annual Association for International Agricultural and Extension Education Conference, which was held in Dublin, Ireland at the end of May. Before highlighting these contributions, I want to take a bit of space to congratulate the organizers of our annual conference. Ireland is a beautiful land, replete with gracious, friendly inhabitants. Our collective “thanks” to Jim, Dermot, and their many helpful assistants for planning, coordinating, and sponsoring a wonderful conference experience in Dublin. Personally, I found our meeting venue to be a refreshing change from the usual trappings offered through an impersonal hotel. Jim and Dermot, I truly enjoyed visiting your campus and am hopeful that your initiative provides “out-of-the-box” thinking for future AIAEE conferences.

This issue features a variety of articles ranging in locations from Ireland to Uruguay and Lithuania to the United States and Mexico. It is a truly an international affair of scholarship. Our contributors can be proud of their accomplishments and we are all better off for having these articles in our collective research base. Also, don’t forget to read through the 20th Annual Conference research paper abstracts, carousel abstracts, and poster abstracts located in the latter half of this issue. You may learn something new and/or one of those abstracts may provide the spark needed to conduct similar research in your part of the world. Above all else, take some extra time to promote the *JIAEE*. How, you ask? Share the contents of this issue with your colleagues and students. Encourage those same colleagues and students to submit manuscripts for peer-review. Promote the *JIAEE* at your local institution, especially your local library. Tell others to complete the online subscription form today!

Do you realize that we have more than 200 current subscribers to the *JIAEE*? Many of these subscribers were unable to attend the conference in Dublin, but chose to renew and pay for their subscriptions online using our new PayPal feature. Now, there is nothing easier than filling out the subscription form and completing the process, anytime and anywhere, on the planet earth. So get the word out and get your friends, family, and neighbors to subscribe to the *JIAEE* today. You might even want to fill out a “gift” subscription for one of your outstanding students or peers. The *JIAEE* makes a great birthday gift and at only $25/year, there is not a less-expensive scientific resource available!

If you did not have your paper selected as one of the outstanding research conference papers that are contained in this issue, I encourage you to take time to re-write and submit it for review and possible publication in a future issue of the *JIAEE*. Thank you to all *Journal* contributors, reviewers, and board members for assisting in the production of this issue. Enjoy your summer issue and continue doing what you can to promote greater understanding of agricultural and extension education worldwide.

Sincerely,

Gary J. Wingenbach, Editor
*Journal of International Agricultural and Extension Education*
Association for International Agricultural and Extension Education
20th Annual Conference

Dublin, Ireland
May 24-27, 2004

Outstanding Professional Papers

Outstanding Paper Presentation

Development of a Family-Focused Advisory Programme in the Republic of Ireland
Pat Bogue and James Phelan, National University of Ireland

1st Runner-Up Outstanding Paper Presentation

Self Examination of the Regional Advisory Council of the National Agricultural Research Institute of Uruguay
Ernesto Restaino Galup, Michigan State University

2nd Runner-Up Outstanding Paper Presentation

Lithuanian Agriculture Teachers’ Perceptions on Agricultural Production, Economics, Environment, and Social Responsibility Issues
James Connors and Benjamin Swan, The Ohio State University
James Brousseau, Milan High School, Milan, Michigan

3rd Runner-Up Outstanding Paper Presentation (tie)

Barriers and Supports: Finding Their Place in Agricultural Extension
Billye Foster, The University of Arizona
Brenda Seevers, New Mexico State University

Interest of State Extension Service Directors and Administrators Related to International Opportunities
Ed Franklin, Ali Al- Hassan, Jack Elliot, and Jim Knight, The University of Arizona

Outstanding Graduate Student Paper Presentation

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Development of a Family-Focused Advisory Programme in the Republic of Ireland

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Abstract

Advisory services in Ireland have evolved towards a technical focus, away from the farm family and household. However, even though there is less overall involvement of families in the running of farms, decision-making is influenced by more than the farm operator. Teagasc introduced the ‘Opportunities for Farm Families Programme’ in 2001, which recognised that the challenges facing farmers required a ‘whole family’ response. The fundamental objective of the programme is to help farm families generate additional household income and improve quality of life.

The aim of the research outlined in this paper was to determine the views and attitudes of advisers and farm families to the programme. The majority of advisers and participants considered that the programme helped farm families to take a realistic look at their current situation and was useful in terms of identifying ideas to improve their income and quality of life. Families who participated together derived greater benefit than individuals. The key lesson learned from this research was the importance of early evaluation of new advisory approaches. Educational institutions and extension agents need to highlight the importance of an objective assessment of both the deliverers’ (advisers) and target groups’ (participants) views on extension programmes. For assessments during programme delivery to be successful, they must be focused on the development of the programme and not the monitoring of extension agents. The information gathered from assessments should be used to guide the further development of programmes and appropriate training for advisers.

Keywords: Farm families, extension research, advisers, evaluation, education

Acknowledgments: This research was supported through a joint project between the Department of Agribusiness, Extension and Rural Development, National University of Ireland and Teagasc.
**Introduction**

Agricultural extension systems throughout the world play a key role in the development of agriculture; however, they are not without weaknesses. One of the main tasks of a public extension system should be human resource development that can equip medium and small-scale farmers to solve their own problems and respond to new opportunities (Swanson & Samy, 2002). However, the top-down approach to extension has often centered on the extension agent believing that they know what is best and failed to focus sufficiently on the client’s needs, preferences and abilities (Tucker, 2000). This has lead to extension becoming prescriptive. This concept is supported by Van den Ban (1999) who states that farmers may expect a concrete recommendation because they have learned that this is the role of their extension agent. The expectation of a prescriptive solution is a serious problem facing extension agents and farm families as people adjust to change more rapidly when they themselves initiate, identify and solve problems that directly affect their welfare (Cohen & Uphoff, 1980, as cited in Düvel, 1995).

Most developing country extension systems pursue some combination of human resource development and technology transfer programmes (Nagel, 1997). However, many extension systems concentrate their efforts on technology transfer. Swanson and Samy (2002) highlighted that public extension has not been effective in responding to the basic education and technology needs of small-scale farmers. Many farmers have little contact with the advisory service and become increasingly marginalized. In developing countries, the extension service aims to reach the wider farm family (men and women) however, as agriculture develops, the advisory contact focuses on the main operator (predominantly the man). Even though there is now less overall involvement of families in the running of farms in Ireland, decision-making is still influenced in many cases by more than the farm operator. Therefore, there is a need for advisory services to reconnect with other family members.

One of the difficulties for extension is the need to become involved in regulatory responsibilities (Tucker, 2000). In Ireland, the extension service (Teagasc) has not become involved in regulatory activities but has become involved in supporting farm families in the completion of application forms in order to obtain payments under the Common Agricultural Policy (Phelan, 1998). The financial and staffing pressures on Teagasc, combined with the farmer demand for technical information and support in obtaining direct payments, have meant severe difficulties for the extension service to provide an effective viability service to an increasing number of farmers whose income is at risk (Phelan, 1998).

The shortcomings of many extension systems led to a reassessment of their focus. While it is easier to reach the larger-scale, more progressive and better-educated farmers, extension services are making greater efforts to serve those in need of agricultural information, who are often overlooked (Birmingham, 1999). There is also a growing realization that advice is not only needed on the adoption of new technology but also on many other decisions farmers have to make such as the choice of their farming system and the decision whether or not to earn an income from outside agriculture (Van den Ban, 1999). These changes in extension are not easy for the extension agencies. Agricultural development demands painful changes in the way of farming and of living for many farm families. It is a challenge for extension agencies to help farm families realize this (Van den Ban, 1999). However, the chances for success are enhanced by the ‘expert’ having ability to listen and give responsibility to the people who are to benefit (Ludwig, 2002). Extension agents also have to accept that it may no longer be possible to give a definite recommendation but the extension agent should rather help the farmer to decide for himself the best option (Van den Ban, 1999). Hoffman (1994, as cited in Van den Ban, 1999) identified that an extension organization should use its limited resources mainly to help farm families with the most important decisions they have to make. These important decisions focus more on the fundamental questions of: whether to remain in farming? To continue with an enterprise? To seek an off-farm source of income? To assess the future for the farm household? To assess if the farm operations are contributing positively or negatively to qualify of life? Rather than, what is the best variety? How much fertilizer should be used? Or, how to increase yield?

The Opportunities for Farm Families Programme (commonly known as the
Opportunities Programme) is a new approach to the provision of advisory services to farm families in Ireland. It was introduced by Teagasc (Agriculture and Food Advisory, Research and Training Body) in 2001 with the aim of refocusing the delivery of advice to farm families and attempting to better meet their needs. The purpose of this paper is to outline how Teagasc has refocused its services to farm families through the Opportunities Programme and to present the findings of an assessment of the attitudes of extension agents and farm families to this new service.

Opportunities for Farm Families Programme

The mission statement of the Opportunities for Farm Families Programme is: “… to proactively encourage, stimulate and support farm families in building the capacity of the farm household to achieve and sustain viability” (Teagasc, 2003). The fundamental objective of the programme is to help farm families generate additional household income and to improve their quality of life. A further objective of the programme is to change the method of delivery of advice to farm families by providing training to help advisers. This training helps advisers facilitate group meetings and explore on-farm and off-farm options in a systematic way. Particular emphasis was placed on connecting with those who had limited contact with the advisory service.

The technical and direct payment focus of the advisory service in Ireland resulted in the social and family issues being somewhat sidelined and the ‘bigger picture’ of the overall direction of the farm and household unit being lost. The introduction of the Opportunities Programme was an attempt to redress this imbalance. The programme also aimed to get farm families thinking about new ideas for improving their farm income – to explore new opportunities both on and off the farm. Alex, Zijp, and Byerlee (2002) identified rural information services as key to unleashing the potential of rural people and enabling them to change their living situations. The need for new ideas and information was also highlighted by Alex, Zijp, and Byerlee stated “… rural people need other options … than they did 10 or 20 years ago … many seek access to information, education and skills to prepare them for new employment.”

The holistic approach adopted in the Opportunities Programme involved the farm family and looked at the wider family and household issues which was necessary because the objectives of farm families are shaped by their resources, past activities and future perceptions (Phelan, 1994). Furthermore, personal, family and business objectives are not independent and need to be considered together and that the priority objectives for farm families reflect a combination of lifestyle and economic goals (Perkin & Rehman, 1994). This factor was recognized by Teagasc and an emphasis placed on getting other family members in addition to the main operator to participate in the programme. The emphasis within the programme is the identification of priority issues and the exploration of future options through a process of interactive discussion rather than the provision of prescriptive solutions.

Programme Outline

The programme involves three stages and is free to farm families with less than 100 income units (180,000 litres of milk quota, 100 beef cattle, 600 sheep, 100 hectares cereals or equivalent). Stage 1 involves viability appraisal in which the farm family identifies their main household viability concerns and explores possible future options (on-farm and off-farm). This stage is delivered by way of three facilitated group discussion meetings. Families are guided through worksheets which explore on-farm and off-farm options in a systematic way. Particular emphasis was placed on connecting with those who had limited contact with the advisory service.

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The specific research study outlined in this paper is part of a larger research project which focuses on the development and assessment of impact of the Opportunities for Farm Families Programme. The project is one of
action research involving the ongoing monitoring and evaluation of the extension programme. The aim of this specific research study was to determine the extent to which the programme was achieving its stated objectives. It determines the views and attitudes of advisers and participants to the Opportunities Programme. The research findings primarily informed Teagasc management on the further development and enhancement of the advisory programme. The findings also provide an insight for the advisers delivering the programme on the views and attitudes of both their colleagues and participants to the programme. The specific objectives of the advisers’ research were to:

1. Determine the views of advisers on the achievement of the objectives of the programme
2. Determine the views and attitudes of the advisers towards the programme in general.
3. Determine the views of advisers on the programme content and delivery.

The specific objectives of the participants’ research were to:

1. Determine their reasons for participating in the programme (and expectations).
2. Determine the views of participants on the achievement of the objectives of the programme.
3. Determine the views of participants on the programme content and delivery.
4. Determine the views of participants on the Way Forward Action Plan (Stage 2).
5. Determine the views of participants on the benefit of the programme.

Methodology

The Opportunities for Farm Families Programme Action Research Project involves research in 6 areas in Ireland (Teagasc services are managed locally through 28 areas). The areas selected for participation in this research programme were counties Mayo, Limerick, Kerry, Offaly, Meath and Wexford. These counties were selected as being representative of the country in terms of farm size, enterprise mix, soil type and geographic spread. For the purposes of the specific research study documented in this paper, advisers in these 6 counties who were involved in programme delivery were interviewed. In addition, county coordinators in all other areas were invited for interview. A total of 61 interviews were completed (approximately 150 advisers were involved in the delivery of the programme nationally). The interview questionnaire for the advisers focused on their: views of the aims and objectives of the programme, opinions on the programme content and delivery (including changes/improvements), and opinions on the programme worksheets (including changes/improvements).

A sample of programme participants were interviewed in three counties: Mayo; Meath and Offaly (which were selected as being representative of the country overall). The information was collected by two University Postgraduate students. Participants in the programme in these counties were identified from the Teagasc Client Management System. It was intended to select the sample at random; however, experience from the action research project had shown that families who had completed the programme more than six months previously had little recollection of the specific aspects under review. It was therefore decided to randomly select within those families who had participated in the programme within the previous 6 months. It was intended that 50% of the sample would have completed Stage 2, and the remainder would have only completed Stage 1. However, the reality in collecting the data was that there were much fewer farmers who had both stages completed and this is reflected in the sample which includes 119 farm families who had completed Stage 1 and 56 who had completed Stages 1 & 2 (the sample represents approximately 10% of the farm families who participated in the programme in 2003). The interview questionnaire for the participants focused on their: reasons for participating, views of the achievement of the aims and objectives of the programme, opinions on the programme content and delivery (including changes/improvements), opinions on the programme worksheets (including changes/improvements), opinions on the development and content of the action plans, and household details.

Both questionnaires contained open and closed questions and appropriate scales. The questionnaires were developed by the author in conjunction with a research steering committee (university personnel, Teagasc management (local and national), Teagasc specialist advisers and Teagasc socio-economic researchers). Data from both samples were analysed using SPSS.
Results

The key research findings are provided separately for the advisers’ and participants’ surveys.

Advisers Survey

The findings represent the views of advisers who were actively involved in the delivery of the programme.

Achievement of the Programme Objectives

Some 88.5% of advisers believed that the Opportunities Programme helped farm families take a realistic look at their current situation. The main reasons cited were that the process (discussion sessions) focuses their thinking on their own situation (21%) and encourages families to discuss wider household and family issues. Almost three-quarters (74%) of advisers believed that the programme could help farm families generate additional household income, mainly through improved efficiency (31%). Almost three-quarters (73%) of advisers believed that the Opportunities Programme could help farm families to improve their quality of life, mainly through better work organisation (54%).

Programme Views and Attitudes

Four out of five (81%) advisers believed that the Opportunities Programme has something to offer their clients. Therefore, the programme was not ‘more of the same’ but involved a change in approach to the provision of advice. The most important aspect of the programme identified by advisers was that it provided an opportunity for participants to appraise their own situation and options (47%). The lack of time for dealing with farm families was cited by one fifth of advisers as the main weakness of the programme. Some 16% of advisers identified a lack of options for farm families and 14% considered recruitment into the programme as weaknesses.

Opportunities Programme Content and Delivery

The vast majority (95%) of advisers believed that the Stage 1 sessions provided for good interaction and discussion among participants. The level of interaction depended on the facilitator and the composition of the group according to 39% of advisers. More than one family member participating in the programme was considered important by 92% of advisers. Some 72% of advisers believed that the Stage 1 sessions generated enthusiasm among participants. One-fifth (21%) of advisers believed that the level of enthusiasm of participants depended on the input of the facilitator. Almost two-thirds (64%) of advisers believed that Stage 1 instilled a belief among participants that they could improve their income/quality of life. One fifth (19%) of advisers stated that the level of belief of participants in what they could do to improve their income/quality of life depended on the attitude of participants coming into the programme, while 12% stated that it depended on the facilitator. Over three-quarters (77%) of advisers believed that Stage 1 was a necessary component of the programme because it allowed for an exchange of views and opinions among farm families. However, 19% of advisers felt that a one-to-one advisory consultation would be better. The vast majority (84%) of advisers believed that the local co-ordinator and one adviser should deliver the Stage 1 sessions (as specified in the programme guidelines).

The main problems with the discussion sessions identified by the advisers were: generating discussion, a reluctance to discuss financial matters in public, and getting the programme worksheets completed. The main improvements suggested included: getting more of the family involved, keeping a clear focus, using ice-breakers/discussion openers, ensuring that the group are interactive, and presenting real farm examples. Some 95% of advisers considered the programme worksheets (exploring concerns, finances and options) to be important to the overall programme. Advisers estimated that 60% of participants completed or attempted to complete the worksheets. The main problems with the worksheets identified by advisers included: getting them completed, accuracy of the information, and too intrusive/sensitive. The main concern about Stage 1 identified by advisers was recruitment (25%). However, one in five (21%) advisers had no concerns about the delivery or content. Other concerns included: limited options available for families, advisers are not trained as facilitators, too many sessions, and content needs to be strengthened (mainly in terms of technical aspects). The main change suggested by advisers to Stage 1 was to reduce the number of sessions.
Participants Survey

Two-thirds of participants surveyed were farm owners; 29.5% were joint owners with their spouses. The majority (71%) were married and two-thirds (67%) had children. Some 58% were employed full-time on the farm, while over half (54%) of their spouses were either in off-farm employment (mainly part-time) or involved in an alternative enterprise. Overall, 63% of households had another source of earned income (operator and/or spouse).

Reasons for Participation in the Programme

The main reasons why farm families participated in the Opportunities Programme were because they were asked (53%) and loyalty to their adviser (43%) (Table 1).

Couples who attended the programme together were significantly more likely to have done so out of loyalty to their adviser than individuals (60% versus 36%) (cross tabs procedure; Pearson chi-square = 7.085, df = 1 and significance = 0.008). Those who were fully dependent on their farm income were also significantly more likely to attend out of loyalty than those with an off-farm source of income (58% versus 34%) (Pearson chi-square = 10.282, df = 1 and significance = 0.001). Two out of every five (39%) farm families had no expectations about the programme prior to their participation, while 21% expected to improve their income. The majority (55%) of the Stage 1 sessions were held at night, which reflects the preference among farm families for night-time meetings (70%). The majority (71%) of respondents attended the Stage 1 sessions on their own, while one third of married couples attended together. The main reason why more than one family member did not attend was due to a lack of time.

Table 1

<table>
<thead>
<tr>
<th>Reason</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asked</td>
<td>93</td>
<td>53.1</td>
</tr>
<tr>
<td>Loyalty to Adviser</td>
<td>75</td>
<td>42.9</td>
</tr>
<tr>
<td>Curiosity</td>
<td>40</td>
<td>22.9</td>
</tr>
<tr>
<td>Concerned about the Future</td>
<td>25</td>
<td>14.3</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% because of multiple responses.

Views of Participants on the Achievement of the Programme Objectives

Over seven out of ten (71%) farm families believed that the programme could help them to take a realistic look at their current situation; a further one quarter (26%) believed it could possibly do so. Couples who participated in the programme were significantly more likely to state that it helped them take a realistic look at their own situation than those who attended the sessions on their own (88% versus 68%) (Pearson chi-square = 6.635, df = 2 and significance = 0.008). The programme was considered useful or possibly useful in terms of new ideas for generating more income by 86% of farm families. Half of respondents believed that the programme was useful in terms of giving them ideas to improve their quality of life. Over two-thirds (68%) of couples who participated considered that the programme gave them ideas to improve quality of life compared to only 44% of individuals (statistically significant, Pearson chi-square = 7.893, df = 2 and significance = 0.019).

Programme Content and Delivery

Overall the views of respondents on the programme content were positive: 42% considered the facilitators good and 41% considered the content interesting (Table 2).

Table 2

<table>
<thead>
<tr>
<th>Main Comments</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitators/Advisers Good</td>
<td>54</td>
<td>41.9</td>
</tr>
<tr>
<td>Content was Interesting</td>
<td>53</td>
<td>41.1</td>
</tr>
<tr>
<td>Some Topics Were Not Relevant</td>
<td>20</td>
<td>15.5</td>
</tr>
<tr>
<td>Got Ideas from Other Participants</td>
<td>14</td>
<td>10.9</td>
</tr>
<tr>
<td>Well Delivered</td>
<td>13</td>
<td>10.1</td>
</tr>
<tr>
<td>Worthwhile to Focus on Income and Expenditure</td>
<td>10</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% because of multiple responses.

The main comment with regard to the relevance of the information presented in the sessions related to the difficulty of meeting the needs of a diverse group – some material was not relevant to all. The information presented was considered to be clear and understandable.
by 99% of respondents. Some 98% of participants felt that they had adequate opportunity to participate/contribute to the discussion in the programme. Some 84% of participants stated that they completed or attempted to complete the programme worksheets. Significantly more couples than individuals attempted to complete the worksheets (98% versus 80%) (Pearson chi-square = 6.887, df = 1 and significance = 0.009). Some 80% found the worksheets to be worthwhile/useful. The Stage 1 discussion sessions were considered to be either important or very important by 92% of participants. Couples who attended were significantly more likely to consider the discussion sessions to be very important (23%) than individuals (8%) (Pearson chi-square = 6.13, df = 2 and significance = 0.043). Three-quarters of participants considered the number of sessions in Stage 1 to be about right with only one participant stating that 3 sessions was too much. Over one-third (35%) of couples who attended indicated that there were not enough sessions compared to 11% of individuals (statistically significant, Pearson chi-square = 4.343, df = 1 and significance = 0.037).

Way Forward Action Plan
Over half (54%) of respondents were the only family member involved in the development of the ‘Way Forward Action Plan’, while 38% were jointly involved with their spouse. Some 96% of participants with income concerns considered that their ‘Way Forward Action Plan’ addressed those concerns. Similarly 93% of respondents stated that their quality of life concerns were addressed in their ‘Way Forward Action Plan’. However, only 44.4% of those farm families with other (non-income/quality of life) concerns stated that their ‘Way Forward Action Plan’ addressed those other concerns. Two-thirds of the participants had their plans completed within two months of Stage 1. Almost all (97%) of participants were happy with the level of contact with their adviser during the development of their plan. Some 45% stated that they would implement or start to implement the actions in their plan within the next 12 months, while a further 50% said they would possibly do so. The ‘Way Forward Action Plan’ was considered to be important to their future by 84% of participants.

Benefit of the Programme
Over three-quarters (76.1%) of respondents considered the programme to be either some or a significant benefit to them and 84% would recommend the programme to a neighbour/friend. The most important benefit of the programme identified by participants was that it provided ideas to improve income (14%) and helped to improve financial management (13%).

Conclusions and Recommendations
The objectives set out for the programme were the improvement of income and/or quality of life, therefore it can be concluded from the research findings that both the advisers and participants believed that the programme was successful in terms of meeting these objectives. The process involved (discussion sessions) has encouraged farm families to discuss and explore their options and wider household and family issues (identified as important by Van den Ban, 1999). However, to date the achievements for farm families are mainly aspirational as they are recent participants into the programme and the tangible outcomes have not yet been realised. Therefore, these families will need support in order to achieve their income and quality of life objectives. However, the sessions were successful in creating enthusiasm and belief among participants that they could make positive changes. Therefore, the programme was successful in developing the human resource to solve their own problems (as highlighted by Swanson & Samy, 2002).

The programme has something new to offer farm families and is not ‘more of the same’ in terms of the approach to and delivery of advice. This is evident in the fact that the majority of advisers believed that the programme had something to offer their clients in addition to their existing advisory contact. The programme aimed to broaden the traditional farm operator/adviser contact to engage with more family members and was relatively successful in attracting the participation of other family members, particularly spouses (Bogue, 2004). It is evident that families who attended the programme together derived more benefit from it and were more positive about the programme than individuals. This endorses the family focus of the programme and the success in involving families in the programme,
however, it also highlights the need for further effort to be employed in order to encourage more families to participate.

The success of the programme is as much based on the process as the content – farm families appreciate the fact that they have an opportunity to appraise their own situation in addition to receiving technical information. However, the management of the programme requires the striking of a balance between the process and the provision of technical information. There was concern among some advisers that discussion sessions may not be the best delivery approach – not suitable for quiet/shy individuals, however, the sessions led to good discussion/interaction among participants. Despite the skepticism among some advisers, it is evident that the majority believed that the discussion format was a critical component of the programme, however, some advisers believed that the number of sessions in Stage 1 should be reduced.

While the ‘Way Forward Action Plan’ in general addressed income and quality of life concerns (primary aims of programme), there was less success in dealing with ‘other’ concerns of farm families. This is not to be interpreted as a failure of the advisers but highlights the need for more emphasis to be placed on training advisers to deal with wider family and household issues. These are areas that the advisory service had moved away from over time in an effort to meet the technical and direct payment related needs of farmers (Phelan, 1998).

Despite the obvious success of the programme in terms of the views of advisers and participants on the achievement of programme objectives, the programme is not attracting farm families on their own initiative to participate. The programme still has to be sold to them (large proportion who attend because they are asked and loyalty to their adviser). It is a challenge for an advisory service to sell a process driven programme as farmers have an expectation for a concrete recommendation (Van den Ban, 1999). The outcome from the Opportunities Programme is often long-term or at least may not be obvious initially and requires commitment from both the advisers and the farm family. However, many authors have identified that the outcome is more beneficial and effective when the adviser listens and the family get involved and joint decisions are made (Ludwig, 2002; Van den Ban, 1999; Cohen & Hoffman, 1980, as cited in Düvel, 1995).

Recommendations for Change in the Programme

Recommendations for change to the programme were made as a result of the research. These recommendations were presented to Teagasc management. The key recommendations included:

- Farm families collectively and the individual members need to be asked to participate – personal contact.
- The programme benefits are not obvious and need to be marketed to the farm families.
- Stage 1 should continue to have three discussion sessions.
- The programme worksheets need to be clarified, explained and simplified.
- The on-going support and advisory needs of farm families should be closely monitored.
- The primary method of delivery should remain as facilitated group sessions with an emphasis on discussion/interaction.
- Specific training should be provided to advisers on the facilitation of quiet/shy participants.
- Programme delivery should be evaluated locally on an on-going basis to inform advisers of necessary changes/modifications. There is a need to ask farm families their views (not make assumptions).
- Advisers need to focus on and emphasise the importance of the process of completing the worksheets as well as the accuracy of the information collected.
- Advisers need to bear in mind that the process of discussion is equally important to the provision of technical information.
- Wider household and family issues need to be debated and the programme should not become dominated by technical farm issues.

Changes Made in the Programme

Teagasc reviewed the Opportunities for Farm Families Programme in late 2003 and a number of key changes were made. It was re-launched in January 2004 as the ‘Planning Post Fischler Programme’. The main focus within the new programme was on adjusting to changes post-CAP reform (mid term review of the Agenda 2000 Agreement) (Teagasc, 2004). The key changes included:
• Reduction in the number of mandatory Stage 1 sessions to 2,
• Inclusion of the CAP reform measures in the discussion sessions,
• Programme available to all farm families and free to those with less than 150 income units,
• Programme worksheets simplified,
• Reduction in the number of mandatory worksheets,
• All advisers to be involved in the delivery of the programme,
• Programme of in-service training for all staff.

The new programme incorporated a number of the recommendations from the research; however, it differs in terms of the number of sessions, the focus on CAP reform and the programme worksheets. While the research findings were clear on these areas, decision making in Teagasc is influenced by many other factors, in particular the attitude of advisers to the programme and the workload on advisers. Many advisers were unconvinced about the programme or the need to have three sessions in Stage 1. It was believed that it would be easier to recruit farm families into the programme if there were fewer sessions. There was also a perception that farmers would be more interested if some of the ‘softer’ aspects (family and household issues) were removed and replaced with harder ‘technical’ farm aspects. In addition, farmers were demanding a service from Teagasc to assist them in deciding on their options post-CAP reform. The Opportunities Programme was the most obvious programme to meet this need as it was focused on planning for the future and has now been modified.

Educational Importance and Implications
This research specifically informed the development of the Opportunities for Farm Families Programme by identifying weaknesses and areas for improvement. The key lesson learned from this programme is the need for early evaluation of new advisory approaches in order to make prompt modifications, which are necessary to improve the effectiveness and impact of the programme. Therefore, educational institutions and extension agencies need to highlight the importance of an objective assessment of both the deliverers (advisers) and target (participants) views on extension programmes. The importance of this process was highlighted by Tucker (2000) who stated that: “… regular monitoring of progress, with periodic evaluations of the benefits being obtained are a sequence of essential functions … to keep the program well on track.” It is important that the target group (farm families), are involved in the development or enhancement of advisory programmes (or at least are consulted about them). In practice, there tends to be more focus placed on the views of deliverers (advisers) than participants. In this case farm families were very positive about the programme even though this was not obvious to the advisers who were finding it a challenge to recruit participants into the programme and to generate discussion within the sessions.

The focus of the programme was farm families, an attempt to change the traditional farm operator-adviser contact. Advisers by nature of the evolution of advice and the changes in farm families (less family members involved in the farm and a greater level of off-farm employment) had less contact with other family members and in many cases would have no knowledge of them. However, the challenge of family involvement was underestimated by Teagasc and its success very much determined by the advisers’ own initiative. No specific training was provided on family involvement. It must not be assumed because there is a linkage with advice within a household, that other family members will be aware of a programme and sufficiently interested in the programme to participate.

Educational institutions and extension agencies need to recognise that for assessments during programme delivery to be successful, they must be focused on the development of the programme and not the monitoring of extension agents. This was particularly important in this programme because it was a change in approach, in terms of both the content and method of delivery of advice. While it is necessary to evaluate new approaches, it is critically important that it is not interpreted by those advisers who are actively involved in the delivery as a monitoring or measuring of their performance. It is also important that advisers become familiar with the concept of ongoing evaluation of advisory programmes (developmental not monitoring). The full value of such assessments will only be realized if the
educational institutions and extension agencies respond with appropriate targeted training for advisers and take consideration of research findings in making modifications to the programme. To be worthwhile, research must be utilised in the development of programmes. Evaluations must have a purpose to inform programmes or else they are not worthwhile. However, researchers must also accept that there are practical and political realities and many other factors, which influence programmes and the decisions made about them.

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Self Examination of the Regional Advisory Council of the National Agricultural Research Institute of Uruguay

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Abstract

The National Agricultural Research Institute (INIA) is a public, agricultural research institution located in Uruguay. Regional Advisory Councils (RACs) were created in 1990 as a participatory and collaborative mechanism to involve stakeholders in the planning and prioritization of the agricultural research agenda. This study was conducted to assess council members’ perception about their selection process, representation, linkages with farmer organization, major barriers for appropriate functioning, areas of responsibilities, and relevance of the councils.

Findings indicate that the RAC are relevant mechanisms in guiding research and in providing linkages between research staff and stakeholders. Although almost half (46%) of the members were selected by INIA, there was a genuine representation of the major farmer and agricultural organizations at the councils. Lack of prior knowledge of RAC meeting purposes, lack of timely communication, and extended length of council members’ services were reported as major procedural barriers. Respondents also indicated as important barriers for a better performance the low turnover of council members and involvement of young people.

Keywords: Advisory councils, participation, needs assessment, stakeholders, commodity groups

Introduction

This study examined the factors and the relationships that affect the performance of the Regional Advisory Councils (RACs) at the La Estanzuela Research Station of the National Agricultural Research Institute (INIA) of Uruguay. RACs are considered as important instrument to assess agricultural demands and as a customer linkage by national agricultural research organizations.

Assessment, evaluation, and prioritization of need of the clientele are the primary objectives for demand-driven agricultural research models (Allegri, 1999). The major challenge for the agricultural research organizations is to develop accurate methodologies to collects needs from their clientele and update these needs periodically. Moreover, generally resources are limited; therefore those needs also should be prioritized.

INIA is the main applied agricultural research institution in the country, created in 1989 over the existing base of the previous public agricultural research institution. One of the major changes in this new organization was the mandate to create Regional Advisory Councils, which serve, as instruments for need assessments and customer linkages. Allegri (1999) stated that, “Regional Advisory Councils at each Experiment Station provide an important forum for regular exchange of views and close contacts between farmers and INIA staff. They are the places where actual exchanges and participation occur” (p. 115).

No studies have been made to assess the performance of the councils, yet there appears to be several limitations in their performance. Therefore, it has been felt that a study on the contribution of the RACs would be helpful to INIA and to strengthen the instrument.
The objectives addressed by this research are: a) to identify the perceptions of Regional Advisory Council members regarding the selection process of members and their contributions to INIA with respect to research needs assessment, b) to identify major barriers affecting the functioning of the RACs, c) to develop recommendations to improve the operation and performance of the RACs of La Estanzuela research station.

Theoretical Framework

Overview of Uruguay

Uruguay is one of the smallest countries in South America (176,215 Km²). In comparison with the United States, its area is about the size of the state of Florida. The total population of Uruguay is 3,400,000 (INE, 2002), 90.8% is urban and 9.2% is rural. The general literacy rate is 96.9% (rural 93.8%) (Presidencia de la República del Uruguay, 2002).

The economy of Uruguay depends on its agricultural sector. This sector has contributed an average of 9% to the gross national product in the last 10 years. Uruguay has traditionally been an exporter of agricultural products; agricultural production in Uruguay accounts for about 60% of exports revenues, and more than 90% of the food consumed by its population (OPYPA, 2002).

The National Agricultural Research Institute (INIA)

INIA is a relatively new national research institution oriented by a clientele demand model. In 1989, the Congress approved a government proposal based on ideas of some researchers, farmer organizations, professional associations and the scientific community.

The main objectives of this new institution are, a) to promote and execute applied agricultural research activities in order to contribute to sustainable development of the agricultural sector, and b) to articulate an effective transfer of technology generated through the technical assistance and extension organizations belonging to the public or private system. According to the actual research-technology transfer-extension system in Uruguay, INIA is responsible for 90% of the agricultural research (Allegri, 1999).

With INIA’s creation, farmers were involved formally, for the first time, in the management of the INIA organization through two representatives appointed by farmer organizations to the INIA Board. In addition, the RACs were created as broad-based vehicles for gaining additional farmer involvement. The INIA’s Law creation also determines a farm tax (0.4%) to support the research operation, representing about 41% of the total budget of INIA. The total basic budget is derived from this tax, and similar amount is matched by Government funds (Delpiazzo, 1996).

The Regional Advisory Councils

RACs are composed of representatives of public and private institutions linked with the more significant agricultural activities developed in the region of each research station. The major areas of responsibilities are to identify technological problems, research priority setting, and the identification of possible educational activities. RAC members are not remunerated by INIA. Permanent members could reach 15 in number in each RAC.

The Board of INIA, understanding that the Regional Advisory Councils do not have sufficient member base to provide a broad-based opinion from the clientele, required the creation of commodity groups or Working Groups (WGs). There is no limitation to the number of WGs associated with each research station, nor in the number of participants. According to Albicette (2000), 26 WGs are actually operative due to some changes occurring according to the increment in the relative importance of some goods and/or the closing or merging of some of them. All members working at the RAC and the WGs were included in this study.

Problem Statement

Profound and permanent global changes are affecting the characteristics and the variability of problems. Market globalization and market protection increase the complexity of those problems and challenge farmers to obtain new technology in order to solve technological problems and to become efficient in the art of food production.

Agricultural research institutions are increasingly affected by global changes and the complexity of the external context, which increases the interdependence of economic sectors, higher technological requirements, and environmental and sustainable issues (Allegri, 1999).
Participation and involvement requires the implementation of tools and skills to drive and internalize the resulting inputs. RACs suffer from low motivation, participation and lack of trust (Albicette, 2000; Allegri, 1999; Restaino, 1998). Besides, researchers feel that the feedback and inputs from RACs are feeble, and are affected by current problems. Johnson (1998) examines the experience of a stakeholder advisory group’s attempt to guide a land grant’s research priorities. This author states that the failure of a broad-based, statewide advisory group raises serious concerns for proponents of stakeholder involvement in research priority making. Hoefner (1998) argues that there is little published on stakeholder advisory processes and, therefore, little is known about which methods are useful and which are not.

The objectives addressed by this research are: a) to identify the perceptions of INIA La Estanzuela research station RACs members regarding the selection process of members and their contributions to INIA with respect to research needs, b) to identify major barriers affecting the functioning of the RACs, c) to develop recommendations to improve the operation and performance of the Regional Advisory Councils of INIA La Estanzuela research station.

**Methodology**

This study was conducted at La Estanzuela research station of the National Agricultural Research Institute (INIA) of Uruguay between June and September 2002. This research has the format of a case study, and utilized qualitative and quantitative methods to obtain a more complete picture in order to understand the complexity of internal and external human relationships under the framework of the organization.

All participants of Regional Advisory Councils (RAC) and Work Groups (WG) listed in the database of INIA La Estanzuela since December 1998 were included in this study. According to this, 127 council members were identified as the target population.

Survey questions were developed taking into consideration the suggestions proposed by INIA. After a careful and participative process a survey questionnaire was built including 34 questions in 6 sections as follow: a) membership and member’s selection, b) members’ representation, c) operational characteristics of meetings, d) meetings procedures, e) major barriers for functioning, and f) personal information. Pre- and cover letters were developed to establish the first contact with survey participants and to introduce the necessary information of the study, respectively. The pre-letters were sent by public or private mail (depending on the best choice regarding the participant address) on June 20, 2002 (10 days before mailing the survey questionnaire). The survey packets were assembled including the cover letter, the survey questionnaire, and a self-addressed prepaid return envelope. Survey packets were mailed using both a private and a public mail company from Colonia City (Uruguay) on July 3, 2002. A confidentiality statement, in agreement with the University Committee on Research Involving Human Subjects (UCRIHS) of Michigan State University, was included assuring survey participants’ privacy protection.

Completed questionnaires were carefully checked upon return. By the closing date, August 15 2002, 81 usable questionnaires were received from the RAC/WG members (64% response rate).

Interviews were conducted as part of the qualitative data collection. A total of 6 interviews were conducted to RAC/WG council members. The notes were analyzed, clustered into common topics and reported together with the open-ended questions over the same topics as were asked in the survey questionnaires.

Data analysis was done using a continuous and interactive process from the beginning of the research study was followed to collect and analyze qualitative data (INIA documents, council meeting minutes, interviews, and open-ended questions included at the survey questionnaires). Quantitative data were coded, entered and analyzed using the Statistical Package for Social Science (SPSS).

**Results**

Demographic information of RAC members’ indicates that the average age of members (mean) was 48 years ($SD = 9$ years). Almost all of council members are male (96.3%). One-fourth of the council members (24.7%) were farmers, about one-fifth (19.8%) were farm advisors, and about 26% were “professionals working for an institution” as his/her major occupation. Four out of five (81.5%) have more than 13 years of education,
representing a bachelor level or university degree. Almost one out of ten (9%) indicated high school education, and the same number (9.8%) indicated less than 10 years of formal education.

Council member’s living location (Urban, Suburban or Rural) is an important characteristic in order to understand how available some services could be for members. Three out of five (58%) came from an “urban” living location and Montevideo the capital of Uruguay. The “rural” living location (member that lives on a farm) was indicated by one-fourth of the members.

Council members could participate as Regional Advisory Council member (RAC), Working Group member (WG), or participate in both. Results shows that 1.3% indicated that they were RAC members, about 34% indicated WG membership position, and one out of ten (10%) mentioned participation in both councils as WG member and RAC representative. However, a significant percentage of respondents (32.5%) indicated that there were “not sure” about what his/her membership is. Similarly, about one out five respondents (22.5%) indicated that they were no longer participating in any council (neither RAC, nor WG). From those members responding that they are no longer participating or not sure about his/her status, about 8% mentioned that they lost interest in continued participation. Similarly, almost 8% mentioned they found some kind of conflict with other activities, 5% indicated that they found the system complex, and about 79% mentioned other reasons, of which the most frequent (22 out of 38) was the fact that they had not received new invitations to participate.

Almost 29% of respondents started their participation in 1990, the year when the councils were established by INIA, and one-half (50%) of the members have been working for at least 5 years in the RAC/WG.

Selection of council members is an important first-step to the functioning and representation of a participatory process. Findings show that INIA is directly responsible for the selection of about half (46%) of RAC/WG members. Similarly, two-fifths (40%) of the INIA LA Estanzuela RAC/WG members were designated to participate by majors farmers organizations operating in the country. Fewer respondents (2.5%) expressed that they were self involved by personal interest, and one out of ten (10%) were invited by others council members. Participants were asked to offer suggestions about how members should be selected in the future. Members felt that future council members should have a wide experience in the field for what they are expected to represent. Moreover, actual council members indicated that selection should be done from a wide spectrum, including independent members, members representing regional organizations, national organizations, and others farmers and/or agricultural organizations. Similarly, members pointed out the following values as remarkable and necessary characteristics for any council member: innovative, positive, vision, leadership, and motivation. The quotation below indicates the spirit of what participants indicated as desirable: “Select people motivated, innovative with positive attitude and directly linked with the production…with mud on the shoes.”

Regarding members’ representation status (linkage with farmers organization) almost four-fifths (80%) of the members represent an organization or a group of farmers. More than 60% members represent some agricultural or major farmer organization, and about two out of ten members (19%) indicate they are independent members.

Besides identifying the real representation that each member has at the councils, members were asked to indicate what perception they have about the overall representation of the major stakeholders groups. Respondents were asked to indicate their perceptions on a five point Likert-type scale (1=None, 2= Poor, 3=Fair, 4=Good, 5=Very Good). The values for each statement were averaged to determine a value for each statement based on the overall opinion of the RAC/WG members. Perception of council members about farmers’ representation is fair ($M = 2.82$, $SD = .976$). Their perception about University representation was poor ($M = 2.44$, $SD = 1.089$). Similarly, members indicated a poor ($M = 2.56$, $SD = .979$) perception for the agri-industry representation and for the agri-business representation ($M = 2.59$, $SD = 1.023$) at the councils. University and agri-business representation were the statements where members expressed major dispersion in their opinion indicated by a high standard deviation. “Organization representation” at the councils was rated higher ($M = 3.17$, $SD = .828$). There was no significant difference in perception of
representation at the RAC/WG according to their membership status.

Analysis of the members’ opinions reveals that meetings are very bureaucratic with a wide and extensive program, and consequently lack available time for discussion and interaction. Previous information was indicated as very poor or non-existent; therefore meetings show lack of preparation from members resulting in uninformed members.

Methodological aspects of the meetings were also indicated as responsible for poor meetings. Members indicated that the methodology used regularly lacks opportunity to interact with INIA’s researchers. It was pointed out that meeting times are not for discussion, but mainly to inform about what INIA researchers are doing. Finally, members indicated as an additional weakness the domination that old and experienced council members exert over the rest of the members.

**Major Perceived Barriers**

Members rated with a mean of 2.68 ($SD = 1.016$) in a one to five Likert scale (1=Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly agree) their opinion about received “adequate guidelines about the RAC and WG councils. When asked about if they received adequate information prior to the meeting, a mean of 2.60 ($SD = .990$) was founded according to their opinion.

Qualitative data regarding the major barriers showed that 11 statements out of 26 were related to the utility and the importance given to council members’ opinion by INIA. Council members felt that INIA shared information about closed or approved research programs. Lack of feedback from INIA regarding council suggestions, recommendation or possible implementation of council opinions seem to support the previous idea about the importance that INIA is given to this systems to RAC/WG members.

Another important group of opinions is related to the economy in which Uruguay, and in particular the agricultural sector, is living since the end of year 2000. Members indicated that the recession does not allow them to see the technological needs of the future. The third most important issue indicated is related to the economic cost that members have to pay to participate. Members indicated that participation at the councils is not remunerated by INIA. As a consequence, members have a direct cost of travel and expenses in order to assist to attend the meeting and a more important indirect cost is the loss of the day in their personal activities.

Finally, a miscellaneous group of minor comments were related to: a) members’ low level of commitment, b) membership renewal renovation, c) regulation of members participation, and d) lack of coordination between major farmers organizations.

**Responsibilities of the RAC Councils**

Participants were asked to answer a set of statements regarding the relevance of the RAC for a selected given group of major responsibilities (Scale: 1=Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly agree). To prioritize research programs ($M = 4.08$), farmer needs identification ($M = 3.87$), to maintain strong linkages with the major farmer organizations ($M = 3.74$), to identify regional educational activities ($M = 3.46$), and to give advice about operative INIA’s budget” ($M = 3.40$), were identified by participants as the most important responsibilities for these institutions.

**Conclusions**

Leholm, Hamm, Suvedi, Gray, & Poston, (1999) and Leholm, Suvedi, & Vlasin, (1998) have indicated that establishing the linkage between research, extension, and stakeholders has been a considerable challenge. Many research stations have been criticized for not including formally stakeholders’ opinions. This is especially true in many developing countries. In this sense, the system established by INIA represents a good example of both points: a) developing an instrument in an innovative system that allows farmers and other stakeholders to participate and collaborate in the decision-making process of the institution, and b) creating an instrument of linkage for the major agricultural actors working in the agricultural sector of Uruguay.

RAC members indicated a substantial relevance of this instrument for identifying technological needs and educational activities, prioritizing research and extension programs, and as using a linkage tool with stakeholders.

Findings showed that major barriers for an efficient functioning were lack of guidelines, poor definition and communication of objective/purpose of council meetings, low council members’ renovation, were identified as
the major limitations for the councils’ performance. Although almost half (46%) of the members were selected by INIA, there was a genuine representation of the major farmer and agricultural organizations at the councils. According to Mainzer (1958), it is very important for the life and accuracy of the advisory council to have a good balance represented by geographical locations, age, gender, actor’s major role, and commodity. Lacy (1996) and Johnson (1998) indicate the importance of having a broad-based composition and appropriate membership as a key factor for building successful advisory councils.

Council members also indicated that meetings are very broad in their programs, that many reports are presented and that there is not enough time for discussion. In addition, council members complained that they receive low feedback from INIA regarding their opinions and participation. The conducting of “open-agenda” meetings appears to be important in order to ascertain new topics and to give the opportunity to RAC members to freely discuss problems or issues that would otherwise be missed or be outside of the agenda. The socio-demographic information of RAC council members shows low participation of young people, and an extended length of service of council members at the RAC and WG. These findings are in agreement with the major issues affecting advisory councils as reported by Johnson (1998) in a similar study conducted at the Michigan Agricultural Experiment Station of Michigan State University.

A significant percentage of respondents (32.5%) indicated that they were “not sure” about his/her membership. This illustrates a problem in the follow up procedure or communication process between INIA and the council members. It is important to remark that many of the problems reported in this study were identified as common problems by other researchers for other advisory councils, and represent mostly organizational problems, rather than structural problems. As Axinn & Axinn (1997) pointed out, participation and collaboration does not occur without cost; that cost includes the investment of time, energy, and appropriate communication, “including long hours of patient listening” (p. 93).

INIA, and the Regional Advisory Councils instrumented by INIA are remarkable examples of participation, collaboration, and integration with stakeholders, and could be extended to others situations around the world. This study has identified some key elements to improve the methodology.

References


Lithuanian Agriculture Teachers’ Perceptions on Agricultural Production, Economics, Environment, and Social Responsibility Issues

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Abstract

Lithuania is a country with a strong history of agriculture production and environmental protection. Agricultural education programs throughout the country offer agriculture instruction in numerous specialties related to agricultural production, agricultural economics, and environmental protection. Lithuanian agriculture teachers who participated in two in-service workshops offered by the American Professional Partnership for Lithuanian Education completed a survey about their perceptions of the ecological paradigm including production efficiency, economic viability, environmental sustainability, and social responsibility.

The Lithuanian agriculture teachers held strong beliefs towards agricultural production and the free market economy. They perceived the areas of environmental sustainability and social responsibility to be of utmost importance to the future of Lithuanian agriculture and rural communities. Respondents agreed that agricultural education programs should teach students about the interrelationships between agriculture, the environment, and the citizens of Lithuania.

Keywords: Lithuania, agricultural education, ecological, environmental

Introduction

Agriculture throughout the world is changing rapidly. At the same time, the growing world population is becoming more concerned with a safe supply of food and the protection of a fragile environmental ecosystem. It is the competing forces between increasing agricultural production while also protecting the environment that is the challenge for agricultural professionals around the world. The country of Lithuania is no different. Since Lithuania gained independence from the Soviet Union in 1990, agriculture production has increased, while its citizens have become more aware of environmental pollution that was a result of the Soviet occupation. Štuikys and Ladyga (1995) stated, Ecological requirements were denied in Lithuanian economic development for many years, like in other countries with centralized economies. Industries, transport, military units of Soviet army, collective farms with intensive chemization and production intensification were
responsible for the pollution of the environment, surface and subsoil water and the depletion of soil (p. 145).

The plight of the environment in Lithuania was also discussed by Ardys-Juška (1999) when she wrote:

In Western countries environmental protection is a way of life and of protecting natural resources. Granted, even before the 1990s Lithuania’s citizens were aware of industry destruction of their natural resources, but they were powerless and not prepared to act as their more sophisticated counterparts in the Western countries. (p. 1)

The Bureau of European and Eurasian Affairs of the United States Department of State (2004) described Lithuania when it wrote:

The Soviet era brought Lithuania intensive industrialization and economic integration into the U.S.S.R., although the level of technology and state concern for environmental, health, and labor issues lagged far behind Western standards...From 1949-52 the Soviets abolished private ownership in agriculture, establishing collective and state farms. Production declined and did not reach pre-war levels until the early 1960s. The intensification of agricultural production through intense chemical use and mechanization eventually doubled production but created additional ecological problems. (p. 6)

The problems faced within the agricultural sector are not unique to Lithuania. The issue of agricultural and ecological compatibility is also a problem in other former Soviet republics.

**Theoretical Framework**

The same concerns have been seen in the United States for decades. As a result of changing consumer values, the College of Food, Agricultural, and Environmental Sciences at The Ohio State University developed the Ecological Paradigm model in 1994 (Moser, n.d.). The Ecological Paradigm is a model for the integration of production agriculture, economic viability, environmental sustainability and social responsibility. Since its inception, the model has been integrated into college courses, research initiatives and service to the agriculture industry throughout Ohio. As the citizens of Ohio and the United States become more concerned about the safety of their food supply and the protection of environmental resources, the ecological paradigm has gained in popularity.

As Lithuania prepares to join the European Union, issues of agriculture production and environmental protection become increasingly more important. Tracy (1999) wrote, “Increasing emphasis has been placed on agri-environmental issues, in response to public concern” (p. 68). In discussing agriculture production and economics, Tracy stated, “In view of surplus farm production, farmers are now seen not just as providers of food but also as guardians of nature - there may be more willingness to subsidize farmers for conserving the countryside than for producing surplus food” (p. 69). At the same time, the citizens of Lithuania may be changing their priorities, “price supports and protection policies are losing public support; there is growing demand for healthy food, more natural farming processes, greater care for the rural environment, etc.” (Tracy, 1999, p. 72).

Lithuanian citizens have always been concerned for the environment of their country. Fifty-one percent of the country is cultivated in agriculture while 30% is covered by forests. It is estimated that private agriculture production operations and forest land will increase in the future. Currently 20% of the labor force is employed in the agriculture industry (Central Intelligence Agency, 2004).

It is this integration of agriculture and the environment that was discussed by Rabinowicz (2001). Rabinowicz (2001) stated:

To some extent, provision of environmental qualities can be indirectly commercialized through rural tourism - national and even international...Agri-environmental measures should be seen in the broad context of the development. There are several environmental problems closely related to agricultural activities, with water quality being the most urgent in some countries. (p. 185)

In an article in Norway Nation publication, Angstreich (2003) also discussed this issue when he suggested that entrepreneurship, leadership and social skills were qualities that should be promoted. He postulated that economic, environmental and social qualities are inseparable parts of a sustainable whole. Angstreich concluded that in a world that is increasingly more globalized, polarized, ecologically threatened and market-
oriented, creating value and employment in ethical ways becomes a practical urgency.

Thuemmel (1999) conducted qualitative research on the planning for vocational education for agricultural development in Lithuania. He concluded that agricultural high schools and colleges should prepare students for careers in agriculture such as agro-tourism, fisheries, forestry, environmental and resource management.

Edwards and Thuemmel (2000) in a asked Lithuanian agriculture teachers participating in in-service workshops about future trends in Lithuanian agriculture. The researchers found that 50% of respondents thought there had been “some improvement” in the economic status of farmers since Lithuania gained its independence in 1992. However, over 72% of respondents would not encourage their son/daughter to prepare for a career in agriculture.

In its annual report on Lithuanian agriculture, the Ministry of Agriculture (2003) outlined objectives of agricultural and rural development including: “Possibilities to diversify economic activities in rural areas, enabling agricultural producers to be involved in subsidiary economic activities safeguarding biological diversity, landscape and environment” (p. 15). The report went on to state:

It is expected that the implementation of these objectives would increase the quality of agricultural production. Adoption of new technologies and upbringing of human resources will make favourable conditions for increasing farm competitiveness, growth of population income and improvement of life quality in rural areas. Big attention will be paid for implementation of environmental protection requirements while developing agriculture and promoting alternative activities in countryside. (p. 15)

**Purpose and Objectives**

The purpose of this study was to determine the perceptions of Lithuanian agriculture teachers towards the relationship between agriculture and the environment. The specific objectives included:

1. Determine Lithuanian agriculture teachers’ attitudes about the Ecological Paradigm including production efficiency, economic viability, environmental sustainability and social responsibility.

2. Determine if Lithuanian agriculture teachers from different schools have different attitudes towards the Ecological Paradigm.

3. Determine if male and female agriculture teachers’ attitudes differ towards the Ecological Paradigm.

**Methods**

This descriptive research study was conducted with Lithuanian agriculture teachers attending two in-service workshops presented by the American Professional Partnership for Lithuanian Education (A.P.P.L.E.) during the summer of 2003. Specific questions were revised to reflect Lithuanian agriculture, and then translated into Lithuanian by an interpreter experienced in agricultural terminology. The instrument was checked for validity by a panel of experts including teacher educators in agriculture, graduate students, and agriculture professionals with international experience.

The instrument was adapted from a survey conducted by Chen (2003) at The Ohio State University. The instrument included 27 statements related to the four areas of the Ecological Paradigm: production efficiency, economic viability, environmental sustainability, and social responsibility. The 5-point Likert-type scale ranged from 1 = strongly disagree to 5 = strongly agree. The 27 Likert scale items were grouped into the four areas of the Ecological Paradigm. Five questionnaire items were included in the production efficiency area, eight items were in the economic viability area, seven items composed the environmental sustainability area, and seven items were in the social responsibility area.

Results were analyzed using the Statistical Package for the Social Sciences (SPSS 11.0). Frequencies, percentages, means and standard deviations were calculated. The five-point Likert-type scales were recoded into three-point scales (strongly disagree/disagree, undecided, agree/strongly agree) for reporting purposes. Group means and standard deviations were calculated for each of the four areas of the Ecological Paradigm. Negatively worded items were recoded to correspond with the other items.

**Results**

The purposive sample consisted of 27 Lithuanian agriculture teachers. All 27 respondents agreed or strongly agreed that technology is best used to increase production
efficiency in agriculture. Less than half of the respondents thought technology should be used to improve the life of agriculture producers. Over 85% of the respondents thought that fewer farmers were a positive result of improved technology. Table 1 includes the frequencies and percentages for the agricultural production statements.

Twenty five Lithuanian agriculture teachers (92.6%) agreed that farming was first and foremost a business while 24 respondents (92.3%) agreed that the primary goal of farmers should be to maximize productivity, efficiency, and profitability. Almost 77% of the respondents disagreed that the amount of farmland that can be owned by an individual or corporation should be limited. The frequencies and percentages for the agricultural economics statements are presented in Table 2.

Table 1

<table>
<thead>
<tr>
<th>Lithuanian Agriculture Teachers’ Perceptions on Agricultural Production Efficiency Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree or Disagree</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Technology should be used as best as possible to increase efficiency of agricultural production.</td>
</tr>
<tr>
<td>Meeting food needs with fewer farmers is a positive outcome of technological progress.</td>
</tr>
<tr>
<td>Production, processing, and marketing of agricultural products are best done at the regional level.</td>
</tr>
<tr>
<td>Production, processing, and marketing of agricultural products are best done at the local level.</td>
</tr>
<tr>
<td>Technology should be used to make farm labor more rewarding and enjoyable, but not to replace it.</td>
</tr>
</tbody>
</table>

The Lithuanian agriculture teachers all agreed that farmland should be protected to maintain its long-term productivity and that soil and water should be strictly conserved. Almost 60% of the respondents agreed that modern agriculture was a major cause of ecological problems and must become ecologically sound in the future. The results for the environmental sustainability statements are listed in Table 3.

One-hundred percent of the respondents agreed that agricultural education programs should teach about the interrelationships among the environment, agriculture, and people. The respondents also agreed that a successful farmer is a good steward of land and protects natural resources as best as possible. Over half of the respondents (55.6%) disagreed that the future success of agriculture will not be affected by the economic health of rural communities. Table 4 contains the information from the social responsibility statements.
**Table 2**

**Lithuanian Agriculture Teachers’ Perceptions on Agricultural Economic Viability Issues**

<table>
<thead>
<tr>
<th>Economic Viability Statements</th>
<th>Strongly Disagree or Disagree</th>
<th>Undecided</th>
<th>Agree or Strongly Agree</th>
</tr>
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<tr>
<td>Farming is first and foremost a business like any other business.</td>
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<tr>
<td>The primary goal of farmers should be to maximize the productivity, efficiency, and profitability of their farms</td>
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<tr>
<td>The successful farmer is one who earns enough from farming to enjoy a good standard of living.</td>
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<td><img src="https://example.com/table.png" alt="Table" /></td>
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<tr>
<td>Farmers should purchase most of their goods and services they use on their farm.</td>
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<td><img src="https://example.com/table.png" alt="Table" /></td>
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<tr>
<td>Small to medium-sized farms can best serve agriculture needs.</td>
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<td><img src="https://example.com/table.png" alt="Table" /></td>
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<tr>
<td>Farmers should farm only as much land as they can personally care for.</td>
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<td><img src="https://example.com/table.png" alt="Table" /></td>
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<tr>
<td>Farmers should produce as many of their own goods and services as possible instead of purchasing them.</td>
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<td><img src="https://example.com/table.png" alt="Table" /></td>
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<tr>
<td>The amount of farmland owned by an individual/corporation should be limited in order to encourage land ownership by as many people as possible.</td>
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</table>

Objective 2 of the study was to determine if Lithuanian agriculture teachers from the two workshops had different attitudes towards the Ecological Paradigm. Twelve teachers attended the in-service at the Rietavas Agriculture School in Rietavas and 15 teachers attended the in-service at the Daugai Agriculture School in Daugai.
Table 3

Lithuanian Agriculture Teachers’ Perceptions on Environmental Sustainability Issues

<table>
<thead>
<tr>
<th>Environmental Sustainability Statements</th>
<th>Strongly Disagree or Disagree</th>
<th>Undecided</th>
<th>Agree or Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( f )</td>
<td>( % )</td>
<td>( f )</td>
</tr>
<tr>
<td>Farmland should be farmed so as to protect the long-term productive capacity of the land, even if this means lower production and profits</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Soil and water are the sources of life and should be strictly conserved.</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Farms should be specialized in one or at most a few crops</td>
<td>1</td>
<td>3.7</td>
<td>0</td>
</tr>
<tr>
<td>Agriculture’s future success lies in learning to imitate natural ecosystems and farm in harmony with nature</td>
<td>2</td>
<td>7.4</td>
<td>0</td>
</tr>
<tr>
<td>Farmers should use primarily natural fertilizers/production methods such as manure, crop rotations, compost, and biological pest control</td>
<td>2</td>
<td>7.4</td>
<td>0</td>
</tr>
<tr>
<td>Agricultural scientists and policy-makers should expand efforts to develop bio-technologies and other innovations to increase food supplies</td>
<td>2</td>
<td>7.4</td>
<td>1</td>
</tr>
<tr>
<td>Modern agriculture is a major cause of ecological problems and must be greatly modified to become ecologically sound</td>
<td>9</td>
<td>33.3</td>
<td>2</td>
</tr>
</tbody>
</table>

Lithuania agriculture teachers in both Rietavas \( (M = 4.04) \) and Daugai \( (M = 4.16) \) sites rated environmental sustainability questions the highest of the four Ecological Paradigm areas. Social responsibility was rated second highest by teacher in both Rietavas \( (M = 3.95) \) and Daugai \( (M = 3.85) \). Participants in the Rietavas workshop rated economic viability fourth \( (M = 3.67) \) while participants in the Daugai in-service rated production efficiency fourth \( (M = 3.39) \). Table 5 contains the means and standard deviations for all categories.
Table 4

**Lithuanian Agriculture Teachers’ Perceptions on Social Responsibility Issues**

<table>
<thead>
<tr>
<th>Social Responsibility Statements</th>
<th>Strongly Disagree or Disagree</th>
<th>Undecided</th>
<th>Agree or Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Agricultural education programs should teach students about the interrelationships among the environment, agriculture, and people.</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>A successful farmer is one who is a good steward of the land and protects natural resources as best as possible.</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>An important responsibility of agricultural education programs is to develop future leaders for the agricultural industry and rural communities in Lithuania.</td>
<td>1</td>
<td>3.8</td>
<td>1</td>
</tr>
<tr>
<td>Farm traditions and culture are outdated and of little use in modern agriculture.</td>
<td>4</td>
<td>14.8</td>
<td>2</td>
</tr>
<tr>
<td>In general, I believe our agricultural students have a good understanding of the interrelationships among the environment, agriculture and people.</td>
<td>6</td>
<td>22.2</td>
<td>2</td>
</tr>
<tr>
<td>In general, I believe our farmers have a good understanding of the interrelationships among the environment, agriculture and people.</td>
<td>6</td>
<td>22.2</td>
<td>6</td>
</tr>
<tr>
<td>The future success of agriculture will NOT be affected by the economic health of rural communities.</td>
<td>15</td>
<td>55.6</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 5

**Lithuanian Agriculture Teachers’ Attitudes toward the Ecological Paradigm (N = 27)**

<table>
<thead>
<tr>
<th>Ecological Paradigm Components</th>
<th>Rietavas Inservice Participants (n = 12)</th>
<th>Daugai Inservice Participants (n = 15)</th>
<th>All Participants (N = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Environmental Sustainability</td>
<td>4.04</td>
<td>.29</td>
<td>4.16</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>3.95</td>
<td>.25</td>
<td>3.85</td>
</tr>
<tr>
<td>Production Efficiency</td>
<td>3.95</td>
<td>.40</td>
<td>3.39</td>
</tr>
<tr>
<td>Economic Viability</td>
<td>3.67</td>
<td>.29</td>
<td>3.56</td>
</tr>
</tbody>
</table>

Objective 3 was to determine if male and female agriculture teachers’ attitudes differ towards the Ecological Paradigm. Eleven males and 14 females responded to the statements. Two respondents did not list their sex. Males and females both rated environmental sustainability statements as the highest. Women rated social responsibility as the second highest area while males listed production efficiency issues as second highest. Economic viability statements were listed as the lowest area by both male and female Lithuanian agriculture teachers. Table 6 contains the results from male and female respondents on the ecological paradigm areas.
Table 6

*Attitudes towards the Ecological Paradigm by Gender (N = 25)*

<table>
<thead>
<tr>
<th>Ecological Paradigm Components</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 11)</td>
<td>(n = 14)</td>
</tr>
<tr>
<td>Environmental Sustainability</td>
<td>4.20 .30</td>
<td>4.16 .25</td>
</tr>
<tr>
<td>Production Efficiency</td>
<td>3.70 .49</td>
<td>3.64 .39</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>3.70 .44</td>
<td>3.79 .24</td>
</tr>
<tr>
<td>Economic Viability</td>
<td>3.46 .48</td>
<td>3.33 .35</td>
</tr>
</tbody>
</table>

**Conclusions and Recommendations**

Lithuanian agriculture teachers had a positive attitude about the use of technology to increase production efficiency and reduce the numbers of farmers needed to produce food. They viewed agriculture as a business whose primary goals should be to maximize productivity, efficiency and profitability. The Lithuanian agriculture teachers had a very business oriented, free-enterprise, attitude towards production efficiency and economic viability of agriculture.

At the same time, the agriculture teachers held strong beliefs about environmental sustainability and social responsibility of agriculture. Lithuanian agriculture teachers believed in protecting the long-term productive capacity of the land, and the soil and water resources of Lithuania. The Lithuanian agriculture teachers’ concerns about protecting the natural resources is a common characteristic among the citizens of Lithuania. This conclusion was supported by Štuikys and Ladyga (1995), Ardys-Juška (1999), and Tracy (1999).

Lithuanian agriculture teachers feel that agricultural education programs should teach Lithuanian students about the interrelationships among the environment, agriculture, and people. They also see the importance of a successful agricultural industry to the economic health of rural communities. This issue is also a major area of emphasis outlined by the Ministry of Agriculture of the Republic of Lithuania (2003). Agriculture teachers in Lithuania have a strong desire to make agriculture production efficient, economically sound, while protecting the environment of Lithuania and meeting the needs of society. Accordingly, agricultural education programs throughout Lithuania should incorporate the ecological paradigm areas into their agricultural curricula.

References


Barriers and Supports: Finding Their Place in Agricultural Extension

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Abstract

Women of the twenty-first century continue to break old patterns and norms. As Cooperative Extension nears its century mark in the United States, women are carving a niche as agricultural agents. The purpose of this study was to describe unique challenges regarding personal lives and barriers unique to female agricultural agents in the United States. The study also investigated existing mentoring and support systems. A mail questionnaire was sent to a census of 488 women in 49 states. A final response rate of 79% was achieved. Most frequently cited barriers associated with job role were acceptance by male peers and clientele and differential treatment due to gender. Overall barriers perceived by women in extension were categorized as stereotypical roles, gender biases, and balancing professional and personal responsibilities. Common sacrifices noted were family and personal well-being, energy and time commitments, and money. While women notably value encouragement and support from other women in the profession, many also indicated they had been discouraged by others when they considered their career path. While overall, respondents were satisfied with their job and career path, many were still hesitant about whether they would do it again. Encouragement of others to follow in the same path was frequently qualified by stating concerns and barriers previously identified.

Keywords: Women, cooperative extension appointment, gender, equity, minorities

Introduction

“Liar, briar, limber, lock—three geese in a flock; one flew east, one flew west, one flew over the cuckoo’s nest…”

Nursery rhymes are traditional around the world. Lithuanian children hear of The Swan Bridge on the lake of Trakai. Hans Christian Anderson gave Denmark the story of Thumbelina. Tales from South Africa speak of a lost spear and the quest for the hand of a great king’s daughter, even ancient Egypt had the Cinderella story of Rhodopis and her Gilded Sandals. All of these tales and many more create the mystical world of a childhood sacred in all societies; a world that speaks of beautiful princesses waiting to be rescued by daring princes. Perhaps the world of nursery rhyme and fairy tale would better serve modern daughters with the Chinese folk tale, The Girl Who Used Her Wits. “A woman’s issues of soul cannot be treated by carving her into a more acceptable form as defined by unconscious culture, nor can she be bent into a more intellectually acceptable shape by those who claim to be the sole bearers
of consciousness” (Estes, 1997), Delving into the world of children’s psyche may open scholarly eyes to the true value of this study. “Fairy tales, myths, and stories provide understandings which sharpen our sight so that we can pick up the path left by the wildish nature” (Estes, 1997). As Estes points out these stories sharpen our focus to the true dilemma facing women of the new millennium.

Women in the twenty-first century seek independent and fulfilling professional lives. Upon entering the new century women found themselves in a state of flux. “Old patterns and expectations have broken down, but new ideas seem fragmentary, unrealistic, and often contradictory. Even statistics confuse. By the 1990s, 77 percent of married women with school-aged children were in the workforce….still women’s earnings remain just 74 percent of men’s” (Orenstein, 2000, p.4). Should women wait to be rescued? Should they be bold and daring and save themselves? Can a woman be both a good wife and mother and a successful professional?

Americans believe in dreams. Parents tell their children they can be anything they dream of being, if they are willing to work hard. Girls are told they can walk through doors formerly closed to their gender and be successful on that path. But logic and simple mathematics often disagree with these concepts. Women begin to loose their fertility around the age of 28, just about the time their male counterparts are getting into full swing in the race to be noticed and achieve professional success. The pressure of family choices becomes strong. Leaving the work force would be instant professional suicide. Is it any wonder that women in this emotional double-bind might chose to “fly over the cuckoo’s nest?”

Virginia Valian defined a concept for consideration of the many phenomena around women in the workplace. Gender schemas are non-conscious hypotheses that affect our expectations of men and women, our evaluations of their work, and their performance as professionals (Valian, 2000). Schemas are acquired in early childhood and continue throughout our adult lives. An example of gender schemas at work would be how men and women rank job characteristics. A study comparing salary, opportunity for advancement and intellectual challenge, reported by Valian, noted that more men rated salary at the top of this list than women and that more women rated intellectual challenge as the most important job characteristic. Women value a well-rounded life. This includes work, love, friendship, and other interests (Eccles, 1994). According to gender schemas, values are reinforced according to gender throughout our lives. Child care is at the heart of the female schema; both genders expect women to serve as the primary child caregiver. This issue is often reflected in decisions women make regarding their careers.

A mentor is defined as an experienced adult who befriends and guides a less experienced adult. A significant relationship exists between having a mentor and job satisfaction (Fagan, 2003). “New agents enter Extension with novel ideas and vision of improved programs. This abundant energy is quickly diminished as the new agent becomes “spread thin” among organizational, administrative and clientele expectations—not to mention personal, family, career, and professional obligations” (Zimmer & Smith, 1992). In addition, having a mentor was significantly related to being a mentor. In a profession where less than 12 percent of the concepts and principles as the United States model, this study’s potential has far reaching impacts on the profession (Seevers, et al., 1997). The 19th Amendment was passed in 1920, granting women the right to vote. It also served as a precedent for other legislation aimed at improving conditions for women. The Equal Pay Act of 1963 provided for equal pay for equal work without regard to sex (USDL Women’s Bureau, 2000). Women continue to struggle to climb both corporate and public ladders in the working world. What barriers remain to prevent their success? What supports exist to strengthen their quest?

In the 1991 strategic plan set forth by the Council on Diversity in Extension, emphasis was placed on strengthening diversity and pluralism in the Cooperative Extension Service. In determining the population for this study, the researchers found that less than twelve percent of all CES agents with agricultural responsibilities were women. Traditional roles of women are deeply ingrained in our society. Combined with the fact that Swanson counted 184 countries with similar extension systems in 1990, many of which are based on similar
population is female, the opportunity for same-gender mentors is limited. The benefits of any mentoring program are reduced if availability, proximity, accessibility and similarity of programs are missing from the mentor-protégé relationship (Thompson, Warnick & Cole, 2001).

Why can’t a woman be more like a man? Too few qualified women in the talent pool and blatant discrimination could once be blamed for discrepancies between men and women in the workplace. Today the reasons are subtle and far more complex. Blatant discrimination still exists however. “Forty years after the passage of Equal Pay Act, women earn 76 cents for every dollar men earn—up from 61 cents in 1960” (McGee, 2003). However, when “like” individuals mentor each other positive results occur. A recent study involving African-American female administrators in Extension revealed that a small group (six) of women reached out to each other to form a support group. They looked to each other for problem solving and programming collaborations and enjoyed individual successes because of their connection (Moore & Jones, 2001).

Subtlety within a patriarchal society is often hidden within the guise of gender expectations. Women’s expected role in life, within a patriarchal system, is to support and men’s is to draw on this support. This becomes the expected norm. Women are expected to be caring, polite, nice people with no expected reciprocation. It is simply what they are. These concepts greatly handicap women in the workplace. If a woman breaks out of this mold she is perceived as abnormal or over-emotional and not what is “expected” for the role she plays (Fletcher, 2001). The challenge facing women in non-traditional areas becomes one of learning to communicate/interact successfully in a patriarchal world.

**Purpose of the Study**

This study was designed to enhance the profile created from its sister study, *Profiling Female Agricultural Cooperative Extension Agents in the United States* (Foster & Seevors, 2004). The study sought to describe the unique challenges regarding personal lives, barriers unique to women in agricultural extension, and existing mentoring and support systems for women in the field. From comments gleaned from the questionnaires, this study focused on the following specific objectives introduced in the original study:

**Objective 1.** Identify perceived barriers/challenges experienced as a female agricultural extension agent.

**Objective 2.** Describe experiences and roles as both a mentor and protégé in agricultural extension.

**Methods and Procedures**

The population for the original study was a census ($N = 488$) of women with adult agricultural program responsibilities as county agents for Cooperative Extension within 49 of the 50 United States of America. One state declined to participate in the study. Selected questions found in the five-section instrument, created by the researchers, were used to address the selected objectives. Face and content validity were assessed using a panel of 23 women (experts) involved in Extension without adult agriculture responsibilities. Data were collected between April and June of 2003. The final usable response rate was 79.0% ($N = 386$). Appropriate research procedures were followed as the researchers utilized a five-section instrument for data collection.

Comments gleaned from open-ended questions and as unsolicited remarks were grouped and categories by similarity for reporting. Utilizing a feminist approach, the researchers categorized the data into general conceptual themes (Miles & Huberman, 1994). Two techniques were employed to create a qualitative design for this study. Historical research and selected survey statements combined to create a more in-depth picture of the profile of women in Extension with agricultural roles.

**Results and Implications**

The profile of the women completing the study reflected women with mean ages ranging between 36 to 45 years (30.5%), Caucasian (93.2%), married (68.1%) and possibly have children (54.7%). This professional woman spends an average of 30 hours per week on such activities as domestic housework, recreation, religion, children’s school, and other various interests.

These women reported salaries ranging from below $25K to above $75K. However, 64.1% were in the range of $30K to $49K. The
mean number of hours worked per week by the completers was 60. Sixty-nine percent of the respondents hold a master’s degree, 22% hold a bachelor’s and 9% hold Ph.D./Ed.D degrees.

Comments from a series of open-ended questions were grouped and reported by objective. In order to maintain authenticity of the original meanings, the comments recorded may include grammatical errors. In addition, any possible identifying factors, such as locations or names, were removed to maintain participant confidentiality.

Objective 1. Identify perceived barriers/challenges experienced as a female agricultural extension agent.

Perceived barriers. Participants were asked to identify any perceived barriers in their professional careers. Two general categories emerged, in addition a small, but definitive group also emerged noting positive experiences in lieu of any barriers.

Acceptance by male peers and clientele: This category received the most comments. Reflecting a definite concern permeating among the respondents: Continually having to prove their ability. The following comments reflect the perceptions of female agents across the country.

Often the problems/barriers are with those who don’t think you know what you are talking about because you are female.

I would say challenge—I’m in a small, rural county— as a woman, I really had to work hard to prove myself.

I was the first woman hired in ____ state to do 4-H ag [agriculture] work—and I interviewed in 5 counties before [I was] hired. 13 [Thirteen] states didn’t respond to my request for a job interview. Maybe things have changed.

Hardship due to social expectations of caring for home and family—also, many men and women assume county agents are men!! Want to deal with a man.

Most producers are men and expect everyone in my position to be male. They seem to take my advise [advice] with a grain of salt.

Differential treatment due to gender: Following acceptance by male peers and clientele, many women felt they were treated differently because of their gender. Specific instances of this behavior are noted in the following statements.

Learned to tolerate inappropriate behavior from male co-worker, and come to accept that our female supervisor was afraid, unskilled and unwilling to deal with his behavior—worse she threw the issue of dealing with his behavior back on me.

I think my salary would be higher if I were a male. I also get volunteered to do a lot of cooking and cleaning.

I believe I am paid less than men with the same responsibilities.

I have not gotten jobs where I was better qualified [due to gender]. I have had to put up with a sexist work climate in some jobs. Extension is very thorough with that attitude here.

I had to leave my position due to a gender-biased supervisor. In my current position, some male colleagues can be “unwelcoming”—nothing overt, just subtle putdowns.

Peers don’t seem to give same level of respect for subject matter knowledge. Clients are at times hesitant to talk to a woman.

Positive perceptions: Despite a much larger reporting of challenging issues, a number of the women included in the study felt they had only positive experiences. The statements below reflect that outlook at a ratio of 1 positive statement to 13 challenging ones.

It is not easy to be young and female in rural America in a male dominated profession. But, if anything, being a woman has helped me. Many people are curious to learn if I have anything interesting to share, then they realize I do.

No, actually as a female in a male-dominated field, I felt free to do different things with my job. I think I brought a different perspective to the program.

I thought I would experience some hardships with clients or colleagues, but all (or most) have been supportive and shown me great respect.

Greatest barrier. When asked to define the greatest barrier facing women in Extension with agricultural responsibilities, comments were grouped into three categories. Individual
Stereotypical roles: Stereotypical concepts/roles led the “Greatest barrier” category with 39% of the comments. The age-old practice of defining appropriate roles for men and women takes a different twist in the professional world as evidenced by the comments below.

Credibility achieved by [gleaned from] male audience—they don’t think a woman could possibly have it right—and will believe a man, with the same information!

Stereotypical roles are often reinforced by both genders.

Proving our skills are equal to or better than those of our male peers.

Getting the “good old boys” to take us seriously and trust the info [information] we supply.

The perception that women aren’t as “up” on their topic as the men agents. There are always those who think you know less and just ramble on about things you don’t have.

I think the general perception that “men do agriculture,” even in families where wives and daughters are actively involved, is the greatest barrier.

Gender bias: Deviating somewhat from stereotyping, responses in this category reflected blatant opposition to women in the field. In addition, an increasing number of responses noted inequitable pay situations.

It’s a man’s world” especially in Ag.

We are not equally paid or promoted like our male counter parts.

Working with male field men, processors, industry reps [representatives]; I have found them to be very male chauvinistic.

Not many women as mentors/still a bit of a man’s profession

Why are we willing to work a lot harder than men just so we can be treated equally, while bearing a lot of [the] weight of balancing a family and career and still have enough time for ourselves?

Sexism: I feel women must be smarter, better, faster, etc. than men.

Lack of exposure to career options—I never knew that extension was an option until later in life.

Salary, we should get the same.

Physical strength (or lack of) can sometimes be an inconvenience.

Neither my father or [nor] spouse supported my decision. There were many “old fellows” who wouldn’t give me the time of day when I started. I have experienced sexual harassment 3 times, but only pursued resolution once. I didn’t want to be labeled.

Balancing professional and personal: A definite level of frustration emerged as women tried to explain their effort to maintain professional standards and quality personal lives. This frustration is reflected in the following comments.

Figuring out how to balance work and family.

The necessary sacrifice of a personal life [to succeed in job].

Balancing family, work and other responsibilities. My observation is that women aged 40 and older in ag extension tend to be leaders and take on enormous work loads. This is less true for younger hires. This may be progress....

The hours—women many times still have the “traditional” role in the home. The combination can be overwhelming—my house is a disaster and I seldom cook.

The 24/7 time commitment that is sometimes expected of extension staff is not family friendly, many women who want to have an ext.[extension] career plus a family will feel the strain and of course most will (and rightfully so) choose family.

Sacrifices made. Participants were asked if they felt they had made sacrifices in order to succeed in their chosen field. The majority of participants felt they had sacrificed some aspect of their personal lives or well-being. Overwhelmingly the grouping of family or personal sacrifice comments led the response for this question.

Family and personal: Over 90% of the 320 comments in this area reflected family and personal sacrifice; primarily revolving around children, or the decision not to have children.

Time away from home resulted in more child care required from spouse...resulting in divorce.
Too focused on work—do not take enough time for family.

I feel that in order to maintain family as a priority, I have had to pass on opportunities to go higher in Extension due to expectations of working many nights and weekends without compensation.

Because Extension is not a 40 hour a week job, I have spent less time with my husband and friends.

Put off starting a family [due to work demands] —less kids

[I sacrificed] My first marriage—my ex-husband was not supportive of my career choice.

The sacrifice of leaving children with others at a very young age just to get back to work and leaving them at night to serve the public. Day and night [on call] and every holiday.

My children were in day care. Often I now have evening programs that take me away from them and their activities.

My biggest sacrifice would be not spending enough time with my family. I spend lots of time with other children and families but not my own.

I am approaching 40 years old and still don’t have children. It is hard to make that decision when I am still on “limited appointment” (we serve 6 years, 2-3 year terms before getting an indefinite appointment).

I sacrifice evenings and weekend family time to fulfill my responsibilities and/or to attend in-service trainings.

I have no children. I am married, but [I] decided “you cannot have it all.”

Money: Acknowledging this may not be related to gender, participants expressed concern over the investment capital in securing adequate credentials to serve in the Extension sector.

**Objective 2.** Describe experiences and roles as both a mentor and protégé in agricultural extension.

**Encouragement.** Where men are taught from birth to expect support, women often feel that same support is a gift instead of a reasonable expectation (Johnson, 1997). The following comments reflect the powerful impact of having or not having a support system.

Value of female encouragement: Participants noted that understanding and support from women in similar roles was invaluable—and also rare.

Because there are so few female extension agents it is necessary for us [the females] to encourage one another.

It [female encouragement] is a vital part of survival.

I was the first female to be hired in ______, the support came from males. It was limited.

In my early years there was another female specialist. We shared ideas and feelings a lot. The male attitude has changed greatly in the past 20 years!
It is rare to have women in ag. I did have an extension agent in natural resources give me a lot of help and advice, but not in ag. Received excellent support from team of female agents based in a nearby city. There are six female ag-related agents in my state. We stay in touch. Rarely, few women in my field. Sought advice, mentoring and guidance from women I respect. It helps to discuss problems and situations with other women in the same line of work. Bounce ideas off them and general support. When having difficulty with co-workers to get advice [from other women].
I was the first woman in _____ to become an ag educator, therefore most of the others have utilized my experience(s). There were no others to ask [when I started out]…one specialist did provide help during the first few years. In the beginning, now it seems kind of fragmented-each is trying to prove herself. I was mentored by a female agent and her advice is invaluable. I am the longest tenured woman in my state’s extension service. No one there to mentor me [when I started].

Supporting others: Even when acknowledging few mentors of their own, women in the study often realized the need for this type of support and tried to provide it for the next generation or their peers.
I make a conscious effort to be supportive of our female agents—to [support] them directly and speaking well of their strengths to others. I really think it is important to be as positive as possible.

Discouragement. Perhaps more powerful than the reflections of positive support, this category seemed to draw well-thought out responses. The question, have you discouraged others, was especially taken with gravity by the participants.

From other women: A sad note pervaded these responses when realizing not everyone of their own gender viewed the participants as pioneers. The concept of gender roles continued to surface with these comments.

I have been discouraged by women that I work with such as farmer’s wives or other FACS [family and consumer science] agents. When I got here, I heard about inequalities [gender]…they were telling the truth.
New agents (female) sometimes are very competitive with other female agents rather than being supportive or collegial. I was told via an internet list serve by a woman specialist that I should get used to/accept the male/female & research/extension hierarchy in universities.

From male colleagues: In contrast to the comments from women, discouragement from men seemed to be expected and therefore not as damaging to the psyche.
I’ve been told that I need to not challenge the system [Extension] and play my female role. Also, I have received inappropriate comments [from male colleagues] in front of producers.

By the system: Another area of disappointment reflected by participants was the lack of support from the system. Unequal pay, lack of role models and time commitment expectations create a challenging environment to succeed in. No real support for women. Not directly, sometimes indirectly by seeing others’ [women’s] frustration. Only because money [salary] is not equitable. Discouraged by demands [of job] and lack of resources and time to do more. Too much time, too little pay

Discouraged others: Responses in this category reflected growing concerns with economic cutbacks and the ability for the system to remain operational, rather than issues connected to gender. Overall, the gender related concerns revolved around family time issues. Only when the budget was falling apart and they needed to think of themselves before clientele. Not on purpose. Have tried to encourage them to stay. There is no money and probably no future for Extension. In these changing times, it’s hard to encourage ANYONE to enter Extension. I’ve
encouraged them to keep their option open in terms of schooling.

I encouraged one woman to get another job [in order to have time] for her children. [A job] that didn’t take as many evenings & weekends.

Would you do it again? “Today’s working woman is faced with maintaining a traditional family role and developing a new niche for her role as career professional. Whatever route chosen, there will always be sacrifices” (Foster, 2001). When asked if they would choose this route again, participants broke into two distinct camps.

No regrets: Love of the job and the satisfaction it brings is evident through the following statements.

It is well worth the sacrifice made to be able to do what you love!

No family [to not have children] was a choice I made early in life. I love my work. My achievements have bettered our quality of life, but I would like to be compensated for the hours I work.

I don’t have any regrets. Family always came first—just not a lot of built up leave until now.

I’m able to support my family with needed benefits of insurances, etc.

I probably would. I don’t think of them sacrifices; they’re just the drawback of pursuing my work (watershed/restoration).

Time will tell; I would not quit my job at this point.

I hope my pioneer efforts would pave a smoother road for young women in the future. It has been difficult at times.

I would make sacrifices for my job simply because I enjoy it. I have a wonderful job and I’m very fortunate that it brings needed benefits for my family.

Probably not: Reflection of the price paid and the lack of family time that cannot be retrieved or created on another plain is evidenced by these participants.

I am resigning from Extension, though I love the work, in order to have more time to do the things I want to and not work nights and weekends.

My children have spent large amounts of time away from home (babysitter) and Mom because of my job. Is it worth it? I’m not sure. Pros and Cons to both sides.

I work many nights and weekends as it is and I would choose my family again at the expense of moving up and working more nights and weekends.

Not valued enough [in my job] to make the sacrifices seem worthwhile.

I would have found a way to make grad school pay and taken other career paths if I had known I would be a spinster.

My daughter is now in college. I wish that I had spent more time with her and less time with clientele.

If I had gone into teaching I’d be making more money, working less [fewer] hours and having the summer with my kids.

My dedication to Extension required moving numerous times during my career, which disrupted personal relationships. I married very late in life and never had children, though this was not a conscious choice. I regret having made my work such a high priority.

If I won the lottery, I’d be out the door in a heartbeat.

Would you encourage other women to follow this path? To encourage others to follow our paths speaks volumes about our levels of satisfaction with our situations. Quantitative findings from the sister study of this qualitative evaluation reported almost 85% of the participants as satisfied or very satisfied with their current position. However, specific comments in the open-ended section reflect approximately 50% of the respondents would encourage others to follow this path. The remaining respondents were either in a quandary or definitely determined not to encourage others along this path.

Yes, definitely: These participants were very positive in their outlook and worked to remain positive and to encourage others to reach similar goals.

If they enjoy working in agriculture they should go for their dreams. Be proud of who they [women] are.

Yes, even if they end up in the office—good benefits and good work environment. I love it despite the occasional biases. Extension is one of the few professions that really makes you feel part of a family.
I think that it is a wonderful job and that women can make a great impact. I see more and more in our state. It makes things easier for me and all of us [in the profession].

I think women have a lot to offer the field of agriculture extension and now there are many examples of women excelling in a wide-range of fields. I think women can do absolutely anything they set their minds to.

It depends: Another group of participants professed enjoying their work, but had serious concerns over limited opportunities for advancement and the serious toll taken on family time.

If they enjoy ag. I see no reason to discourage anyone; however, I would encourage them to take other classes that would prepare them for horticulture, nursery, community development, etc.

If they are single it is enjoyable, challenging work, but it [the job] will take all the time you let it. I can’t see being an ag extension educator and the kind of mother one needs to be.

Not at this time: These respondents voiced great concern over the tenuous budgets of Extension. This concern, coupled with several other factors, led them to feel unable to encourage others to enter the profession.

Until we are paid our worth and treated with respect there’s no need to encourage anyone to go into this discipline.

CE [Cooperative Extension] is in danger of becoming extinct. Ag education issues are becoming secondary to less research-based sustainability issues.

Jobs in ag are few; the money is there but only for a select few. Opportunities are better in other fields for money and advancement. I can no longer participate in school job fairs with a good conscience.

Not in the current budget and political climate. At least not in this state. I have a feeling that Extension’s days are numbered here.

These comments, although collected and sorted into tidy categories, return over and over again to three primary themes. Concern over personal time and family sacrifice re-surfaces in every main category. Likewise, concern over equitable salaries is voiced throughout the comment sections. Although the participants profess to be satisfied with their work, there are still great concerns regarding issues of respect and acceptance by male peers and clientele. If Extension truly values the diversity brought by women with agricultural responsibilities, new and more intense methods for mentoring and developing their skills must be developed. In addition, the researchers suggest ongoing studies be employed to track both the success and longevity of women in this sector and the number of new female recruits nationwide.

Educational Value/Practical Importance

This study reported on the perceptions and reflections of women agricultural extension agents. Remembering this study was a census, the trends and factors reported here carry even more startling weight. According to the United Nations, women have still not achieved equality with men in any country in the world. Realizing the United States’ model for extension education is utilized in countries around the world, the need to seek out and understand the perceptions of women pioneers in the field becomes both powerful and urgent. If we value the diversity of gender we must continue to seek the reasons for lack of acceptance and innovative ways for families and careers to mesh in a positive manner. The future of the profession depends on it. This study has provided valuable insight into the reality of women extension agents with agricultural responsibilities.

References


State Extension Service Directors’ and Administrators’ Interests in International Opportunities

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Abstract

The purpose of this study was to examine the international interests of state Extension service directors and administrators. Seventy-seven people (92.8%) out of 83 respondents were investigated in this study. All participants were involved in some type of international activities. Sixty-seven respondents have incorporated an international dimension into their Extension efforts in the past.

Sixty-one respondents (79.4%) expressed moderate and high levels of interest in incorporating an international dimension into their future Extension efforts. Forty-four partakers (57%) were interested in participating in an out-of-country assignment. The majority of the participants have skills and experiences that would enhance international programming activities, including program planning, supervision, facilitation, and budget development/administration. Thirty-one participants (40.3) showed fair or high levels of language skills other than English. However, the major barriers that prevented participants from incorporating an international dimension into their future Extension efforts were lack of financial support, time, not a program priority, and lack of language skills. The barriers that prevented participants from participating in out-of-country assignments were lack of financial support, time, language skills, and family commitment. As a result, reducing the barriers and increasing motives are essential if future international involvement is to improve.

Keywords: Extension, directors, programs, barriers, experience, interests, future programming

Introduction

As the world’s population continues to grow with limited agricultural resources, enhancement of producers’ skills across the world is needed to support improvements in global food production and security. One way of motivating farmers to be more productive and energetic in producing sufficient food to meet their needs is through Cooperative Extension programs. Therefore, as part of agricultural Extension programs and agricultural development, state Extension service directors and administrators have responsibilities to embrace a global philosophy, while at the same time, function in their local state environment. Ludwig (1999) points out that by 2015, the expected population growth rate will exceed the current ability of agriculture to sustain it.
Therefore, Extension needs to respond to global concerns facing their constituents. Globalization of the American economy greatly impacts American agriculture, agribusinesses, and rural communities. Agricultural Extension programs are designed to improve the development of rural communities and the agricultural sector. These programs help producers and their families to be better off economically and socially. There is no doubt about the importance of agricultural Extension and its role in improving global food production and security. With limited agricultural resources and the growth of the world’s population, increasing awareness of the global nature of the agricultural industry is needed. High technology of the late 20th century has made participation in overseas assignments possible and easy. However, it is still a big challenge for state Extension Service directors and administrators to enhance and improve producers’ skills through Extension programs in and out of country. Directors’ and administrators’ international understanding is based on their past involvement in international agricultural Extension programs.

**Theoretical Framework**

**International Programs**

Internationalization of the Extension system is seen as the “incorporation of an international dimension, content and considerations into Extension teaching, research and service” (Ludwig, 1995) (p. 31). Internationalization entails developing educational activities that provide a fundamental understanding of global interdependence among market forces. These goals can be accomplished by developing a strong support staff and reward system, Ludwig (1995). Ludwig also suggested that what is needed to successfully establish international agricultural programs is to determine what characteristics can be identified so an educational institution can begin to create the necessary change to achieve this goal. Ludwig and Barrick (1996) describe the characteristics of an international Extension system and identify five crucial points: (a) Clientele develop a fundamental understanding of global and national interdependence; (b) Extension faculty/agents recognize the relationship between basic international issues and the Extension mission; (c) Extension educational programs within the U.S. stress the impact of international economic forces on agricultural markets; (d) Extension educators incorporate international perspectives into ongoing activities; and (e) personnel evaluation systems recognize international efforts (p. 45).

Kelsey and Dormody (1995) carried out a descriptive survey to determine faculty motives and perceived barriers for participating in international activities on the College of Agriculture and Home Economics faculty at the New Mexico State University in 1994. The results show that those faculty members who were more “motivated to learn, teach, achieve, help others, and be with people” (p. 55) were more interested in participating in international activities. Barriers were lack of reward, support, worry over tenure, funding, language skills, and family concerns. Kelsey and Dormody believe that the answer to increased international activities can be accomplished by “providing faculty with fulfilling and enjoyable learning experiences with opportunities to make a positive difference for people through teaching and/or development work” (p. 55). They suggest that international activities of one month’s duration would be ideal, language training be instituted where necessary, and administrator support and funding would increase the positive prospects needed for international agricultural to become a reality.

Ludwig’s study (1999) involved 823 Extension professionals in a mid-western state college. She found:

1. Sixty-five percent (465 responses) were interested in incorporating an international dimension into Extension efforts.
2. Forty-four percent had an interest in out-of-country assignment.
3. Three perceived barriers to incorporating global dimensions into future Extension programming were: (a) lack of time 40%; (b) uncertainty that this would be a program priority (35%); and (c) lack of experience (28%).
4. Perceived barriers to participation in out-of-country assignment were: (a) Family commitments (43%), (b) lack of time (39%); (c) not a programming priority (25%); (d) lack of financial support (25%); and (e) language skills (24%).
5. Educational level of respondents was 87% with a college degree and 60% have advanced degrees.
Barriers

Major barriers which stand in the way of implementation of globalization include limited financial support, lack of time and lack of language skills, and not a program priority. For directors, but not Extension personnel, lack of clientele support was seen as impacting the progress of implementation. Ludwig suggests that directors and program leaders need to secure funds and provide a vision that shows how globalization can contribute to across cultural competency, economic advantage in the global market and protection of the environment, (Ludwig, 2001).

Acker and Scanes (2000) point out that despite the fact that 30% of today’s agricultural products are exported, it is necessary and critical for the U.S. to provide funds for research to remain competitive, in fact funding has actually decreased in constant dollars. Another problem is the decline in support for the 16 International Research Centers of the Consultative Group on International Agriculture Research. This research group played a major role in the green revolution and provided the research that benefited wheat and rice yields.

On the other hand, Bruce, Podemski and Anderson, (1991) mentioned that the resistance comes from mainstream faculties who have not undertaken the task of internationalizing curriculum or supporting teaching and researching and constitutes a major problem. Faculties either do not recognize the need for the global perspective because they, themselves, have had little experience or preparation in international programs or else they question the feasibility of adding another accentuation to an overcrowded curriculum.

A study reported by Place, Jacob, Andrews and Cargo (2001) explores the benefits of international assignments. Of the number of participants who were active in the Polish-American Extension Project (PAEP), those who served one or more six-month assignments were the subjects of the research. Because participants were engaged in a voluntary selfless act and were held in high regard by their colleagues, the findings show the international experience impacted positively on self-perception. The most important positive impact was that when colleagues and clientele were aware of the assignment, the professional experienced a more positive impact. Visibility was similar to awareness as was extent of work communication. On the reverse side, lack of communication produced negative outcomes. These concepts need to be shared with Extension professionals preparing for foreign assignment through pre-training, reinforcement and debriefing (Place, et al; 2001).

A great problem with cooperative Extension is keeping its constituents up to date about changes in the global economy. The problem may stem from Extension training being inadequate when it comes to international forces and events and their effect on U.S. agriculture. Rosson and Sanders (1991) study showed 75% of the participants who were Extension educators in the south were unable to develop global programs or understand an analysis framework of international issues.

On the one hand, the implications were the need for a strong international program. On the other hand, “confidence in resources, Extension abilities and constituent acceptance of international programming was weak” (Rosson & Sanders, 1991).

A second survey (N = 77) was conducted by Oklahoma State University to determine the needs of the critical research and training, the survey also questioned Extension personnel in the south. The results showed that 80% said more international affairs programming was needed; 94% supported programs on global competitiveness and 69% wanted international issues to be integrated into existing programs (Rosson & Sanders, 1991). However, several needs were identified, for instance:

1. Data on crops and livestock important to international competition
2. Identification of the impact of global trade on state economies
3. Information on what and how much to grow
4. Educational materials for non-economist agricultural professionals

The non-economists were seen as an important group to insure overall success of the program. The materials being used must be developed for the non-economist to insure the maximum use of resource materials (Rosson & Sanders, 1991).

Solutions

As improved travel and communications become more global, thinking of the agricultural sector becoming global is a must. It must begin
to address the issue of growing international interdependence (McCracken, 1995).

At the present time, international components for agricultural colleges are central to the future. Many students seek agricultural careers overseas, and even here on the home front with international companies that operate in America. This perspective is not new, but its concept is not common on many colleges and universities. Now, as never before, sustainable economic development and the quality of life are dependent on the quality of research that is available. With collaboration and training future, scientific work will be quantitatively and qualitatively superior to a singular one-dimension education. In research and science, this quality of sharing will aid developing countries and foster strong co-relationships with overseas colleagues. Overseas partners may also have a great deal to offer the U.S., such as techniques, facilities and equipment. Faculty should be encouraged to join ranks with faculty overseas during sabbaticals or faculty improvement leaves, get involved in working for short periods of time in other laboratories, and hosting overseas scientists (Acker & Scanes, 1998).

To provide direction for this research, the following conceptual design was developed and served as a guide for the researchers. The study would examine the background of extension directors and administrators in regards to specific demographic factors related to their occupation. This would be coupled with their opinions regarding several dimensions of international experiences and activities as revealed by the review of literature. The final result would be a description of interest towards international experiences by extension directors and administrators.

**Conceptual Framework**

<table>
<thead>
<tr>
<th>Background of Extension Directors and Administrators.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Degrees and Majors.</td>
</tr>
<tr>
<td>2. Where raised.</td>
</tr>
<tr>
<td>3. Universities where worked.</td>
</tr>
<tr>
<td>4. Length of employment.</td>
</tr>
<tr>
<td>5. Institutional emphasis on International programs.</td>
</tr>
<tr>
<td>6. Experience and language skills.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Directors and Administrators International Interest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The current level of involvement in international programming activities.</td>
</tr>
<tr>
<td>2. The level of interest in incorporating international efforts into future Extension programs.</td>
</tr>
<tr>
<td>3. The interest in out-of-country assignments.</td>
</tr>
<tr>
<td>4. Perceived barriers, including international efforts for future Extension programs.</td>
</tr>
<tr>
<td>5. Perceived barriers to participation in an out-of-country assignment.</td>
</tr>
<tr>
<td>6. Competencies enhancing international programming activities.</td>
</tr>
</tbody>
</table>

In global agriculture, colleges need to reach out with their programs to improve the human condition. International trade is a viable tool for improving standards of living. It is an economic engine as is the sale of U.S. technology and the ability to attract foreign companies to America. The best method for doing this is to develop strong links between international research centers and colleges. The GASEPA has endorsed a set of goals for globalizing college of agriculture programs for the 21st century, providing directions to reach this important goal. Their philosophy is that research, Extension, and teaching should include a strong global curriculum (Acker & Scanes, 1998). The conceptual framework, gleaned from the review of literature, provided guidance and direction for the study.
Purpose

The purpose of the study was to identify the level of interest of Extension directors and administrators related to international opportunities to determine:

1. The current level of involvement in international programming activities.
2. The level of interest in incorporating international efforts into future Extension programs.
3. The interest in out-of-country assignments.
4. Perceived barriers, including international efforts for future Extension programs.
5. Perceived barriers to participation in an out-of-country assignment.
6. Competencies enhancing international programming activities.

Methods

This study was a census of all eighty-three Extension directors and administrators nationwide. Names of all participants were gathered from the directory of state Extension service directors and administrators from the United States Department of Agriculture website (USDA, 2002). A modified instrument (Knight, et al. 1999) used to investigate the interest of Arizona Extension personnel in participating in international Extension programs was used.

Results

The purpose of this study was to examine international interests of state Extension service directors and administrators. Seventy-seven people (92.8%) out of 83 respondents were investigated in this study. All participants were involved in some type of international activities. Sixty-seven respondents have incorporated an international dimension into their Extension efforts in the past.

Objective one was to determine the level of involvement in international Extension programs. All the participants were involved in some type of international activity. Activities in which the largest percentage of participants took part were in hosting an international visitor (85.7%), traveled abroad on vacation (67.5%), participated in an international development project abroad (54.5%), advised an international student and communicated by e-mail with an international colleague in another country (50.6%) (Table 1).

Table 1

Involvement in International Activities (N = 77)

<table>
<thead>
<tr>
<th>Activities</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traveled abroad on vacation</td>
<td>66</td>
<td>85.7</td>
</tr>
<tr>
<td>Participated in an international development project abroad</td>
<td>52</td>
<td>67.5</td>
</tr>
<tr>
<td>Advised an international student</td>
<td>42</td>
<td>54.5</td>
</tr>
<tr>
<td>Communicated by e-mail with an int’l colleague in another country</td>
<td>39</td>
<td>50.6</td>
</tr>
<tr>
<td>Participated in an international study tour abroad</td>
<td>35</td>
<td>45.5</td>
</tr>
<tr>
<td>Worked abroad as a short term consultant</td>
<td>34</td>
<td>44.2</td>
</tr>
<tr>
<td>Served as a communication link between people from different countries</td>
<td>28</td>
<td>36.4</td>
</tr>
<tr>
<td>Involved clientele in an international activity</td>
<td>27</td>
<td>35.1</td>
</tr>
<tr>
<td>Developed curriculum materials incorporating int’l issues</td>
<td>24</td>
<td>31.2</td>
</tr>
<tr>
<td>Subscribed to an international publication</td>
<td>23</td>
<td>29.9</td>
</tr>
<tr>
<td>Created an Extension program based on an int’l issue</td>
<td>21</td>
<td>27.3</td>
</tr>
<tr>
<td>Lived abroad</td>
<td>20</td>
<td>26.0</td>
</tr>
<tr>
<td>Joined an international organization in your field</td>
<td>19</td>
<td>24.7</td>
</tr>
<tr>
<td>Taught at an overseas institution</td>
<td>17</td>
<td>22.1</td>
</tr>
<tr>
<td>Conducted an international research project</td>
<td>16</td>
<td>20.8</td>
</tr>
<tr>
<td>Been involved in a &quot;sister-city&quot; program</td>
<td>11</td>
<td>14.3</td>
</tr>
<tr>
<td>Traveled abroad as a student</td>
<td>11</td>
<td>14.3</td>
</tr>
<tr>
<td>Served in the military abroad</td>
<td>7</td>
<td>9.1</td>
</tr>
<tr>
<td>Volunteered abroad</td>
<td>5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% due to multiple responses.
As part of the involvement, participants were asked to indicate whether they have incorporated an international dimension into their Extension efforts. The result showed that 49 respondents (63.6%) of the total partakers have incorporated such an effort in the past. Nine participants (11.7%) expressed that they were currently incorporating an international dimension into their Extension efforts. The rest of the participants (n = 19) (24.7%) replied that they have never incorporated an international dimension (Table 2).

Table 2

<table>
<thead>
<tr>
<th>Involvement</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, I am not incorporating an international dimension</td>
<td>49</td>
<td>63.6</td>
</tr>
<tr>
<td>Not currently, but I have in the past</td>
<td>19</td>
<td>24.7</td>
</tr>
<tr>
<td>Currently incorporating an international dimension</td>
<td>9</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Objective two: Participants’ interest in incorporating an international dimension into their future Extension efforts. The participants’ responses (n = 76) showed variation in the level of interest in this activity. Thirty-one respondents (40.3%) were moderately interested. Thirty respondents (39.0%) showed a high level of interest in the effort. Fourteen participants (18.2%) indicated slight interest. Only one person was not interested (1.3%). (Table 3)

Table 3

<table>
<thead>
<tr>
<th>Interest in Incorporating an International Dimension into Any of Their Future Extension Efforts (N = 77)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate interest</td>
<td>31</td>
<td>40.2</td>
</tr>
<tr>
<td>High interest</td>
<td>30</td>
<td>39.0</td>
</tr>
<tr>
<td>Slight interest</td>
<td>14</td>
<td>18.1</td>
</tr>
<tr>
<td>Not interested</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>No-response</td>
<td>1</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Objective three: Level of interest in an out-of-country assignment and the length of assignment. Of the participants (N = 77), 27 (35.1%) expressed an interest in participating in international activities. Seventeen participants (22.1%) were interested if the Extension was supportive, and 28 respondents (36.4%) were not interested in such a program. The rest of the participants (n = 5) (6.5%) have never considered participating out-of-country (Table 4).

Table 4

<table>
<thead>
<tr>
<th>Interest in Out-of-country Assignments (N = 77)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not interested</td>
<td>28</td>
<td>36.4</td>
</tr>
<tr>
<td>Yes, but not at this time</td>
<td>27</td>
<td>35.1</td>
</tr>
<tr>
<td>Yes, if Extension is supportive</td>
<td>17</td>
<td>22.1</td>
</tr>
<tr>
<td>I have never considered this possibility</td>
<td>5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Regarding the length of assignment preferred in an out-of-country task, of the participants (N = 77), 39 (50.6%) showed a high level of interest in a short-term assignment. Thirteen respondents (16.9%) had a low level of interest in intermediate assignment. Five participants (6.5%) expressed an interest in a long-term assignment. In contrast, 28 participants (36.4%) were not interested in taking part in an international program (Table 5).

Table 5

<table>
<thead>
<tr>
<th>Length of Assignment (N = 77)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term (less than three months)</td>
<td>39</td>
<td>50.6</td>
</tr>
<tr>
<td>Not interested</td>
<td>28</td>
<td>36.4</td>
</tr>
<tr>
<td>Intermediate (3-12 months)</td>
<td>13</td>
<td>16.9</td>
</tr>
<tr>
<td>Long-term (over 12 months)</td>
<td>5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Objective four: Barriers that prevent participants from incorporating an international dimension into their future Extension efforts. Forty-eight respondents (62.3%) expressed that the biggest barrier preventing them from incorporating an international assignment was lack of financial support. In addition, 40 respondents (51.9%) pointed out that lack of time was another barrier that stopped them from incorporating an international assignment. A third barrier was that 25 respondents (32.5%) felt that incorporating an international assignment was not a programming priority. Lack of language skills was the final major barrier for 21 respondents (27.3%). On the other hand, participants were not concerned about the following as barriers: cultural barriers (n = 5)
(6.5%), lack of support from colleagues (n = 3) (3.9%), lack of support from administration and not rewarded in annual performance appraisals (n = 2) (2.6%), finally, fear of negative career impacts and lack of teaching materials (n = 1) (1.3%) (Table 6).

Table 6

| Directors and Administrators Perceived Barriers to Including International Efforts into Future Extension Programs (N = 77) |
|---|---|
| Barriers | n | % |
| Lack of Financial Support | 48 | 62.3 |
| Lack of Time | 40 | 51.9 |
| Not a Programming Priority | 25 | 32.5 |
| Language Skills | 21 | 27.3 |
| Lack of Support from Local Clientele | 13 | 16.9 |
| Lack of Expertise | 9 | 11.7 |
| Family Commitments | 8 | 10.4 |
| Cultural Barriers | 5 | 6.5 |
| Lack of In-service Training | 4 | 5.2 |
| Lack of Support from Colleagues | 3 | 3.9 |
| Lack of Support from Administration | 2 | 2.6 |
| Not Rewarded in Annual Performance Appraisals | 2 | 2.6 |
| Not Recognized in Promotion Criteria | 2 | 2.6 |
| Fear of Negative Career Impacts | 1 | 1.3 |
| Not Interested in Teaching Materials | 1 | 1.3 |
| Not Interested | 0 | 0 |

Percentage exceeds 100% due to multiple responses.

Objective five: Barriers that prevent participants from participating in an out-of-country assignment. Participants’ responses (N = 77) showed the following to be major barriers that prevented them from participating in an out-of-country assignment: lack of time (n = 52) (67.5%), lack of financial support (n = 26) (33.8%), language skills (n = 23) (29.9%), and family commitments (n = 21) (27.3%). Conversely, these barriers were not highly recognized: promotion criteria (n = 1) (1.3%), cultural barriers (n = 2) (2.6%), and lack of support from colleagues (n = 2) (2.6%) (Table 7).

Table 7

| Directors and Administrators Perceived Barriers to Participation in an Out-of-country Assignment (N = 77) |
|---|---|
| Barriers | n | % |
| Lack of Time | 52 | 67.5 |
| Lack of Financial Support | 26 | 33.8 |
| Language Skills | 23 | 29.9 |
| Family Commitments | 21 | 27.3 |
| Not a Programming Priority | 14 | 18.2 |
| Lack of Expertise | 11 | 14.3 |
| Not Interested in Local Clientele | 7 | 9.1 |
| Lack of Support from Local Clientele | 6 | 7.8 |
| Lack of Support from Administration | 5 | 6.5 |
| Lack of Support from Colleagues | 2 | 2.6 |
| Fear of Negative Career Impacts | 2 | 2.6 |
| Cultural Barriers | 2 | 2.6 |
| Not Recognized in Promotion Criteria | 1 | 1.3 |
| Not Interested in Annual Performance Appraisals | 0 | 0 |
| Lack of Teaching Materials | 0 | 0 |
| Lack of In-service Training | 0 | 0 |

Percentage exceeds 100% due to multiple responses.

Objective six: Skills and experience of participants including language skills and the expertise to teach others. The skills and experiences of the participants (N = 77) that would enhance international programming activities included program planning (n = 55) (71.4%), supervision (n = 51) (66.2%), facilitation (n = 50) (64.9%), and budget development and administration (n = 47) (61%). The areas that participants did not support were: TV, radio and media work (n = 5) (6.5%), and computer-assisted instruction (n = 6) (7.8%). Participants (n = 31) (40.3%) showed fair or higher level of foreign language skills (Table 8).
Table 8

Directors and Administrators Experience that would Enhance International Programming Activities (N = 77)

<table>
<thead>
<tr>
<th>Skills and Experience</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Planning</td>
<td>55</td>
<td>71.4</td>
</tr>
<tr>
<td>Supervision</td>
<td>51</td>
<td>66.2</td>
</tr>
<tr>
<td>Facilitation</td>
<td>50</td>
<td>64.9</td>
</tr>
<tr>
<td>Budget</td>
<td>47</td>
<td>61.0</td>
</tr>
<tr>
<td>Development/Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committee Development</td>
<td>42</td>
<td>54.5</td>
</tr>
<tr>
<td>Needs Assessment</td>
<td>42</td>
<td>54.5</td>
</tr>
<tr>
<td>Development of Teams</td>
<td>42</td>
<td>54.5</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>41</td>
<td>53.2</td>
</tr>
<tr>
<td>Evaluation</td>
<td>35</td>
<td>45.5</td>
</tr>
<tr>
<td>Volunteer Training</td>
<td>32</td>
<td>41.6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>31</td>
<td>40.3</td>
</tr>
<tr>
<td>Conflict Management</td>
<td>21</td>
<td>27.3</td>
</tr>
<tr>
<td>Use of Experimental Learning Techniques</td>
<td>11</td>
<td>14.3</td>
</tr>
<tr>
<td>Computer-assisted Instruction</td>
<td>6</td>
<td>7.8</td>
</tr>
<tr>
<td>TV, Radio and Media Work</td>
<td>5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% due to multiple responses.

Summary

A majority of the participants were involved in some type of international activities as they hosted an international visitor, traveled abroad as a student, participated in an international development project abroad, advised an international student or communicated by e-mail with an international colleague in another country. As part of their involvement, a great number of participants showed that they had incorporated an international dimension into their Extension efforts in the past. Also, participants showed a moderate and a high level of interest in incorporating an international dimension into their future Extension efforts. Moreover, a great proportion of respondents expressed a high level of interest in short-term assignments (less than three months).

The findings of this study also showed that most of the respondents have skills and experiences that would enhance international programming activities such as program planning, facilitation, supervision, and budget development and administration. In terms of language skills, some respondents showed fair or higher skills of foreign languages. Finally, barriers such as lack of time, lack of financial support, lack of language skills, and family commitments were consistent with the finding of Kelsey and Dormody (1995), Ludwig (1997), and Knight, et al. (2000).

Educational Importance/Implications/Application

Motivating State Extension Service directors and administrators toward more international activities could be through recognitions and rewards. By motivating directors and administrators, support for faculty and agents who are involved in international work should improve. The findings of this study suggest that directors and administrators could be funded and assigned in international activities as part of their jobs to make a significant program impact. Finally, language training could be provided as well.

Efforts to increase international activities among directors and administrators could focus on motivating them and reducing barriers. Further research should be considered to determine other appropriate ways to reduce barriers to international assignments. The relationship between language skills as a major barrier and participation in international activities should also be researched.

On the part of the institutions, state and county Extension should be better prepared to define the expectations and roles of institutions; provide institutional development for international interaction; increase the number of international assignments; and utilize Extension expertise more fully.

References


Self-directed Learning Readiness of Extension Clientele in Doctor Arroyo, Nuevo Leon, Mexico

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Outstanding Graduate Student Paper presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Abstract
The purpose of this study was to describe the level of self-directedness of selected extension clienteles in Doctor Arroyo, Nuevo Leon, Mexico. The population for this study included 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico. Data were collected through hand delivered questionnaires. Overall, research participants mean Self-directed Learning Readiness Scores (SDLRS) were similar to the worldwide adult mean. Participants’ individual scores, however, tended to be either below average or above average. An implication exists that both pedagogically and andragogically based teaching methods need to be used by agricultural and extension educators to educate this particular clientele group.

Keywords: Self-directed learning, Mexico, extension, rural communities, groups, innovation

Acknowledgments: This research was supported by a grant from the Texas A&M University Center for Grazinglands and Ranch Management, which is funded by the Association Liaison Office for University Cooperation in Development through the U.S. Agency for International Development.
Introduction

Agricultural and extension educators rely on a variety of teaching methods to educate their clientele. Worldwide, the implementation of distance education, through various methods, is changing education. More learning in the future will be based on self-directed learning skills and activities in formal and non-formal educational settings. Alexander and Murphy (1998) identified one of the five learner-centered principles in learning as follows: “learning is as much a socially shared undertaking as it is an individually constructed enterprise” (p.39). Kroma (2003) found that for farmers in central Ghana, social learning was a critical component to innovative farming practices. Wingenbach, et al. (2003) noted that social learning can be enhanced for agricultural education undergraduate students through out-of-country experiential learning situations. Rola, Jamias, and Zuizon (2002) stated that for experiential learning experiences to be effective they must be developed around the social context in which they are being carried out.

There is a growing trend of social and technological change and innovation. Knowledge and information are regarded as global public resources, valuable assets, power, and the means to enhance the learning environment and support experience on which we can build a better world (World Science Forum, 2003). Cross (1981) suggested learning continues throughout life, as each person becomes more capable of directing his own learning. Learning takes place constantly in a knowledge and information-based society. Adult educators, such as extension personnel, can be perceived as change agents, as they aid adults in becoming lifelong learners and reaching their educational goals (Lane, 2004). Lindner, Dooley, and Wingenbach (2003) noted that learning strategy skills was a key competency for extension educators.

Self-directed approaches to teaching and learning are consistent with the goals of andragogy and result in deeper and more meaningful learning (Knowles, Holton, & Swanson, 1998). This approach also promotes the lofty premise of individuals controlling their own learning in a meaningful context. As agricultural and extension professionals, we aspire to help learners take responsibility for their own learning (Grow, 1991). Effective educators should attempt to design and deliver individualized instructional sequences to provide the greatest opportunity for a learner’s growth. Professional educators need to tailor their teaching based on learners’ self-directedness or degree of dependency as the situation requires. The theoretical framework for this study is grounded by Guglielmino’s (1989) research on self-directed learning and Knowles’ (1990) theory of adult learning (Andragogy).

Theoretical Framework

The theoretical framework of this study is based on understanding and facilitating self-directed learning abilities as a component of adult learning (Brookfield, 1986) and continues to be a goal in today’s educational system (Candy, 1991). Knowles (1975, 1980) theory of self-directed learning, when melded together with andragogy, produces a readily identifiable and workable philosophy of learning and teaching. Brockett and Hiemstra (1991) defined self-direction in learning as concept that recognizes the learner taking responsibility internally for the learning process. Self directed learning requires investigation of learning needs, developing learning goals, identifying resources, selecting appropriate learning strategies, and evaluation of learning outcomes. Knowles (1975) purports adults experience natural psychological development through self-directed learning. In viewing self-directed learning, he believed learning could be accomplished on one’s own or with the support of other learners and instructors. Grow (1991) supported Knowles’ belief by suggesting The Staged Self-Directed Learning (SSDL) model has a form educators can use to help learners be developed into self-directed learners within the formal learning process. Grow emphasized that effective teachers consider the learner’s stage of self-direction while matching their teaching strategies with the learners learning styles.

In Knowles’ (1990) seminal book, “The Adult Learner: A Neglected Species,” he noted that the appropriateness of teaching methods were contingent on students’ maturity and degree of dependency. Pedagogical approaches (teaching children) are appropriate for students with high degrees of dependency. Knowles (Knowles, Holton, & Swanson, 1998) noted:

The pedagogical model assigns to the teacher full responsibility for making all decisions about what will be learned, how it will be learned, and
if it has been learned. It is teacher-directed education, leaving to the learner only the submissive role of following a teachers’ instructions. (p. 62)

As a student gets older, the degree of dependence tends to lower and andragogical approaches (teaching adults) become more appropriate. Knowles, Holton, and Swanson, (1998) continued:

But it seems that the process of gaining a self-concept, of self-directedness, starts early in life and grows cumulatively as we biologically mature, start performing adult-like roles, and take increasing responsibility for making our own decisions. So we become adult by degree as we move through childhood and adolescence, and the rate of increase by degree is probably accelerated if we live in homes, study in schools, and participate in youth organizations that foster our taking increasing responsibilities. (p. 64)

Guglielmino (1977) finds self-directed learners to be independent in their learning, intellectually curious, un-intimidated by the subject, and possessing high levels of closure. Gillis and English (2001) noted that during informal learning experiences, adults were “continuously learning and becoming independent in and self-directed in their learning” (p. 3). Gills and English also pointed out that 90% of adults participate in informal learning for work, and that, on average, they spend 6 hours per week on informal learning. Richardson (2004) claims, that in extension programs, reinforcement of learning “provides informational, emotional, or social support for both the learner and the information provider...This reinforcement may be personally directed from the educator to learner or may be provided in educational materials used for self-directed guidance of learning” (p. 6).

Richardson (2004) noted that printed extension materials including fact sheets, bulletins, notebooks, or other detailed educational materials can give the learner a chance to “review or study aspects in which clarification or further explanation is needed” (p. 6).

The cultural and ecological characteristics of the villages where the study took place may relate to the villagers’ tendency toward self-directed learning. Tuttle (2003) and Tuttle, Lindner and Dooley (2004), conducted a qualitative study in the same municipality as this study. Tuttle, Lindner, and Dooley described the villages:

Puentes, a community with irrigation, made their living from alfalfa and vegetable crops as well as the dairy goat and livestock production, while La Roca, a community in a hilly area, raised dairy cattle for cheese production. In the past 100 years, both communities have evolved from life ruled by the oppressive hacienda plantation and ranch owners, followed by subsistence agriculture, and then by integration into the modern market economy. (p. 1, 4)

A group of ten extensionists served these communities, providing technical assistance, primarily in agriculture. These extensionists were a private enterprise funded through government contracts. Community members in two of the villages near the town of Dr. Arroyo that participated in separate focus groups of men and women, preferred learning in groups, with the exception of one group of men in one of the villages. Tuttle (2003) also surmised that, historically, the communities had most likely developed a sense of group cohesion in order to survive under the oppressive hacienda regime.

The villagers also preferred delivery methods that were hands-on, social in nature, and provided an opportunity for innovation. They viewed delivery strategies that might be used as self-directed learning tools, such as pamphlet, videotape, courses and distance education as less important than more hands-on, social methods, such as field trip, demonstration, or research center visit. Also, funding was not available to extensionists in these communities to develop some tools that might be useful for self-directed learning (Tuttle, 2003).

**Purpose**

The purpose of this study was to describe the level of self-directedness of selected extension clientele in villages surrounding Doctor Arroyo, Nuevo Leon, Mexico. The objectives of the study were:

- Describe selected extension clientele by their self-directed learning readiness score (SDLRS);
- Describe SDLRS by age;
- Describe SDLRS by gender; and
- Compare participants’ SDLRS to the adult population mean.
Methods and Data Sources

The population for this study included 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico. The researchers used Guglielmino’s (1989) Self-directed Learning Readiness Scale (SDLRS) to describe participants’ level of self-directedness. Local extension personnel in the villages near Dr. Arroyo administered the SDLRS.

SDLRS consists of a 34-item scale with five point Likert-type responses and was designed to indicate an individual’s current level of readiness for self-direction in learning. The instrument has been shown through numerous studies to be a valid and reliable predictor of adult readiness for self-direction in learning (Guglielmino, 1997; Delahaye & Smith, 1995). Respondents’ level of self-directedness was categorized as either above average (139-170), average (120-138), or below average (34-119). Reliability of the scale, using the Pearson split-half method was estimated at $r = .85$. An alpha level of .05 was used for all statistical tests and was set a priori.

Results

Objective One

The first objective of this study described selected extension clientele ($n = 44$) by their SDLRS. The mean score on the Self-directed Learning Readiness Scale was 118.1 with a standard deviation of 23. The range was 91, with a minimum of 74 and a maximum of 165.

Objective Two

The second objective described SDLRS by age. Table 1 depicts the age categories of respondents. Approximately one-fifth (20.5%) of the respondents was between the ages of 20-33 and had a mean score of 125.9 ($SD = 20.7$). The largest group of respondents fell between the ages of 34-41 and comprised around one third (29.5%) of the group with a mean score of 126.0 ($SD = 25.2$). Slightly more than one-fifth (22.7%) of the respondents were in the 42-51-age category averaging a score of 108.1 ($SD = 20.2$). The final group of 27.3% ranged in age from 53-79 and had a mean score of 111.9 ($SD = 21.9$).

<table>
<thead>
<tr>
<th>Age</th>
<th>f</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
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<tbody>
<tr>
<td>20-33</td>
<td>9</td>
<td>20.5</td>
<td>125.9</td>
<td>20.7</td>
</tr>
<tr>
<td>34-41</td>
<td>13</td>
<td>29.5</td>
<td>126.0</td>
<td>25.2</td>
</tr>
<tr>
<td>42-51</td>
<td>10</td>
<td>22.7</td>
<td>108.1</td>
<td>20.2</td>
</tr>
<tr>
<td>53-79</td>
<td>12</td>
<td>27.3</td>
<td>111.9</td>
<td>21.9</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>100.0</td>
<td>118.1</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Note. SDLRS consists of a 34-item scale with five point Likert-type responses. Scale, 1= I never feel like this, 2= I feel like this less than half the time, 3= Half the time I feel this way, 4= I usually feel this way, 5= I feel like this all the time.

Table 2

<table>
<thead>
<tr>
<th>Gender</th>
<th>f</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
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<tbody>
<tr>
<td>Male</td>
<td>36</td>
<td>81.8</td>
<td>118.5</td>
<td>23.1</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>18.2</td>
<td>116.0</td>
<td>24.0</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>100.0</td>
<td>118.1</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Note. SDLRS consists of a 34-item scale with five point Likert-type responses. Scale, 1= I never feel like this, 2= I feel like this less than half the time, 3= Half the time I feel this way, 4= I usually feel this way, 5= I feel like this all the time.

Objective Three

The third objective described the SDLRS by gender. Table 2 shows the gender of the participants. As illustrated, the majority of respondents 36 (81.8%) were males and 8 respondents (18.2%) were female. The mean score for males was 118.5 ($SD = 23.1$) and for females it was slightly lower at 116.0 ($SD = 24.0$).

Objective Four

The fourth objective compared participants’ SDLRS to the adult population from previous studies of the SDLRS (Guglielmino, 1997; Delahaye & Smith, 1995). SDLRS scores for participants ($M = 118.2; SD = 23.5$) in the study are visually depicted in Figure 1. The mean score for all adults, who have taken the SDLRS is 129.0 ($SD = 18.5$). The mean SDLRS scores for participants in this study were significantly lower than those of the mean adult population, $t = 2.48$, $p < .05$. In this...
study, participants’ SDLRS scores did not differ by gender, \( t = 0.78, p > 0.05 \). Participants’ SDLRS scores did differ by age, \( F = 1.88, p > 0.05 \).

**Figure 1.** Mean self-directed learning readiness scores of survey participants compared to the adult population mean (Guglielmino, 1997; Delahaye & Smith, 1995).

**Conclusions and Discussion**

Agricultural and extension agents employ a variety of educational methods to teach their clientele. As the innovation of distance education diffuses more rapidly throughout the world, these clientele will rely more on their self-directed learning competencies than ever before for both formal and non-formal education. A variety of researchers including Brookfield (1986), Grow (1991), Guglielmino (1989), and Knowles (1990) have noted the need to understand and develop learners’ self-directedness in order to foster deeper and more meaningful learning in both formal and non-formal educational settings.

The findings of this study show that the 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico had similar levels of SDLRS, as did the worldwide adult mean. The average SDLRS for study participants was 118.2. Twenty-one (47.7%) participants had a below average SDLRS; 21 (47.7%) participants had an above average SDLRS; and two (4.6%) participants had an average SDLRS. Although the mean SDLRS for this particular population was average, the participants’ scores tended to be skewed to below average and above average. An implication exists that a variety of teaching methods including both pedagogical methods and andragogical methods are warranted.

Andragogical methods can be used for those exhibiting average or above average levels of self-directedness and pedagogical methods, for those exhibiting below average levels of SDLRS. The villagers who exhibited a lower SDLRS score may reflect the propensity of community members to work in groups, described by Tuttle (2003), due their cultural and historical background, rather than be self-directed in their learning. The villagers’ tendency toward innovation that Tuttle, Dooley and Lindner (2004) found may be associated with the above average SDLRS that some villagers in these communities displayed. For this latter group, educators can use a variety of strategies such as facilitated discussion, active involvement in creative thinking and problem
solving, and team projects to accomplish the stated objective of the learning experience and to increase the learners’ level of self-directedness. These methods do not require the level of funding or technical assistance needed to develop some of the other self-directed learning tools such as distance education and videotapes, and would be appropriate for the local communities in the study. These methods also align well with the villagers’ propensity towards group work. A recommendation for future study includes reviewing extension programs for their efficacy in terms their adaptability to train a variety of learners. It is incumbent upon extension that an allowance for different learning methods be incorporated in all programs undertaken to enable their largest applicability for the users of their service.

There were no statistically significance differences in SDLRS by age of participants. This is not necessarily suggested by Knowles. In this study, self-directedness was not shown to be a function of the increase in the participant’s age. Further research should seek an understanding of this issue.

There were no statistically significance differences in SDLRS by gender. Women and men had tended to have similar SDLRS. Implications exist for using andragogy and pedagogy as needed for both male and female populations. It is good to know that instructors in situations similar to this, who have combined male and female audiences, can focus on the content of the curriculum rather than the methodology of instruction.

The educational importance of this study is focused on two areas: needs assessment and self-directed learning. The results of this study will help extension professionals in Doctor Arroyo, Nuevo Leon, Mexico better understand their clienteles’ ability to use self-directed approaches to learning. An implication exists that for extension audiences, context, culture, and geography all influence the level of self-directedness.

References


Association for International Agricultural and Extension Education
20th Annual Conference

Dublin, Ireland
May 24-27, 2004

Outstanding Poster Presentation Abstracts

**Outstanding Poster Presentation**

Teaching, Researching, and Applying Biotechnology in Mexico—Applying Online Learning Technologies to Meet Project Goals
Theresa Pesl Murphrey, Patricia Villalobos, Kelly Jett Murphrey, Manuel Piña, Jr., and Andrés de la Concha
Texas A&M University

**1st Runner-Up Outstanding Poster Presentation**

Framing Topics and Teaching Methods for International Agricultural Curriculum for US Undergraduate Students
Xiaorong Shao and Thomas Bruening, The Pennsylvania State University

**2nd Runner-Up Outstanding Poster Presentation**

Using Garbage to Teach Science
Jack Elliot and Dan Foster, The University of Arizona
Teaching, Researching, and Applying Biotechnology in Mexico—Applying Online Learning Technologies to Meet Project Goals

Theresa Pesl Murphrey, Visiting Assistant Professor
Patricia Villalobos, Graduate Assistant
Kelly Jett Murphrey, Director, Center for Western Hemispheric Trade
Manuel Piña, Jr., Associate Professor
Andrés de la Concha, Associate Professor
Texas A&M University

Outstanding Poster presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Introduction

Collaboration is one of the most important and effective means of transferring knowledge. This project focuses on collaboration between Texas A&M University and Mexican institutions on biotechnology, an issue and concern that mutually impacts Texas and Mexico. The project is designed to provide training to enhance the skills of research and teaching faculty at universities in northeast Mexico. Biotechnology is a relatively new field of science. Simply stated, it is the practice of genetically modifying organisms and cells to perform specific useful tasks in a predictable and controllable way. While information about it is exploding, this information can lead to misinterpretation about the real benefits and risks of genetically modified organisms. The goal of this project is to enable university professors in USAID-assisted countries across the world to teach objectively about biotechnology, conduct research on biotechnology, and apply biotechnology to alleviate poverty.

Purpose and Major Points to be Shared

This poster presentation will describe the activities involved in developing, piloting, and testing an informal education program that is based on a case study approach for enhancing the capacity of a leadership team of faculty members from three universities in northeast Mexico to teach about, conduct research on, and apply biotechnology on problems of high priority related to food, agriculture, and the environment. Specifically, the poster will depict the three overlapping phases that make up the project: Phase 1 — Orientation to Biotechnology and Hands-On Laboratory Experiences, Phase II — Application and Follow Up via Technology Assisted Learning, and Phase III — Sharing and Expanding with Other Educational Institutions.

Conclusions and Educational Importance

Combining hands-on training and online training offers new approaches to enhancing teaching and learning effectiveness, meet the needs of learners, and reach broader audiences. The educational importance of this poster focuses on two distinct areas: the significance of teaching faculty how to objectively instruct about biotechnology and the unique approaches of using blended approaches (online and hands-on training) to instructional design to deliver both primary and supplementary instruction.
Framing Topics and Teaching Methods for International Agricultural Curriculum for US Undergraduate Students

Xiaorong Shao, Ph.D. Candidate
Thomas Bruening, Associate Professor
The Pennsylvania State University

1st Runner-Up Outstanding Poster presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Introduction

The rapid globalization of economies and societies has opened the door for higher education to increase the opportunities for more students to study international agriculture. Most U.S. colleges and universities have acknowledged the need to equip students with skills and knowledge that will allow them to function effectively across cultures and nations. However, there is little evidence that this is being done in a systematic way, rather it appears that the international curriculum is being developed piecemeal (Hayward, 2000).

To respond to the need of internationalization of curriculum in higher education and provide better international experiences for undergraduate students, a three-round Delphi study was conducted with the purpose of identifying the topics and approaches to deliver contemporary international agricultural curriculum and activities. It is believed that the findings can help professionals to develop better programs and activities and improve the students’ international agricultural experiences.

This Delphi study consisted of three rounds. Sixty professionals with extensive experience in international agriculture from the membership list of Association for International Agricultural and Extension Education (AIAEE, 2003) were identified to participate in this study. In the first round, a survey questionnaire with open-ended questions that solicited topics, teaching methods, and experiences in international agricultural curriculum was sent to a panel of 60 members. Twenty-eight individuals responded to the first round. The second round questionnaire was developed based on the responses obtained from the first round, in which the respondents were asked to rate the topics, teaching methods, and experiences for a 15-week international agriculture course. Twenty-three members responded to the second round questionnaire. The third and final round asked respondents to confirm their ratings from the responses in the second round with a comparison to group means for each item.

Purpose of poster

The purpose of this poster is to display the most important topics and teaching methods needed to be included in teaching international agriculture for U.S. undergraduate students.

Results

The five highest rated topics by the panel experts included role of agriculture in economic development, globalization and the implications on agriculture, role of culture in agricultural international development, agricultural extension and education systems in different countries, and a world-view for today’s agricultural producers and leaders. The top five teaching methods named by the respondents were experiential learning, field studies/trips to view various agricultural practices, presentations and dialogue with those who have worked long-term in relevant countries, internships, and case study exercises where students must assume a different way of thinking.

Educational importance

With the increased importance of international experiences for U.S. college students, there is an obvious need to develop an effective curriculum to maximize students learning in international agriculture. This study provides the blueprints for professionals who want to develop curriculum contents in international agriculture. The shared expertise of professionals in this study can help to form a cohesive direction for the development of a comprehensive international agricultural course for U.S. undergraduate students.
Using Garbage to Teach Science

Jack Elliot, Professor
Dan Foster, Graduate Student
The University of Arizona

2\textsuperscript{nd} Runner-Up Outstanding Poster presented at the 20\textsuperscript{th} Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

\textbf{Introduction:} Neither new to agriculture or technology, composting is as old as the earth itself. It is the very process that decays leaves and organic debris in nature. Humans discovered composting and its benefits early in their relationship with agriculture. Perhaps one of the first people to document composting was Marcus Cato, a Roman farmer and scientist. Cato utilized compost as a fundamental soil enhancer over 2000 years ago (The Compost Resource Page, 2002).

As a biological process wherein microorganisms convert organic waste materials into a soil-like material, compost today is viewed as the ultimate recycling process by homeowners, municipalities and commercial operations. As landfills around the world are filling up and garbage incineration continues to be a great source of air pollution, composting offers a partial solution to the issue of waste disposal. By addressing the solid waste issue, composting provides a way of instilling in students a sense of environmental stewardship (Cornell Composting in Schools, 2002).

Agricultural educators have introduced bits and pieces of composting information to their students. As a teaching tool in the classroom or in outdoor land laboratories, composting provides an excellent hands-on tool for introducing plant science and applied biological systems competencies and agricultural industry skills. The rapidly growing urban populations of the world demands an ever-improving system for handling waste. Composting offers a valid and practical solution to that challenge and can also provide new career and entrepreneurial opportunities for agricultural education students.

\textbf{Purpose:} The purpose of this project was the development of a Teacher Reference Unit (TRU) on composting.

\textbf{Major Points:} The Instructor Reference Unit: Composting was developed to be an easily used tool in the modern day agriscience classroom. Concise, current, and effortlessly adaptable material is included on CD-ROM and instructors can quickly tailor the information to fit their own curriculum needs.

Table of Contents:
1. Understanding the history and benefits of composting
2. The composting process: How does it work?
3. Identifying methods of composting
4. Selecting raw materials
5. Building an indoor composter
6. Understanding the value of farm/commercial composting
7. Building an outdoor composter
8. Composting and the world’s environment

\textbf{Conclusion/Educational Importance:} From an educational standpoint, composting provides real-world, hands-on opportunities for students to be introduced to competencies such as understanding plant and seed germination requirements, examining the interaction of biological systems within the environment and even managing a plant disease control program. The instructor who chooses to present the Instructor Reference Unit: Composting will be a wise and popular teacher. The program's adaptability is one of its finest features. The increasing use of technology in schools and teaching methods will allow the Instructor Reference Unit: Composting to become a custom curriculum for every agriscience teacher.
Association for International Agricultural and Extension Education
20th Annual Conference

Dublin, Ireland
May 24-27, 2004

Outstanding Carousel Presentation Abstracts

Outstanding Carousel Presentation

In a Market-Driven High-Tech World, Is the Land-Grant Model Still Viable?
Barbara Hutchinson, University of Arizona-Office of Arid Land Studies
Jack Elliot, The University of Arizona

1st Runner-Up Outstanding Carousel Presentation

Teaching Farm Management by Challenging Students to Manage
Gregory Vogel and Charles Steiner, Iowa State University

2nd Runner-Up Outstanding Carousel Presentation

Integrating Technology into Workforce and Agricultural Education in Selected Schools in the Miami-Dade Public Schools: Issues and Implications for the 21st Century Workforce Development
Adewale Johnson Alonge, Miami Dade & ADPED
In a Market-Driven High-Tech World, Is the Land-Grant Model Still Viable?

Barbara Hutchinson, Director, Office of Arid Land Studies, University of Arizona
Jack Elliot, Professor, The University of Arizona

Outstanding Carousel presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Introduction: The land-grant public university system in the United States was established to serve multi-functional and utilitarian goals by combining research, teaching, and outreach for the purpose of educating the common man and serving the economic interests of a growing nation. Originally the focus was on farming and the mechanical arts, later on the basic physical and social sciences were included, and later still the broader educational needs of a diverse population. The success of the land-grant public university in the U.S. has made it a model for developing nations to follow in building similar systems of higher education. One particular case was the partnership that established six state agricultural universities in India. However, increasingly the original intentions of the land-grant public university system toward equity of access, multi-purpose curricula, research and training for public needs, and public financing are being challenged by the driving interests and demands of globalization, high technology, and the private sector. As public universities face serious budget shortfalls precipitated by waning state support, will the tradition of bringing education and the results of research to the people be lost in the search for funding and prestige? How does the traditional land-grant public university fit into today’s world? These are some of the questions to be raised in this proposed roundtable discussion.

Method: Drawing from the agricultural education and higher education literature, this presentation will begin with a brief history of the land-grant public university system and a discussion of its contributions to the development of the U.S. and to other country’s systems of higher education, particularly India. This will be followed by a review of the external pressures influencing current public university decision-making which are causing them to operate more on a business rather than public service model. Examples will be given of university systems that are “moving toward the market” (U.S., Australia, China), and at least one that is trying to renew the integration of teaching, research, and community service (South Africa). The purpose is to set the stage for discussing pros and cons, as well as sharing examples of both market-driven and service-oriented models.

Major Points: To present the historical context for public land-grant universities in the U.S. and elsewhere, the pressures these institutions face in today’s changing world, and the possibility of their providing a viable alternative to market-driven models.

Conclusions: The presentation will conclude with a series of open-ended questions for purposes of discussing ideas on the role of public universities in a global society. In addition, participants will be asked to share their own experiences and knowledge of new teaching, research, and outreach models. (Results to be compiled for publication).

Educational Importance: In an increasingly interdependent world characterized by a growing divide between the haves and the have nots, it is important for those in higher education and extension to be aware of the causes and consequences of external forces on their professional decision-making and community involvement.
Teaching Farm Management by Challenging Students to Manage

Gregory Vogel, Ag450 Farm Manager, Iowa State University
Charles R. Steiner, Instructor and Graduate Student, Iowa State University

1st Runner-Up Outstanding Carousel presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Introduction: Iowa State University and the Department of Agricultural Education and Studies (AgEds) provide a unique teaching and learning opportunity for senior level students. The Ag450 farm and the AgEds 450 course were developed to provide students the opportunity to manage and operate a typical farming operation as part of a capstone course in AgEds. This type of teaching and learning provides students the opportunity to become involved in all facets of the farm as a means of learning about management and operations. Problem-solving and decision-making skills are the primary focus of the curriculum as students become involved in several committee projects. The curriculum includes on-farm lecture/discussions, on-farm laboratory, business meetings, experiential learning and strategic issues. Oral and written class reports and discussions are used to understand the various information and situations. The Ag450 farm hosts several international visitors each year that want to understand more about this type of learning situation and what a typical Iowa farm is like. They can identify the benefits but also explain a variety of factors that may limit the development and success of this teaching situation in their teaching and educational environment.

Method: Using information provided by staff involved with the teaching and operations of the Ag450 farm we will discuss the methods for developing this type of curriculum. The staff will discuss the methods involved with providing the students with the information and responsibility necessary to allow for a student managed operation to function effectively and efficiently. Student’s perceptions and feedback related to this type of learning situation will also be utilized.

Major Points of Information to be Shared:
1. The Ag450 farm concept and the teaching and learning processes
2. The student’s perceptions of how this type of learning situation is beneficial
3. How this Ag450 farm concept can be introduced into a variety of international farm management settings.
4. The factors that benefit and limit the idea of student managed farming operations internationally.

Conclusions or Lessons Learned: Through several research studies, departmental reviews, and outreach programs the AgEds department has identified the importance of the Ag450 farm and course on student learning. Although a majority of the students and people visiting the Ag450 farm can identify and understand the benefits associated with this type of learning situation, the acceptance and development of similar programs has been limited. A discussion of these limiting factors and the Ag450 concepts may lead to future possibilities to partner with other farm management teaching institutions worldwide.

Educational Importance: The students taking the AgEds 450 course at Iowa State University have discussed and reported an improved ability to apply what they learn about farm management as a result of their experiences in this type of learning environment. The idea of allowing students to become more involved in the management and decision-making processes could have a significant impact on the ability of students to apply their experiences to any farming situation.
Integrating Technology into Workforce and Agricultural Education in Selected Schools in the Miami-Dade Public Schools: Issues and Implications for the 21st Century Workforce Development

Adewale Johnson Alonge, Coordinator, Miami-Dade Public Schools Systems

2nd Runner-Up Outstanding Carousel presented at the 20th Annual Association for International Agricultural and Extension Education Conference, Dublin, Ireland, May 24-27, 2004

Introduction: In the highly competitive globalized knowledge-economy of the 21st century, a nation’s stock of technologically proficient workforce will constitute a major competitive edge. Hence, educating this workforce has become the overarching concern of many a national educational system. As a result, technology infusion into the educational process has become a multi-billion dollar venture cutting across all levels of the US educational enterprise. However, the challenge of technology infusion goes beyond the associated huge financial outlay, to include technical, social, human resource development, and accountability concerns. Using data from the author’s experience with a multi-million technology infusion project in Homestead Middle School, a school within the Miami-Dade Public Schools System and from another school within the system, JFK Middle School, participants in the carousel presentation will come face-to-face with real life challenges of technology infusion.

Method: The presentation will adopt a participatory methodology including scenario and role-playing. Each set of participants will role-play a strategic planning/evaluation team. Each role-playing strategic team will rely on both qualitative and quantitative data collected from both schools as the planning/evaluation document. Using the data as benchmarks, the audience will be guided through a brief SWOT analysis (Strengths, Weakness, Opportunities, & Threats) of the two technology infusion projects.

Major Points to Share:
1. Pre technology acquisition issues: Needs awareness, consensus building, and sourcing for fund.
2. Technology Acquisition Issues: technology compatibility, relevance and adaptability
5. The limit of technological determinism: Issues in technology-human interaction

Lessons Learned:
1. The failure or success of technology infusion program is often determined at the pre-technology acquisition/planning stage
2. Contrary to the technology diffusion model, most teachers are receptive to technology infusion given an environment that encourages democratic participatory decision-making.
3. Technical support and staff development are critical factors in successful technology infusion.
4. Rapid technology obsolescence is a major challenge to technology infusion.
5. Technology is not a cure-all solution for the complex problems that confront the educational enterprise

Educational Importance: As the educational enterprise faces the new challenge of greater accountability, pressure from the business community, and performance-based evaluation, nation wide, the issue of technology infusion into the education process in general, and workforce development education in particular will continue to attract great attention. The carousel sessions will provide the audience with a close-up look into the challenges of implementing a major technology infusion program. The hope is that the audience will leave the presentation better informed and prepared for technology-driven instruction.
Editor’s Note: The following abstracts, listed by primary author’s last name in descending alphabetical order, were derived from professional papers presented at the 20th Annual AIAEE Conference. Complete papers are available (Web) at http://www.aged.tamu.edu/aiaee/

University Curricula in Agricultural and Extension Education:
An Analysis of What We Teach and What We Publish
David G. Acker, Iowa State University
James I. Grieshop, University of California

This paper compares what we teach and what we publish in the field of agricultural and extension education as a step in the process of identifying cutting edge themes for inclusion in curricula. An analysis of content of existing undergraduate and graduate agricultural and extension education curricula at 22 public universities in the United States was conducted in June, 2003, using information available on university web pages. The identification of trends in articles published recently in the field of agricultural and extension education was also undertaken as a step toward understanding what is on the frontier of the field. This review focused on literature from four influential journals in the field (The Journal of Agricultural Education and Extension, Journal of International Agricultural and Extension Education, Journal of Extension, and Journal of Agricultural Education) published from 1998-2002. A total of 684 refereed articles were examined. Themes identified in this review were then compared with higher agricultural and extension education curricula now in place in the U.S. The paper concludes with recommendations for curricula based on the gap between these published themes and current curricula.

Between Government and Market Failure: Issues, Perceptions and Policy Challenges in Reforming Public Sector Extension Services in sub-Saharan Africa
Adewale Johnson Alonge (Ph.D.) Miami-Dade Public Schools Systems Miami, Florida

This paper analyzes ongoing efforts to reform public sector extension in sub-Saharan Africa. It is argued that the extension reform agenda must be conceptualized within the paradigm shift in international development in the 1980s from market to government failure, and its consequences for reducing government's role in service delivery. Using this broad conceptual framework, and relying on extensive literature review and qualitative data from Nigeria, the paper analyzes potential pitfalls to implementing extension privatization and decentralization in SSA. The paper contends that ongoing extension reform efforts in SSA are characterized by being overly technocratic, over-emphasizing structural issues relative to institutional culture, externally conceived rather than being homegrown, and finally failing to place the reform agenda within the context of Africa’s unique political, social, cultural, historical, and institutional realities.

While noting that current public sector dominated institutional framework for the delivery of extension services in SSA is unsustainable, the author contends that ongoing reform proposals such as decentralization and privatization are unlikely to succeed unless they are grounded within Africa’s unique historical, political, socio-economic, and institutional realities. It is concluded that for the foreseeable future, the public sector, in concert with other alternative delivery mechanisms such as private sector providers, and non-governmental organizations, will continue to play a role in the delivery of extension services in SSA, especially in poorly integrated areas. Finally, it is recommended that extension reform effort in SSA should shift from its current narrow focus on technology transfer toward the more integrated Agricultural Knowledge & Information System for Rural Development (AKIS/RD) approach.
Future Farmers of Turkmenistan: A Multi-Functional Agricultural Youth Organization
Randall J. Andreasen, Assistant Professor, New Mexico State University

Recently the Central Asian country of Turkmenistan has undertaken the task of organizing an agricultural youth leadership organization patterned after the National FFA (formerly the Future Farmers of America) Organization from the United States of America. This agricultural youth organization has been entitled the Future Farmers of Turkmenistan or FFT.

The tasks or goals of this fledgling youth leadership organization have been primarily focused on securing the necessary permissions from the appropriate governmental agencies, namely the Ministry of Agriculture and the Ministry of Education, at the local, Velayat or State, and National levels. Once the approvals were obtained the selection of the FFT clubs was another task to be undertaken. Winrock International, the NGO charged with the development of the FFT through a contract with the USAID, initiated the development of these first clubs in locales where they had consulting offices or subcontractors that could serve as advisors to the fledgling clubs. This paper will seek to describe the process used to introduce the concept of agricultural youth leadership organizations to the various stakeholders in Turkmenistan. Further, it will detail the development of the first FFT club and the subsequent organization of other clubs throughout the country.

Multi-functionality in the Jordanian Agriculture: The Interface between Farming and Biodiversity
Ahmad Shukri Al-Rimawi, Professor, University of Jordan

The study aimed at exploring the perception of farm operators on the use of local and improved varieties of major crop, and the implications of the socio-economic characteristics of operators for extension on farm agro-biodiversity. It is based on a systematic random sample of 200 operators from two districts involved in a regional biodiversity conservation project. Descriptive statistics were used to analyze the data. Farming was found to be largely traditional, family oriented, diverse, low-income, small-scale, rain-fed, and characterized by informal transfers of skills. These characteristics are likely to play a positive role in the conservation of local crop genetic diversity. Operators grew varied number of both local and introduced varieties of crops. But, most operators used local varieties of olives, grapes, wheat, and barley. Local varieties produce minimum yield under low production conditions, tolerant to drought and pests, and have higher market demand. In contrast, introduced varieties of apples, pears, stone fruits, lentils and chickpeas performed better in respect of marketing value. Given the diversity in local conditions, wide genetic bases of both local and introduced varieties contribute to genetic diversity. The characteristics and agronomic attributes of local varieties over introduced varieties, and the trade-off between farming and biodiversity, have to be investigated to promote in-situ conservation of well adapted and financially feasible varieties. Access to local certified varieties of preferred crops; increasing appreciation of the alternative income-earning opportunities based on the conservation of local and wild species; protection of the threatened local varieties and wild herbs; and improved land-management practices contribute to biodiversity.

Training for Rural Women in Portugal: Can it promote equal opportunities and development?
Alberto Baptista, Researcher and Artur Cristóvão, Professor
Universidade de Trás-os-Montes e Alto Douro, Portugal

The paper result from a study conducted by the authors in 2001-2002 on “Women, Training and Development in Rural Areas”, funded by the Commission for Equity and Women’s Rights (CIDM), and analyzes the issue of training for women in rural areas, particularly looking at the appropriateness of current courses and initiatives aimed at this group. A second stage of the work looks at training as an instrument for change and local rural development. The study was built on the basis of: document analysis, particularly statistics and data bases on training; interviews with 18 directors and managers in 14 different adult education and training institutions; interviews with 27 rural women involved in a variety of training activities in different parts of central and northern Portugal. The results show that a large variety of actors are today involved in the adult education and training area, though with different motivations and objectives: some see it mainly as a business opportunity, others as a way to promote change and
development. Women, particularly those of 35 or more years of age, are the main clients of adult education and training in rural areas. They tend to prefer practical courses, in subject areas in which they already have some experience and that contribute to their personal growth. The linkages between training and employment are not straightforward, and often the creation of viable self-employment seems more of an unattainable mirage than a practical reality. In many instances, it might be more appropriate to consider alternative training strategies, linked less to employment as such, and more related to human development, rural multi-functionality, diversification of income sources and community-based economic development. Achieving the aims of training through this approach will requires strong and effective articulation with local institutions and businesses, in order to expand opportunities for rural women.

**Counting Change: A Review of Gender Related Trends and Assumptions in the JIAEE**

Pamela Bartholomew, Michigan State University  
Inger Bergom, Community Educator and Technical Trainer, Lansing, MI USA  
Meghan McCune and Jennifer Kapp, Michigan State University

Despite an increased rhetoric and inclusion of women in development issues, women remain an underclass and their work worldwide remains undervalued, underrepresented, and unremunerated. Based on feminist post-modern theory, we attempt to begin a critical evaluation of development initiatives and discourse as represented in JIAEE articles from 1994-2003. Our purpose is to highlight positive achievements while also uncovering attitudes and assumptions that may impede efforts toward women’s development. Articles were systematically reviewed for gendered terms, counted and arranged according to year, geographic orientation, and theoretical orientation (WID or GAD). Modified grounded theory method was used to code the selected articles. Specific themes were expanded upon and discussed in some detail.

**Education, Research and Extension: An Evaluation of Agricultural Institutions in Tunisia**

Shannon H. Bedo, Extension Assistant, Texas Cooperative Extension  
Kim E. Dooley, Associate Professor, Texas A&M University  
Texas A&M University of the United States and the Institute National Agronomique de Tunisie (INAT) of Tunisia established a collaborative relationship of mutual exchange of information and ideas for the further advancement of both universities. The researcher worked closely with these universities to conduct a qualitative study in Tunisia to determine the effectiveness of agricultural institutions working toward further development in that country. The emphasis of the study was on the transference of knowledge and innovations from the research level through extension to the farmers and other end users. The triangle of teaching, research, and extension provided a base perspective.

The researcher interviewed 37 respondents, including researchers, extension personnel, administration, professors, and farmers. From data that respondents provided, the researcher used a constant comparative method to organize results into the strengths, weaknesses, opportunities, and threats of the agricultural institutions as a system. Overarching themes included a pointed focus on meeting farmer needs, but this desire was hindered from being carried out fully due to flawed communication systems and an organizational culture that did not facilitate change and improvement. Hope did abound for Tunisian agriculturalists because the opportunities available through globalization and international collaboration far outweighed any possible threats to development, such as fierce competition in trade and lack of quality water. The researcher also made specific recommendations based on the information ensuing from the study. These recommendations were based on the findings of the study, and they were directed to leaders within the Tunisian agriculture system and other agriculturalists wishing to further development in countries facing similar situations as Tunisia.
Understanding the Impact of Context: a New Approach to Understanding the Adoption of Improved Pest and Disease Management Practices
Denise Bewsell and Geoff Kaine, AgResearch Ltd, Ruakura Research Centre, Hamilton, New Zealand

The adoption of pest and disease management techniques, especially Integrated Pest Management (IPM), has been the subject of numerous studies. These studies have investigated the adoption of practices such as monitoring of pests and disease, the use of population thresholds to determine spray regimes, monitoring and use of beneficial insects to control pests, the use of selective chemicals, the use of growth regulators and the use of mating disruption techniques. We reviewed a number of studies investigating the relationships between the use of pest and disease practices and the characteristics of growers and their enterprises. We found little reliability in the findings of these studies. In particular, these studies failed to identify consistent relationships across industries and countries between pest and disease management practices and variables such as enterprise characteristics and growers’ characteristics such as age, education and experience.

A novel approach to understanding the adoption of pest and disease management strategies is needed. We believe the inconsistency in the findings of previous studies is understandable if we use a different framework for characterising growers’ decision making about pest and disease management. We suggest that growers follow a deliberate and systematic process of learning about, experimenting with, and evaluating management options within the particular context of their enterprises (given the constraints imposed by the realities of commercial production). That is, growers follow a decision process that resembles complex decision making when establishing a pest and disease management regime. Hence, we believe complex decision making is a useful construct for understanding adoption of pest and disease management strategies.

The Development of a Family Focused Advisory Programme in the Republic of Ireland
Dr. Pat Bogue, Post-Doctoral Researcher and Professor James Phelan, National University of Ireland

Advisory services in Ireland have evolved towards a technical focus, away from the farm family and household. However, even though there is less overall involvement of families in the running of farms, decision making is influenced by more than the farm operator. Teagasc introduced the ‘Opportunities for Farm Families Programme’ in 2001, which recognised that the challenges facing farmers required a ‘whole family’ response. The fundamental objective is to help farm families generate additional household income and improve quality of life. The aim of the research outlined in this paper was to determine the views and attitudes of advisers and farm families to the programme. The majority of advisers and participants considered that the programme helped farm families to take a realistic look at their current situation and was useful in terms of identifying ideas to improve their income and quality of life. Family participation in the programme is significantly higher than other programmes. Families who participated together derived greater benefit than individuals. The key lesson learned from this research was the importance of early evaluation of new advisory approaches. Educational institutions and extension agents need to highlight the importance of an objective assessment of both the delivers (advisers) and target (participants) views on extension programmes. For assessments during programme delivery to be successful, they must be focused on the development of the programme and not the monitoring of extension agents. The information gathered must inform the development of the programme and appropriate training for advisers.

Making University Curricula and Training Programs Responsive to Employer Needs: The Experience of Makerere University’s Agribusiness Education Program
Don Breazeale, Extension Educator, University of Nevada Cooperative Extension
Margaret Najingo Mangheni, Lecturer, Makerere University, Kampala, Uganda
J. Mark Erbaugh, Assistant Director, The Ohio State University
Swaibu Mbowa, Lecturer, Makerere University, Kampala, Uganda

African universities are being forced by economic and political realities to adopt curriculum changes that more readily address the employment needs of the private sector rather than the public
sector. Over the last few years, Makerere University’s Faculty of Agriculture has restructured its undergraduate and graduate programs to reflect this new emphasis, especially in the area of agribusiness. This paper describes the undergraduate / graduate agribusiness programs and initiatives undertaken and then discusses the results and outcomes of these efforts. Without these current efforts, Makerere University risked becoming less relevant to the agribusiness sector in Uganda. However, since these initiatives were started the faculty and the private sector have both discovered the benefits of working together for their own mutual benefits as well as for the development of Uganda.

Experiences Needed for Students Taking International Agricultural Courses
Thomas Bruening, Associate Professor and Xiaorong Shao, Ph.D. Candidate, Penn State University

Internationalization is a major trend in higher education. It is also a worldwide phenomenon. However, what kinds of experiences students need to attain while taking an international agriculture course and how can we develop a curriculum to foster international experiences for the U.S. college students has remained unexplored. A three-round Delphi study was conducted and attempted to gather the consensus from a group of experts regarding the international experiences that students need to gain from an international agriculture course. The purpose of this paper is to describe the experiences students need to acquire in taking an international agriculture course. The essential international experiences generated from this study are presented. The implications and recommendations for adopting the essential experiences to develop curricular in international agriculture are also discussed. The results revealed that most of the top ten experiences ranked by the respondents were derived from the categories of social skills and attitudes rather than knowledge such as soft skills (i.e., flexibility, tolerance, adaptability, and curiosity), communication skills, open-mindedness, diplomacy, systems-thinking/critical thinking, team work skills, problem-solving, and decision-making skills. Therefore, the courses or programs in international agriculture should be designed to help students master these skills and gain experiences important to the competitiveness and development of international agriculture. In addition, these experiences should help develop students’ worldviews within the context that agriculture is a logical entry point for students interested in international development.

The Development and Application of the Balanced Scorecard for the Irish Dairy Farm Manager
Ailish Byrne, Postgrad student and Dr. Dermot Ruane, Senior Lecturer, National University of Ireland Dr. Thomas Kelly, Development Manager Teagasc – Kildalton College, Piltown, Co. Kilkenny

Agriculture’s primary role is that of producing food and fibre. However, in recent years its contribution to the viability of rural areas, food security, the cultural heritage and environmental benefits has increased dramatically. These additional functions of multi-functional agriculture make it imperative that farmers seek the best professional help and advice available and draw up a strategic plan for their future business at a time of major change in the agricultural industry.

Kaplan and Norton developed a Balanced Scorecard (BSC) at Harvard University in the 1990’s. The BSC is an interrelated set of financial and non-financial performance measures that reflect the multi-functional nature of an agricultural business. In this research the BSC model has been applied and modified through case study research and a Delphi study to the Irish dairy farm business and subsequently called the Dairy Farmer Scorecard.

Education and Extension for Multi-Functional Agriculture: Extension Concepts for Sustainable Agricultural Development in Myanmar
Khin Mar Cho, Post-Doc student and Hermann Boland, Professor, Justus-Liebig-University, Germany

There are widespread concerns about the environmental impact of agricultural technologies and over the long-term sustainability of farming systems in Asia. Although the content of extension programs includes sustainable technologies, extension approaches and methods in the public sector continue to reflect a technology transfer paradigm. More recently, food security, improved nutrition and poverty alleviation have become part of the agenda of international NGOs and United Nations organizations in Myanmar providing extension services. In the frequent situations where mass media and extension
materials contain relatively little information to help farmers to decide how to adjust their farming practices in the interests of long-term sustainability, national and donor policies can enhance the sustainability of agriculture by increasing the complementarity between extension provides and encouraging changes in extension approach, extension agent training and mass media treatment of agricultural and environmental issues. The demise of the Selective Concentrative Strategy and the Training and Visit system of agricultural extension in Myanmar has coincided with growing concern in the region over negative environmental effects of some elements of agricultural technology. High potential areas, which have registered impressive productivity gains, experience problems from excessive or poorly drained irrigation, leading to salination, water logging and depletion of groundwater reserves, with added concerns over the consequences of indiscriminate or inappropriate use of agrochemicals. The main purpose of this paper is to describe some important suggestions regarding agricultural extension approaches, extension programs, extension methods, extension agents' training, extension policy and organization for the long-term sustainability of farming systems in Myanmar.

Perceptions of Lithuanian Agriculture Teachers toward the Ecological Paradigm
James J. Connors, Assistant Professor and Benjamin Swan, Graduate Assistant, Ohio State University
James A. Brousseau, APPLE Agricultural Education Instructor, Milan High School, Milan, Michigan

Lithuania is a country with a strong history of agriculture production and environmental protection. Agricultural education programs throughout the country offer agricultural instruction in numerous specialties related to agricultural production, agricultural economics, and environmental protection. Lithuanian agriculture teachers who participated in two in-service workshops offered by the American Professional Partnership for Lithuanian Education completed a survey on about their perceptions of the ecological paradigm including production efficiency, economic viability, environmental sustainability, and social responsibility.

The Lithuanian agriculture teachers held strong beliefs towards agricultural production and the free market economy. They perceived the areas of environmental sustainability and social responsibility to be of utmost importance to the future of Lithuanian agriculture and rural communities. Respondents agreed that agricultural education programs should teach students about the interrelationships between agriculture, the environment, and the citizens of Lithuania.

Lithuanian Agriculture Teachers’ Perceptions on the Importance and Integration of Leadership Skills into the Agricultural Education Curriculum
James J. Connors, Assistant Professor and Benjamin Swan, Graduate Assistant, Ohio State University
James A. Brousseau, APPLE Agricultural Education Instructor, Milan High School, Milan, Michigan

As Lithuania prepares for membership in the European Union, agricultural education programs will play a vital role in educating future leaders for the agricultural industry and rural communities. Lithuanian agriculture teachers who participated in two seminars conducted by the American Professional Partnership for Lithuanian Education (A.P.P.L.E.) were surveyed to determine their perceived level of importance of various leadership skills and their integration into agricultural curricula. The participants were also asked about their participation in the Lithuanian Young Farmers Circles, the youth development organization for Lithuanian students studying agriculture.

Developing a vision for their future was the leadership skills rated most important by the respondents. The skills of developing interpersonal skills, problem solving and setting professional goals were identified as the most important and most integrated into agricultural education curricula. Leadership skills relating to running effective organizational meetings, participating in committee activities, or holding a leadership position were rated as the least important and least integrated leadership skills in the curriculum.
Extending Technologies among Small-Scale Farmers in Meru: Ingredients for Success in Farmer Groups

Kristin Davis, Graduate Student, University of Florida
Steven Franzel, Principal Agricultural Economist, World Agroforestry Centre, Nairobi, Kenya
Peter Hildebrand, Professor and Nick Place, Assistant Professor, University of Florida

This paper examines the role of farmer groups in information and technology dissemination, focusing on the factors that make groups effective in extending technologies to farmers in Meru Central District of Kenya. The research method was an in-depth case study of dairy goat farmers and farmer groups in Meru Central District. Qualitative and quantitative methods were employed to provide deep and rich accounts of the study and to triangulate data. Survey research was also used, and the data entered into the Statistical Package for Social Scientists (SPSS) for analysis. According to informants, farmer groups have an important role to play in the technology dissemination process. Nearly all farmer groups interviewed were involved in technology and information dissemination. There are certain factors that appear to contribute to these groups’ success in such extension. These include leadership, group resources, type and size of group, number of activities and linkages, and the wealth of the members.

Extension is at a crossroads. With the focus today on issues such as decentralization, democratization, pluralism and privatization, one important focus for extension should be the grassroots level. Farmer groups are therefore vital stakeholders in extension. This study shows some of the factors that make them more successful in disseminating to other smallholders. This provides important information for stakeholders in agricultural extension who are seeking means to effectively extend technologies.

Challenges in the Management of Agricultural Enterprises in Botswana Secondary Schools

Barnabas M. Dlamini, University of Swaziland
Kethoahetse, J. Dingwa, Botswana College of Agriculture, Gaborone, Botswana

A descriptive-correlational study employing the Delphi method in collecting data was used to determine the challenges in the management of agricultural enterprises in Botswana secondary schools. Findings showed that challenges in the management of agricultural enterprises in Botswana secondary schools relate to congested agriculture syllabus, school administration, competence of the agriculture teacher, attitude of students toward agriculture, support by parents, and supervision of teachers. The relationship between demographic characteristics of respondents and their level of agreement with the challenges in the management of agricultural enterprises revealed that the characteristics age, work experience, teaching load and qualification were generally lowly to moderately correlated to the perceived challenges in the management of agricultural enterprises and, thus, eliminated as confounding the findings of this study. The researchers recommend for the strengthening of pre-service and in-service training to improve practical skills, entrepreneurial skills, business skills, and problem solving ability of agriculture teachers.

Reasons for Girls to Choose Agriculture or other Science and Technology Programs

Marietta P. Dlamini, Senior Lecturer, University of Swaziland
Sicelo S. Ngwenya, Agriculture Teacher, Mhlatane High School Swaziland, Southern Africa
Barnabas M. Dlamini, Professor University of Swaziland

A descriptive-correlational study was conducted to determine the reasons for girls to choose agriculture or other science and technology programs at high school and tertiary levels. Findings revealed that respondents’ reasons for enrolling in the sciences were in the following order: economic, personal, educational, family, and social. The background characteristics of respondents related negligibly to lowly with their reasons to enroll in science programs, and thus, eliminated as confounding the findings of the study. However, three background characteristics showed some influence in the reasons for choice of program: place of birth; location of high school attended; and, type of school attended. No significant differences existed in reasons for high school and tertiary girls to choose agriculture or other science and technology programs. Additional information provided revealed that, girls aspired for careers in medicine.
and other health fields, and applied sciences, such as agriculture, computer science and information technology. Among the important recommendations made were that, career guidance teachers should play a major role in showing girls how to choose subjects combination in high school which suit their aptitudes, and family members with considerable influence should encourage girls to take up scientific programs.

**Towards an Appropriate Extension Approach for South Africa: From Model to Principles**  
Gustav H. Düvel, Professor and Director, University of Pretoria

This paper, based on a project aimed at developing and implementing a new extension model for South Africa, has a twofold purpose, namely (a) to outline the participatory process that was followed and (b) to describe the outcome or model. The first phase consisted of a national workshop with delegates from each of the nine provinces, tertiary institutions, NGO’s, organized agriculture, etc. A major outcome was a majority decision in favor of guiding principles rather than an inflexible model. In a series of follow-up workshops, these identified principles were conceptualized and alternatives identified within these principles. These were captured in a discussion document and taken to the provinces for their comment. The feedback regarding extension staff’s opinions and preferences was obtained by making use of a sequential combination of nominal group and Delphi techniques at regional meetings at strategic venues in the districts of the provinces. The responses were then analyzed and tabled in an extensive report, including a list of recommendations, categorized and proposed to be implemented under five programs in every province.

Subsequently the management of every province responded on the implementation proposals under the five programs of planning and project management, monitoring and evaluation, coordination and linkage systems, knowledge support systems, and education and training. Provinces are now expected to appoint working groups on each of these programs with the purpose of specifying and overseeing the implementation. In a final stage the provinces will report about their programs and progress at a national workshop, which will form the basis for the development of a national policy document.

**Towards an Improved Prediction of Adoption Behavior**  
Gustav H. Düvel, Professor and Director and Habtemariam Abate, PhD student, University of Pretoria

This paper investigates the influence of some selected personal, environmental and intervening factors on the adoption behavior and production efficiency of maize growers with the object of identifying the most important causes of behavior and thus acquiring a better understanding of maize and dairy farmers’ response to advice regarding maize and dairy production in the study area.

A total of 200 maize farmers were randomly drawn form the two agro-ecological zones (lowland zone and intermediate zone) in the Shashemene district. This represents a sample of ten percent. Another 200 dairy farmers were drawn from Debrezeit, following the same procedure. In the analysis of data multiple regressions were employed to identify the most important determinants associated with behavioral change and to calculate their variance contribution.

The results indicate that, in general, the intervening variables tend to have the highest prediction value. They were found to explain 87.2%, and 68.3% of the variance of behavior associated with the practice adoption and 87.5% and 80.9% of the variance of the resulting production efficiency regarding maize and dairy farming respectively, while the independent variables had R2 values of only 0.324 and 0.178 and 0.251 and 0.193 regarding the adoption behavior and production efficiency of maize and dairy farming respectively. Amongst the intervening variables needs (need tension and need compatibility) were found to have the greatest effect on both of the dependent variables (p < 0.001)
An Evaluative Study of the United States Cooperative Extension Service’s Role in Bridging the Digital Divide
Chanda D. Elbert, Assistant Professor, Texas A&M University
Antoine J. Alston, Assistant Professor, North Carolina A&T State University

Access to the Internet and other digital technologies has rapidly become a necessary tool to function in today’s highly information rich society. “Now that a large number of Americans regularly use the Internet to conduct daily activities, people who lack access to these tools are at a growing disadvantage. Therefore, raising the level of digital inclusion by increasing the number of Americans using the technology tools of the digital age is a vitally important national goal” (U.S. Department of Commerce, 2000). This phenomenon of individuals lacking digital access is popularly coined as the “digital divide.” The purpose of this research study was to conduct an evaluative study of cooperative extension administrators throughout the United States in order to gauge their opinion as to the role of cooperative extension in bridging the digital divide. Overall, it was found that a perceived digital divide existed along ethnic, economic, and geographic lines. Cooperative extension administrators saw The United Cooperative Extension as an adequate mechanism to combat this societal dilemma. Recommendations included establishing strategic partnerships with local community groups to provide technology access and training for residents. Additionally, more in-service technology training for cooperative extension agents was recommended.

A Longitudinal Study of Secondary Student Attitudes and Beliefs Relative to International Agricultural Issues
Jack Elliot, Professor, The University of Arizona
Reta Yanik, Agriscience Teacher, Westwood High School, Mesa, AZ

Moore (1989) developed an international curriculum for secondary agricultural programs in the late 1980s. An assessment of students who were presented with the international concepts in their agricultural courses indicated that the curriculum was effective in improving students’ scores in a pre-test/post-test study (Williams, Moore & Elliot, 1992). The initial curriculum was never updated and a curriculum status study (Henne, 1996) indicated that high school agricultural teachers did not include any international concepts in their repertoire of teaching materials. Because a rudimentary understanding of global issues is considered to be important for all United States citizens, an assessment of those concepts was conducted for the past three years in Arizona.

The overall average indicates slight agreement with the attitude and belief statements. The participants agreed with 2/3 of the attitude and belief statements and were undecided for the rest. In addition, the relatively low scores indicated that the participants did not place a high value on international concepts or issues. The study showed that without a constant effort to keep an international focus within the realm of what teachers teach, students’ attitudes and beliefs about international agricultural issues are marginal at best. Given the current state of global awareness within the media, it is more important than ever to keep international agricultural literacy within the framework of school curriculums. The integration of international issues should be a viable and important component of today’s secondary agricultural education programs. In fact, this baseline knowledge inspired a new Arizona global curriculum effort.

Information Technology Use and Effectiveness in the Texas-Mexico Initiative
Clayton Everett, Undergraduate Research Assistant
Gary J. Wingenbach, Assistant Professor
Manuel Piña, Jr., Professor and Coordinator of International Activities
Wayne T. Hamilton, Director of the Center for Grazinglands and Ranch Management
Texas A&M University

Information technology use and effectiveness, although prevalent in developed countries, does not provide the same reliable resource in lesser developed or developing countries. The purpose of this study was to determine information technology uses and effectiveness in disseminating research results
from the Texas-Mexico Initiative through the Center for Grazinglands and Ranch Management. Two of the three northeast Mexico campuses in this study possessed and used sophisticated information technologies to communicate with researchers outside state and country boundaries. The main method for this exchange has been through the Internet and computer-mediated technologies such as email and videoconferencing.

Texas and Mexico have experienced an increasing inter-dependence due to increased communication and knowledge exchanges. While universities have access to this information, rural communities do not. Rural farmers and producers must rely on agricultural schools to provide them with the information necessary to increase their income and land sustainability. To achieve real economic improvement for the agricultural sector, universities must continue to increase their effectiveness in disseminating information to local producers and farmers. Distance education could provide an economically sound method for reaching a larger percentage of rural communities, if properly employed.

**Extension Service in Nicaragua: Comparison of 1994 to Present**
Jan Fernandez, Ph.D., Texas A&M University

Once considered one of the top agricultural producers in Central America, with rapid growth throughout the 1970’s, Nicaragua suffered much damage due to the 12 years of war from 1979 through 1990. Much of the frustration for agriculturists in Nicaragua stemmed from the biggest problem facing the country after the war – resolving the land title issues. In 1994, the author visited, observed, and interviewed farmers and government agencies in Nicaragua, just after INTA (Nicaraguan Institute for Agricultural Technology) was established, and some of these experiences and the economic climate of the time are revealed. Farmers formed cooperatives with the help of extension agents within INTA, and the government and other agencies were working toward land reform and transferring land titles from previous owners to farmers who were living on and working the land. In the decade since the establishment of INTA, free extension service has had its limitations, and there are more efforts now for privatized or partnered extension service. INTA is gradually withdrawing from its traditional role as direct field provider of advisory services and strengthening a new role as provider of research, technical assistance, and agricultural technology. The relatively high cost recovery rates in Nicaragua and the economic performance of the paid programs show that even poor farmers are willing to pay for a service that improves their economic efficiency and ability to earn a living Nicaragua’s new system rewards good results and producers are clients instead of beneficiaries. Because the new system is still experimental, traditional (free) extension continues to be provided.

**Barriers and Supports: Finding Their Place in Agricultural Extension**
Billye Foster, Associate Professor, The University of Arizona
Brenda Seevers, Professor, New Mexico State University

Women of the twenty-first century continue to break old patterns and norms. As Cooperative Extension nears its century mark in the United States, women are carving a niche as agricultural agents. The purpose of this study was to describe unique challenges regarding personal lives and barriers unique to female agricultural agents. Also investigated was existing mentoring and support systems. A mail questionnaire was sent to a census of 488 women in 49 states. A final response rate of 79% was achieved. Most frequently cited barriers associated with job role were acceptance by male peers and clientele and differential treatment due to gender. Overall barriers perceived by women in extension were categorized as stereotypical roles, gender biases, and balancing professional and personal responsibilities. Common sacrifices noted were family and personal well being, energy and time commitments, and money. While women notably value encouragement and support from other women in the profession, many also indicated they had been discouraged by others when they considered their career path. While overall, respondents were satisfied with their job and career path, many were still hesitant about whether they would do it again. Encouragement of others to follow in the same path was frequently qualified by stating concerns and barriers previously identified.
The Interest of State Extension Service Directors and Administrators Related to International Opportunities

Ed Franklin, Assistant Professor, Ahmed Ali Al-Hassan, Graduate Student, Jack Elliot, Professor and Jim Knight, Professor, The University of Arizona

The main purpose of this study was to examine the international interests of state Extension service directors and administrators. Seventy-seven people (92.8%) out of 83 possible respondents were investigated in this study. All the participants were involved in some type of international activities. Sixty-seven of the respondents have incorporated an international dimension into their Extension efforts in the past.

Sixty-one respondents (79.4%) expressed moderate and high level of interest in incorporating an international dimension into their future Extension efforts. Forty-four partakers (57%) were interested in participating in an out-of-country assignment. The majority of the participants have skills and experiences that would enhance international programming activities, including program planning, supervision, facilitation, and budget development/administration. Thirty-one participants (40.3) showed fair or higher level language skills other than English. However, the major barriers that prevented participants from incorporating an international dimension into their future Extension efforts were lack of financial support, lack of time, not a program priority, and lack of language skills. The barriers that prevented participants from participating in out-of-country assignments were lack of financial support, lack of time, lack of language skills, and family commitment. As a result, reducing the barriers and increasing motives are essential if future international involvement is to improve.

Diamonds in the Rough:
A Case Study of Team Development across Disciplines, Distances and Institutions

Susan Fritz, Associate Professor, Amy Boren, Graduate Assistant, and Valerie Egger, Staff Assistant
University of Nebraska-Lincoln

Multi-disciplinary, multi-institutional teams are becoming more prevalent in higher education although research has generally focused on teams formed in the same organizations and/or the same field. This ethnographic case study analyzed the experiences of ten faculty in a successful technology-intensive, agriculture-related project. The team's development mirrored Tuckman's four-stage model. Members reported differences in motivation, timeline pressure, variations in evaluation and rewards, the critical role of the leader, importance of cohesion, need for frequent interaction, and importance of developing trust. Contrary to previous research, the leader did not have higher status than members, and approached the role with empathy. Some members reported they lacked consideration in balancing project expectations with faculty assignments. It was concluded that these teams will continue to be hindered by similar obstacles if administrators do not acknowledge, evaluate and reward their efforts. Further research into the leader’s behaviors in successful multi-disciplinary, multi-institutional higher education teams is needed.

Self-Examination of the Regional Advisory Council of the National Agricultural Research Institute (INIA) of Uruguay

Ernesto Restaino Galup, Ph.D. Candidate, Michigan State University

The National Agricultural Research Institute (INIA) is a public, agricultural research institution located in Uruguay. Regional Advisory Councils (RAC) were created in 1990 as a participatory and collaborative mechanism to involve stakeholders in the planning and prioritization of the agricultural research agenda. This study was conducted to assess RAC members’ perception as about their participation in agriculture research policy making.

This research used a combination of mail survey and personal interviews. Questions were developed to ascertain the perceptions of RAC members about their selection process, representation, linkages with farmer organization, major barriers for appropriate functioning, areas of responsibilities, and relevance of the councils.
Findings indicate that the RAC are relevant mechanisms in guiding research and in providing linkages between research staff and stakeholders. Although almost half (46%) of the members were selected by INIA, there was a genuine representation of the major farmer and agricultural organizations at the councils. Lack of prior knowledge of RAC meeting purposes, lack of timely communication, and extended length of council members’ services were reported as major procedural barriers. Respondents also indicated as important barriers for a better performance the low renovation of council members and involvement of young people.

**Internet Use in the Texas-Mexico Initiative**

Jorge Adrian Garcia, Undergraduate Research Assistant
Gary J. Wingenbach, Assistant Professor
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Wayne T. Hamilton, Director of the Center for Grazing lands and Ranch Management  
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Internet use to enhance education and for research purposes has increased in lesser developed countries. Many countries, such as Mexico, have realized added benefit from high speed connections and increasing access and availability. However, Internet use for agricultural research purposes in northeast Mexico may not have progressed as much as it has in other countries. The purpose of this study was to analyze Internet use among students and faculty members participating in the Texas-Mexico Initiative through the Center for Grazinglands and Ranch Management. This study utilized qualitative research methods. Data were collected through interviews (one-on-one and focus groups). Internet access was available, but mostly for middle and upper class individuals or those students enrolled in a university. In the university setting, undergraduate students used the Internet mainly for personal reasons, such as e-mail, chats, and games. Graduate students used the Internet primarily for research reasons. Widespread availability to Internet resources beyond the university setting posed a barrier to its use among all participants. According to individual interviews, the best way to remove or diminish obstacles to using the Internet is through continued education. Universities in northeast Mexico were doing their best to improve computing facilities to encourage students and faculty to do more research using the Internet.

**Risk Perception, Attitudes, Knowledge and Safe Food Handling Behavior among Those 65 Years and Older**

Joye Gordon, Karen Penner, Brian Friel, John Raacke, Kristina Boone, and Valentina Remig  
Kansas State University

Foodborne illness is a significant problem in the United States, especially for older adults who are at a greater risk of illness due to lowered nutritional status, weakened general health, and decreased immune system function. The present study investigated food safety in older adults by addressing several areas, including the degree to which older adults perform adaptive food handling behaviors; the perceived risk of contracting foodborne illness; personal knowledge of safe food handling, and multiple measures of efficacy. Results indicated that older adults are consistent in their behaviors, attitudes, knowledge, perceptions of risk, and food handling behaviors. Though the results indicate that those over 65 exhibit behaviors consistent with safe food handling practices, areas still exist that food safety advocates need to address when combating maladaptive food safety behaviors.

**Global Leadership: The Language for the 21st Century Marketplace**

Marta M. Hartmann, Ph.D., University of Florida

The US Department of Agriculture Cooperative State Research, Education, and Extension Service (CSREES) has undertaken an initiative to infuse a global focus into teaching, research, and extension programs. The Global Interdependence in Agriculture (GII) initiative is set out to facilitate the effective engagement of educators, students, interventionists, staff, and the public in global issues concerning agriculture. The project hopes to move people from the understanding of these issues to action. To achieve this purpose, the GII effort has developed a frame to ensure the effectiveness of the
project in terms of communicative processes; from perspectives, vision, and thinking to learning and teaching. A model of leadership development to stimulate the process of moving from understanding to action, however, could be considered within the scope of the project. This paper offers a leadership model as a vehicle to transform understanding into action.

Drawing from a review of literature and theoretical arguments, a suggestion is made for the adoption of a leadership development model which addresses the complexity of the context of global interconnectedness while reflecting the realities of the 21st Century marketplace. This paper points to the necessity of continued examination of leadership models in the successful completion of the Global Interdependence in Agriculture (GII) initiative.

Effectiveness of Informal Education Methods in the Texas-Mexico Initiative

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Manuel Piña, Jr., Professor and Coordinator of International Activities
Wayne T. Hamilton, Director of the Center for Grazinglands and Ranch Management
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Selected agricultural producers in northeast Mexico who participated in the Texas Mexico Initiative through the Center for Grazinglands and Ranch Management have realized practical benefits in goat meat production since 1997. However, a lack of communication to broader groups of producers leads to a lack of knowledge, thus creating a gap through which innovations cannot be diffused (Freund, 1999). The purpose of this study was to evaluate informal educational methods used by three northeast Mexican agricultural universities to disseminate agricultural research results to agricultural producers in Mexico. Qualitative research methods were used. Data were collected via interviews (individual and focus groups) in the summer of 2003. The most popular informal educational method was using technicians who travel on site and work on a personal basis with producers to achieve optimal understanding of new technologies. Producers frequently took advantage of local livestock and/or feed grain associations to acquire new information. Although technology has allowed us to teach and communicate from thousands of miles away, nothing is more beneficial that working with an individual who demonstrates hands-on learning.

An Innovative Approach Using Experts to Develop a Distance International Course on Multi-Functional Agriculture

John Hillison, Professor and Jerry Gibson, Associate Professor, Virginia Tech

There has been increasing interest in international agriculture and courses teaching about it. At the same time, instruction on international agriculture topics varies a great deal from one college of agriculture to another. The purpose of this paper was to describe the innovative process used at Virginia Tech to develop a new graduate level course on international agriculture with the title “Developing Agricultural and Extension Programs in Sustainable Food Systems.” A secondary purpose was to share a successful course development procedure with other universities that might like to emulate it. A multi-step process was utilized to develop the new international agriculture course. The steps included establishing a five member core of respected faculty members from different institutions for a task force, each member of the task force was asked to name two additional respected faculty members to create a total of 15 task force members representing both domestic and international backgrounds, members of the task force wrote a suggested purpose for the course, departmental faculty choose the best combination for the accepted purpose of the course, based on the stated purpose task force members suggested topics to be taught, 78 non-duplicated topics were rated on a scale of 1 (definitely do not use) to 5 (definitely use), and statistical means on the topics were determined and used to establish content for the course. The process proved to be successful and created an innovative and useful course first taught in the spring semester of 2004.
4-H as a Catalyst for Enhancing “Global Literacy” in American Youth
Patreese D. Ingram and Rama B. Radhakrishna, The Pennsylvania State University

The 4-H organization is one of the oldest and largest experiential education programs for youth in the United States of America. For more than 100 years 4-H has helped American youth become responsible and capable citizens regardless of home and family life and socio-economic background. This paper examines the role 4-H can play to infuse global awareness and understanding among youth and children. Based on extensive review of literature and experience of authors, strategies for involving in 4-H in global literacy are discussed. 4-H has tremendous potential and opportunity to be a lead youth organization to infuse global literacy. Extension specialists and other international agricultural and extension educators should collaborate together to develop projects that focus on global awareness and understanding. For example, specialists and faculty can develop curricula relative to geography, major agricultural products in the world, trade relationships, foreign affairs, religion, language and culture, food habits, family structure and relationships, infrastructure, etc. All these topics could be developed into mini 4-H projects. For example, a project on origin of food and culture associated with food would be a great project for youth to explore. 4-H should take advantage of these opportunities to design and develop a project using technology. Using a game format, children can explore the origin of food and food habits of people around the world. Such an exploration helps children not only understand the food and food habits but also aids in the learning of geography, climatic conditions and horticulture concepts.

Experience, Perceptions, and Likelihood of Participating in International Opportunities among College of Agricultural and Life Science Students
Tracy Irani, Assistant Professor, Nick T. Place, Assistant Professor, University of Florida
Lisa Lundy, Doctoral Student, and Curt Friedel, Graduate Student, University of Florida

In an attempt to understand how agricultural experience may be related to interest in international learning programs and activities, a study was conducted among undergraduate and graduate students in the College of Agricultural and Life Sciences (CALS) at the University of Florida. The purpose of the study was to develop a better understanding of students’ prior experiences, perceptions and likelihood of participating in international learning opportunities made available to them while in college or university settings. To conduct the study, an online Web-based survey was administered to a random sample of CALS students. Results indicated that, in general, agricultural students have limited international background and experience with respect to international learning opportunities. Nevertheless, the level of interest in participating and willingness to travel to other regions of the world to engage in international activities was fairly high. A key implication of these findings is that low levels of prior experience and awareness may be potential barriers to student participation that might be addressed through intensive educational efforts designed to gradually introduce students to international experiences early on in their academic careers.

Utilizing International Students’ Critical Thinking Skill, Disposition, and Perceptions of and in Plant Biotechnology
Tracy Irani, Rick Rudd, Curt Friedel, Maria Gallo-Meagher, and Sharon DeFino, University of Florida

Of all the areas of agricultural science, plant biotechnology represents one of the most important “specific domains of knowledge” where the teaching of critical thinking skills will have great potential for enhancing the quality of education for students. But although there is significant research on critical thinking and its components as a set of general skills or dispositions, little research exists that has focused on the development of critical thinking within a specific content area, and with respect to exploring potential differences between U.S. and international audiences. Previous research indicates great contrasts between U.S. and European food and agricultural policy, law, culture and society, and historical/ethical perspectives, not only with respect to biotechnology, but also in the public approach to the sciences. To acquire baseline data on critical thinking dispositions and skills of domestic and international students and explore their perceptions of biotechnology, a descriptive survey utilizing a purposive sample
of undergraduate international students (n = 50) and domestic students (n = 27) taking part in a summer aboard program at Universiteit Utrecht was conducted.

Results indicated that domestic students appeared to be more accepting of plant biotechnology than international student respondents, while international students scored significantly lower in the critical thinking dispositions of engagement and innovativeness as well as their overall critical thinking disposition score. These findings suggest that more research is warranted to deeply examine the connection between critical thinking and both domestic and international perceptions of food biotechnology.

Personality and Strategy in Agriculture
Geoff Kaine, Ruakura Research Centre, New Zealand
Jean Sandall, University of New England, Australia
Denise Bewsell, Ruakura Research Centre, New Zealand

Our fundamental aim in this study was to determine whether locus of control influences producers’ strategies and business performance. If traits such as locus of control do influence producers’ behaviour in terms of choice of farm strategy, then extension programs promoting improved farm business management techniques may need to incorporate educational elements to influence producers’ perceptions of control.

The data used in the study were obtained from a mail questionnaire that was distributed to primary producers in the wheat-sheep zone of south-east Australia during the summer of 2001. We identified statistically significant relationships among producers’ locus of control, their farm strategies and farm business performance. In summary we found that producers with a strongly internal locus of control were

- More likely than other producers to adopt a prospective farm strategy.
- Less likely than other producers to experience low financial performance.

Conversely we found that producers with a strongly external locus of control were:

- More likely than other producers to adopt a defensive farm strategy.
- More likely than other producers to experience low financial performance.

These findings raise two key implications for the design of extension programs. The first key implication is that those producers most in need of upgrading their business skills may be the least likely to take advantage of extension programs offering such training. The second key implication is that the inclusion of activities aimed at increasing the internality of producers’ locus of control is likely to increase the adoption of new skills and ideas among primary producers.

HRM and HRD in Agricultural Extension Organisations in Iran: A Literature Review
Mostafa Karbasioun, Researcher at Education and Competence Studies Group, Wageningen University
Prof. Dr. Martin Mulder, Head of Education and Competence Studies Group, Wageningen University

Numerous organizations have increasingly realized that their most important resources are human. Furthermore, two important domains in the field of human resources have been distinguished: Human Resource Management (HRM), and Human Resource Development (HRD). These two fields are interrelated and have a significant influence on organizational performance. This is especially true in extension services, of which the major commitments are education, training, and development. Therefore, this research has focused upon to the situation of HRM and HRD in the agricultural extension system of Iran. Formal agricultural extension services began more than 50 years ago in Iran, and endeavors have been particularly accomplished in this field after the revolution of 1979. Nevertheless, there still are a number of barriers and restrictions which hampering extension procedures, and as a result extension, has not been appropriately successful or satisfactory for farmers throughout the years. In order to explore what could be done to support extension systems and facilitate its evolution; several studies have been conducted in Iran. These studies indicate that no sufficient efforts are being made towards HRD and HRM in agricultural extension in Iran. Therefore, this research pays specific attention to the obstacles in
the field of HRM/HRD in agricultural extension organizations in Iran. Finally, recommendations will be presented to overcome the barriers observed.

**Benefits of Engaging Graduate Students in Participatory Rural Appraisals**

Erik Kelling, Graduate Assistant and Thomas Bruening, Associate Professor, Penn State University

Participatory Rural Appraisal (PRA) is a needs assessment process that focuses on local farmer knowledge and identification of the needs of limited resources farmers. PRA seeks to empower farmers through engagement in the process. When farmers and community members understand and can agree on critical rural needs, they take the first step towards improvement of rural communities. The benefits of active learning help to develop students who are better prepared to meet the challenges of the workplace. The challenge to higher education is to develop effective learning opportunities that truly engage graduate students in learning.

Through active learning techniques, students can increase their level of involvement and become greater contributors to the education process. As universities increasingly seek alternative methods for educating their graduate students, active field-based research PRAs could provide new pedagogical methods. Students completed a modified PRA with limited resource farmers in Mato Grosso do Sul, Brazil. Results indicated that students gained team working skills, enhanced communication and international awareness. Students actively observed the lives of limited resource farmers through interviews, observations and learned the value of using a needs assessment tool through an active learning approach.

**The Importance of Industry/Extension Joint Development Programmes in a Relevant and Effective Extension Service**

Dr. Tom Kelly, Development Manager, Teagasc, Kildalton, Piltown, Co. Kilkenny, Ireland

Mr. Tom Kirley, Head of Administration, Teagasc, Oak Park, Carlow, Ireland

Mr. Tom O’Dwyer, Dairy Specialist, Teagasc, Kildalton, Piltown, Co. Kilkenny, Ireland

This paper shows the benefits and difficulties associated with balancing a public good role, a service role and industry funded development programmes role in one seamless service. Key questions addressed are:

- How do industry programmes influence advisory staff and farmers facing a rapidly changing environment?
- What are the synergies created by industry programmes and how do they arise?

A SWOT analysis of joint industry programmes identified the main strengths as positive synergies from more focused advice and common goals. The main weakness was the perception of commercial bias by extension staff and by clients. The opportunities arising from industry programmes were improved farmer confidence and client numbers while the threats were of loss of independence and risk of termination of the funding.

Joint industry programmes have helped the advisory service change to become less focused on services and more challenged by development. In addition, the renewal of industry contracts has helped the service to become more open to the need for evaluation of effectiveness. There are synergies which arise from joint programmes and these help the achievement of objectives by improving both advisers and farmers confidence. Through participation in joint industry programmes, the Teagasc advisory services have been exposed to the culture of the industry partners which has helped in a process of change. This paper concludes that there are benefits from involvement with industry programmes and that these are complimentary to the public good and service role of an effective and relevant extension service.

**Indigenous Knowledge and Skills for Multifunctional Agriculture in the Bambara Culture of Mali**

Dr. Morctar Kone and Dr. Mercy Akeredolu, University Of Mali

Multifunctional agriculture in the Bambara culture of Mali is dependent on improved agricultural production which is made possible by their indigenous knowledge and skills. Qualitative research tools
such as interviews, discussions, participant observations were used to obtained data from the 200 respondents randomly selected for this study. Food security, health preservation, animal feeding are some of the important roles played by agriculture while the most important function of agriculture outside food production is that of the supply of medicinal herbs, employment, income and animal feeds.

The Bambaras depend on their indigenous knowledge and skills because these have proven very effective over time and they were inherited from their parents. Soil identification, seed selection, seed preservation and treatment of seeds for planting among others are all done using indigenous knowledge and skills by the Bambaras. These knowledge and skills are usually accompanied by various sacrifices and rituals that were not disclosed to outsiders. Knowledge of the Indigenous knowledge and skills among the Bambara could form the basis for collaborative and cogenerative researches and the best approach for eco-sustainable agricultural development in Mali.

**Farmers’ Knowledge Networks: Facilitating Learning and Innovation for a Multi-functional Agriculture**

Margaret M. Kroma, Ph.D., Assistant Professor, Cornell University

This paper examines the role of agricultural networks in facilitating farmer innovations in complex agro-ecological farming systems through a qualitative study of a sample of organic farmers in the northeastern tier of New York State. Building on a knowledge systems and social learning, it illustrates how learning is triggered and diffused among a broader community of producers through interactive, participatory, and shared style of problem solving. Finally the paper links farmers’ social learning processes to extension through a critical reflection on the potential niches in organic farmer management for extension practice.

**Impacting Extension Workers’ Effectiveness: Understanding Organizational Justice**

Linda M. Kutilek, Ph.D., PHR, Associate Professor, Ohio State University Extension

The Extension worker’s job, and thus position responsibilities, is very complex. The Extension worker is often described as being “on the job” 24 hours a day, in their efforts to meet the developmental and educational needs of their clientele, address concerns of frustrated or struggling volunteers, and to serve as a source of information and support during times of community crisis. Many work and live in the community they support, and they are seen as a source of information, no matter the setting. These job complexities blur the lines between work, personal, and family time.

Within Extension, few studies had been conducted to identify employees’ abilities to utilize organizational policy to address concerns of work/life balance, and none were found that dealt with distributive, procedural, or interactional justice as they affected work/life policy implementation. OSU Extension has led the nation in identifying issues of work/life balance for Extension employees, and has focused on providing support and guidance to its’ own employees as they work to address their work/life balance priorities. This study:

- identified progress toward improving employee ability to address issues of work/life balance over the past five years;
- identified issues of organizational justice which may be affecting progress;
- identified or isolated groups within the system that may not receive the full range of benefits from the program;
- created a body of research on issues of organizational justice within Extension systems; and,
- identified needs for further research, policy, or organizational change.

**The Non-Formal Manager in Extension**

Jacqueline E. LaMuth, Associate Professor, Ohio State University

Extension agents and other professionals often say they are so busy doing their jobs there is no time left to be the professionals they trained to be. If asked what they do all day, they will probably respond that they do what they need to do to keep things going. They will offer a long list of activities
that clearly are part of a manager’s work but never mention the word “manager”. Newer employees often are frustrated by the incongruence between the emphasis of their job interview, their job description, and the work they actually do. This paper examines program agents and other professionals who work as non-formal managers—program professionals who may or may not be responsible for the work of paid assistants and volunteers and who are not officially designated as managers of their working unit or within their organization. They are expected to be prepared even though their job descriptions and job interviews barely refer to management skills.

Several common scenarios that can lead to these types of incongruent work situations are presented, along with a brief overview of management levels and functions, and a brief review of how managers tend to acquire their skills and knowledge. The impact on productivity and job satisfaction for the professional and the organization when management responsibilities are unclear, poorly defined or unspoken, and several strategies are offered to support professionals who struggle as unprepared non-formal managers, with suggestions on how to minimize and/or eliminate these frustrating situations.

**An Investigation into the Impact of Farm Labour use on Irish Suckler Beef Farms**
Hazel Leahy, Postgraduate Student and Dermot J. Ruane, Senior Lecturer, National University of Ireland Edward G. O' Riordan, Head of Centre, Teagasc, Meath, Ireland

Farm activity time available to undertake routine farm tasks is and will continue to be limited. Thus the approach taken and the time spent in undertaking farm tasks have major significance in the efficient use of farm labour. Case studies were conducted on 10 Irish suckler (cow calf) farms. The main research objectives were to gain an in-depth investigation into labour use on suckler farms, to identify areas of success with regards to labour efficiency and how the success has come about as well as to identify factors on farm associated with labour use. From the farms studied, it was found that there was a strong reliance on family labour and bigger farm were more likely to hire-in labour. Spring was the most labour demanding season of the year. Many labour saving practices were identified on farms over the busy spring calving period. Labour saving equipment was also identified on many farms. There was large variation in time management across the 10 farms studied. The main challenges faced by respondents included improvement of the work life balance. Farmers placed a high value on labour. This research indicated that agricultural educators need to be proactive on the impact of labour use on Irish suckler farms. There are many ways of educating farmers in effective labour use including: profiling of the issue in newsletters and in the farming media; demonstration of practices and facilities at extension events, as well as the provision of training courses and discussion group.

**Core Competencies:**

**A Systems Approach for Training and Organizational Development in Extension**
Richard T. Liles, Director, Personal and Organizational Development and R. David Mustian, Professor North Carolina State University

The authors present a rationale for developing core competencies for training and organizational development in extension. Core competencies are defined as “the basic knowledge, attitudes, skills, and observable behaviors that lead to excellence in the workplace.” Competency-based models can be used to create an infrastructure that promotes innovation and continuous learning in every dimension of an extension organization. Competency models are designed around the skills individuals and groups need to be effective now and in the future. Competencies must be tied directly to the mission and strategic issues of the organization. A ten-step model is offered for identifying, validating and developing core competencies for an extension training and organizational development system. The seven core competencies developed by North Carolina Cooperative Extension using this process are defined. These competencies are being used or adapted by several states in the Southern Extension Region of the United States, and extension organizations throughout the United States are beginning to develop competency-based models for training and development. Illustrations of the application of the core competencies in North Carolina are provided along with preliminary qualitative evidence of the impact of this approach.
The Self-Directed Learning Readiness of Extension Clientele in Doctor Arroyo, Nuevo Leon, Mexico: Implications for Teaching and Learning
James R. Linder, Texas A&M University
Sabrina Tuttle, University of Arizona
In-Heok Lee, Kayla M. Kohls, and James W. Hynes, Texas A&M University

The purpose of this study was to describe the level of self-directedness of selected extension clienteles in Doctor Arroyo, Nuevo Leon, Mexico. The population for this study included 44 farmers and ranchers attending participatory rural development workshops in Doctor Arroyo, Nuevo Leon, Mexico. Data were collected through hand delivered questionnaires. Overall, research participants mean Self-directed Learning Readiness Scores (SDLRS) were similar to the worldwide adult mean. Participants’ individual scores, however, tended to be either below average or above average. An implication exists that both pedagogically and andragogically based teaching methods need to be used by agricultural and extension educators to educate this particular clientele group.

Sustaining Community-based Programs: Examination of Relationships between Sustainability Factors and Program Results
Jay A. Mancini, Ph.D. and Lydia I. Marek, Ph.D., Virginia Polytechnic Institute and State University

A conceptual framework for evaluating community-based program sustainability is presented, and the empirical focus of the study is on the relationship between 7 sustainability elements (leadership competence, effective collaboration, understanding the community, demonstrating program results, strategic funding, staff involvement and integration, and program responsivity) and 3 middle range program results (meeting needs of at risk families, planning for program sustainability, and having confidence in project survival). Three samples of program professionals are surveyed about their perceptions of their programs (N=243, 58, and 55). Findings suggest all sustainability elements to some degree are related to these program results, with effective collaboration and program responsivity being relatively less important. Because there are many elements that contribute to aspects of sustainability, planning for sustainability can be targeted in particular areas. This program sustainability framework lends itself for use with community groups composed of program professionals, evaluators, and other stakeholders. Our empirical results suggest that middle range program results are affected by sustainability elements, which in turn are amenable to manipulation.

Reconsidering Graduate Programs for Students from Developing Countries
Larry E. Miller, Professor, The Ohio State University

This paper examines graduate programs in agricultural and extension education for students from developing nations who are studying at U. S. institutions. Implications are drawn for developing graduate programs that prepare individuals for the most likely career path of the individual. Such programs may not be congruent the current graduate programs in U. S. universities particularly with the present financial and other pressures on departments and faculty. How can AIAEE assist in creating more relevant programs of study?

ICT – Its Potential as a Channel for Enhanced Extension Services
Liam Morrow, Information Management Specialist, Teagasc, Kildalton, Piltown, Co. Kilkenny, Ireland
Dr. Tom Kelly, Development Manager South, Teagasc, Kildalton, Piltown, Co. Kilkenny, Ireland
Tom Kirley, Head of Administration, Teagasc, Oak Park, Carlow, Ireland

This paper explores the use of ICT as a channel for delivery of extension services. It outlines the Irish Government Strategy for the development of an Information Society in Ireland. It analyses how Teagasc has followed the government’s three strand ICT development process to develop ICT systems that help to improve its extension service.

The paper looks at the uptake of ICT by Irish farmers to date. 21% of Irish farmers have access to the Internet. This figure is low when compared to other similar countries. Farmers are one of the groups...
most at risk of exclusion from the Information Society in Ireland. Some of the barriers to the uptake of ICT at farm level are discussed. Low ICT skills and poor appreciation of the benefits of ICT are found to be major barriers. It concludes that the uptake of ICT is a gradual process and that a co-coordinated approach involving training, promotion, and provision of new ICT services that address user needs are key to increasing ICT uptake at farm level.

**Pest Management Practices among Small Scale Farmers in Kiambaa Division in the Central Province of Kenya**

Catherine N. Munyua, Phyllis F. Adams, and Rama B. Radhakrishna, The Pennsylvania State University

The purpose of this study was to examine the pest management practices used by small scale farmers in Kiambaa division in the Central province of Kenya. Data were obtained from a purposeful sample of 35 farmers. Descriptive statistics were used to analyze the data. Most of the farmers used pesticides to control pests on their farms. Many farmers were informed of non-chemical methods of pest management and gave descriptions of various organic alternatives. However, the farmers did not use the non-chemical methods and preferred to use chemical pesticides in pest management. Farmers indicated that although non-chemical pesticides were safe, their use involved risk because effectiveness could not be guaranteed unlike chemicals which gave fast and reliable results. Non-chemical methods were viewed to be time and labor intensive, an additional disadvantage. The findings imply that farmers favor chemical methods of pest management and are more concerned of short term goals of maintaining yields and not long term implications on health and the environment. Since the farmers are aware of alternative methods of pest management, extension educators can use this status as a ‘teachable moment’ to emphasize the importance of reducing dependence on chemical methods of pest management. More information should further be provided to assure farmers that non-chemical alternatives to chemical pesticides are effective and profitable in attaining diverse benefits and long-term production goals in agriculture.

**Evaluation of Student Perceptions of Technologies Used in the Delivery of an Online Course Preparing Students for International Development**

Theresa Pesl Murphrey, Visiting Assistant Professor, Texas A&M University
Kelly Jett Murphrey, Director, Center for Western Hemispheric Trade, Texas A&M University

The graduate course, Methods of Technological Change (AGED 640), is one of several courses taught at Texas A&M University that prepares students to manage international development projects. It was taught in Spring 2003 for the first time as an interactive online course. Only limited information is available documenting student perceptions of the different technologies being employed to deliver online courses. In order to determine how online courses can be better designed and delivered, this study evaluated student perceptions of the fourteen technologies (Centra, WebCT, video clips, audio lectures, moderated PowerPoint, audio unit introductions, text on screen, self-tests, graded quizzes, static graphics, animated graphics, page-turner educational pieces, Adobe Acrobat handouts, and discussion board) used to deliver AGED 640 online. Identification of the technologies that students perceive to be useful is essential to the development of effective online courses. Evaluation and synthesis of student responses reveal that the students found some of the fourteen technologies to be more useful than others in helping them to understand the course content. The informational technologies (i.e., page-turner educational pieces, text on screen, and audio lectures) were considered very useful for the majority of the students. In addition, students indicated that audio lectures were preferred over video lectures. The response to technologies that allowed interaction among students (i.e., Centra, Discussion Boards) was mixed.

**Faculty Perspectives on Strategies to Internationalize the Undergraduate Agricultural Curriculum**

Maria Navarro, Instructor, University of Georgia

To adapt to the new global system, internationalization is increasingly being accepted as a necessity in higher education. Although the process involves the research, service, and education components of academic institutions, many authors contend that the internationalization of the curriculum is the most important component of the process and that faculty are its main drivers and actors. While a
number of the issues involving internationalization are today very well documented, there is still little published information regarding the perspectives of random samples of faculty (as opposed to the perspectives of faculty directly involved in internationalization) regarding the strategies to internationalize the undergraduate curriculum.

The purpose of this study was to analyze perspectives of faculty in two Land-Grant Colleges of Agriculture regarding academic program and institutional strategies for the internationalization of the undergraduate agricultural curriculum. To gather data, the researcher employed a mixed method research approach, using a questionnaire with both quantitative and open-ended questions that was sent to a census of the teaching faculty of the two colleges, and also conducting eight one-hour interviews.

Faculty ranked mobility and infusion approaches as their preferred academic strategies for internationalization of the curriculum. When asked about incentives to participate in the internationalization process, they mentioned funds, “real” recognition, and release time. Also, faculty expressed a need for increased leadership, vision, and focus for the process. When looking at the academic and institutional strategies together, various patterns of association appeared.

**From the First Green Revolution to the Second: What Can Agricultural and Extension Educators Do to Help Transform the Lessons from the Past into Successes of the Future?**

Maria Navarro, Instructor, University of Georgia

In the middle of the 20th century the world was predicting a starvation catastrophe that was halted by the Green Revolution of the 1960s and 1970s. To address continued population growth and the unsolved problems of the Green Revolution’s “forgotten” lands and peoples, many hope for a new and different second Green Revolution. Supporters of a biotechnology-based revolution claim that it could increase crop quality and solve production problems in marginal lands in a manner that is environmentally benign and also appropriate for low-resource farmers. Critics base their arguments on often-cited secondary consequences of the Green Revolution together with concerns about biotechnology.

The purpose of the paper is to present approaches by which agricultural and extension educators can support and enhance a second Green Revolution. Some of these approaches include analysis of lessons learned in other development programs, learning, educating and planning for a "technology pull" instead of a "technology push," carrying out research to improve extension systems, addressing issues of equity and access, participating in public dialogue and information dissemination, networking and partnering with other development programs for comprehensive efforts, planning for alternative solutions, helping create public-private collaborations that favor small-farm agriculture, creating an enabling environment, advocating, lobbying, and communicating the urgency, advantages, and importance of agricultural development.

**Examination of Labour Efficiency on Irish Dairy Farms and Feasibility of Alternative Time Allotment to Retain Viability**

Bernadette O’Brien, Research Scientist, Teagasc, Fermoy, Co.Cork, Ireland

Kevin O’Donovan, PhD Candidate, National University of Ireland, Dublin, Belfield, Dublin 4, Ireland

David Gleeson, Teagasc, Dairy Production Department, Fermoy, Co.Cork, Ireland

Dermot J. Ruane, Senior Lecturer, National University of Ireland, Dublin, Belfield, Dublin 4, Ireland

The current inflexibility of dairy systems in terms of labour requirement means that dairy operators cannot easily adopt a multi-functional approach, which may assist in maintaining family farm income. Education in time management is a key element in the promotion of multi-functionality. The purpose of this study was to investigate the labour invested on dairy farms and the feasibility of reducing that labour to provide opportunity for alternative enterprises. Ninety-four dairy farms participated in the study. Proportionally 0.32, 0.28, 0.21 and 0.19 of farms were within milk quota groups 135 x103 to 250 x103 litres (Group 1), >250 x103 to 320 x103 litres (Group 2), >320 x103 to 500 x103 litres (Group 3) and >500 x103 to 1,500 x103 litres (Group 4), respectively. Participant farmers recorded the time taken to perform farm tasks, on consecutive 3 or 5-day periods on one occasion per month. The average dairy labour input per day for farms in milk quota groups 1, 2, 3 and 4 over the 12-month period was 7.0 h, 7.9 h, 9.6 h and 13.3 h, respectively. A daily time saving of 3.0 h and 2.2 h at the milking process and calf
care, respectively, was observed on the most efficient compared to the least efficient farms within quota group 1. The data indicated the possibility of reducing dairy labour input on these farms to 3.8 h per day or by 65%. Well-designed infrastructure and well managed practices employed on farms should facilitate labour efficiency and feasibility of multi-functionality.

Evaluation of the PEARL Project- Partnership for Enhancing Agriculture in Rwanda through Linkages (PEARL); A Collaboration of Michigan State University, The National University of Rwanda and Texas A&M University to Improve Agriculture and Rural Life in Rwanda
Dr. John M. O’Sullivan, Marketing Specialist, North Carolina A&T State University

The PEARL Project was established through funding from USAID in 2000 to assist the Government of Rwanda to rebuild the Agriculture School in the National University (UNR) and to bring about changes in the curriculum and work of the school faculty so that they become more relevant to the needs of the rural citizens of Rwanda. MSU and TAMU are the lead American institutions of higher learning in this USAID project. They have provided technical assistance to the National University of Rwanda to revise the curriculum, partner with in-country institutions and develop demonstration sites and market outlets for agricultural products. They also provided masters level training for sixteen faculty members who are completing studies in the US. Four years into the project and facing the need to write a new project plan, they asked for assistance with an evaluation of the project up to that point. This paper describes the development of that evaluation and lessons learned in evaluating a complex international agricultural development project.

Engaging the Periphery: Farmer Facilitators as an Alternative Approach for Constructive Collaboration with Small Farmers in Trinidad, WI
Kelly Payson, University of Florida
Wayne Ganpat, Extension Division, Trinidad, West Indies
Marta Hartmann, University of Florida
Len Peters, Grande Riviere United Farmers Association, Trinidad, West Indies
Nick Place, University of Florida

Public sector extension in developing countries is under financial pressure and facing concerns about accountability, efficiency, effectiveness (Riviera and Zijp, 2002) and its impact on small farmers, especially those at the periphery. There have been calls for reform. This paper responds to such calls, from a unique perspective. In an analysis of this issue the very notion of “extension” and the derived approaches, based on a source to recipient relationship, are reviewed. An alternative approach based on the concept of “engagement” is presented. Theoretical arguments and results from current research are used to explore how the concepts of “extension” and “engagement” are reflected in relationships with farmers and to evaluate a farmer-suggested approach of using “Farmer Facilitator(s)”. Investigations were carried out in three peripheral farming communities in Trinidad, WI using qualitative research methods, including participatory fieldwork, focus group discussions and several PRA tools and techniques.

Results confirmed a high level of dissatisfaction with the present system of extension delivery in all three communities and zeal to forge a new approach in which farmers have more participation. Farmers indicated that the “Farmer–Facilitator” approach can provide unique opportunities for engagement not only with government agencies but also with NGO’s, CBO’s and the many other organizations that seem to place special emphasis on communities at the periphery. Community driven interventions in the areas of training, policy formation, and land acquisition were identified as opportunities for engagement. The research also identified several issues that needed to be resolved before such an approach could be utilized. These centered on the structure and placement of the facilitator within the community, the need for human capacity building, and financial sustainability. However, the approach is flexible enough to allow for adaptation to the context of a specific community.

The issues addressed in this paper have relevance for other developing countries struggling to fashion an extension delivery system that is contextually appropriate, cost effective and efficient. As such, the findings point to the urgent need for continued examination of the proposed approach.
Making Collaborations Work for Children, Youth, and Families  
Daniel F. Perkins, Ph.D., Associate Professor, The Pennsylvania State University  
Lynne Borden, Ph.D. Extension Specialist, Associate Professor, University of Arizona  

Meeting the complex needs of today’s communities, in a time where there are fewer resources to address the growing demands on services, requires the multiple sectors of the community to come together to address issues such as family violence, poverty, poor educational systems and others. Collaborations offer one solution to these complex issues. A collaboration is a social group that brings together disparate parties with diverse perspectives and experiences. These collaborative groups comprised of, community groups and human service professionals are working together to develop innovative solutions to the issues facing our children, youth and families. Too frequently, however, collaborative groups run into a roadblock and cannot figure another route to take so they fold. Or sometimes-collaborative groups cannot seem to get past the “meeting to meet” phase. The purpose of this paper is to connect the theory and the practice of collaborative relationships to identify common roadblocks or reasons collaboration is unable to move forward. We examine the levels of linkages within the community and the factors needed to build and maintain an effective, successful collaboration. Five levels of community linkage are presented, these include: networking, cooperation, coordination, coalition, and collaboration. The purpose, structure, and process of each level are described in detail. Factors associated with collaborations are also presented and described in this paper. These factors can either promote or inhibit the effectiveness of collaboration, thus affecting its desired outcomes. Practical strategies for groups to assess their level of linkage and factors will be described during the conference presentation.

Effective Social and Extension Factors Involved in Adoption of Integrated Campaign in Control of Rice Stem Borer, (Chilo Suppressalis), A Case Study in Isfahan Province, Iran  
Gholamreza Pezeshki-Raad, Tarbiate Modares University, Iran  
Jafar Yaghoubi, Azad University, Iran  
Mohammad Masaeli, Zanjan University, Iran  

Rice is an important part of the food diet in Iran. Rice stem borer, (Chilo suppressalis) is a dominant pest of rice crop in Mobarakeh and Lengan counties of Isfahan. The purpose of this study was to examine effective factors involved in adoption of integrated management of rice stem borer, in Isfahan province. The study utilized descriptive survey research. The questionnaire and interview were used for data collection in this study. The population consisted of farmers living in the villages where Biological Control Plan conducted (N=6000). The population frame was obtained from Isfahan Agricultural Organization. The sample was obtained through cluster sampling (n=361). The researchers developed the survey instrument. Face and contact validity of the instrument was established using a panel of experts consisting of senior faculty members in Agricultural Extension and Education at the Tarbiat Modaress University. Further, the questionnaire was validated by agricultural officers of Isfahan Province. The result of reliability analysis indicated a value of 0.83 for Cronbach Alpha. The results of the study showed that, among the individual characteristics: there was a significant relationship between adoption of integrated management and education and sources of income. Among the extension characteristics: There is a significant relationship between application of extension agent recommendations and adoption of integrated campaign. Farmers, who were aware of biological control by entomologist, had high degree of adoption of integrated campaign. There is a significant relationship between adoption of integrated campaign and individual advisory to agricultural expert, agent, friends and scouting.

Making use of Nominal Group Techniques with New Extension Faculty to Determine How to Effectively Include Advisory Committee Members in Extension Programming  
Nick T. Place, Assistant Professor and Peter Fox, Graduate Student, University of Florida  

Advisory committee members are a key component of a true grassroots extension program that is focused upon meeting the educational needs of clientele. These community members typically have much to offer through their expertise, resources, community contacts and networking capabilities. Many agents
have become very adept at utilizing advisory committee members to multiply their efforts while further enhancing skills among these volunteers. Through active participation with the nominal group technique, new agents were able to understand how they could utilize this methodology with their clientele. Furthermore, through sharing ideas about involving advisory committee members, there are many practices that agents were able to learn from one another. The ideas that were generated fit within the major categories of Advisory Committee Management, Meeting Management and Involving Members in Extension Programming.

**Beliefs, Attitudes, Perceptions and Predictors of International Involvement among College of Agriculture and Life Science Students**
Nick T. Place, Assistant Professor, Tracy Irani, Assistant Professor, Curt Friedel, Graduate Student, and Lisa Lundy, Doctoral Student, University of Florida

A study was conducted to determine the best means to integrate global concepts into courses, develop new internationally-focused courses, and utilize mechanisms for study abroad experiences for students of the college of agriculture and life sciences at the University of Florida. To conduct the study, a 79 item web-based questionnaire was randomly sent to 800 of the 3861 total undergraduate and graduate students. Results showed that there was a low level of current knowledge of international opportunities among student respondents, but their attitudes were very positive toward pursuing international activities. Their ratings of a set of attributes related to skills possessed by students involved in international activities was above average, while their rating of the degree to which they possessed the attributes was in the average range. Areas which showed a substantial difference between importance and possession of attributes included “knowledge of what other countries’ culture has added to US society” and attributes relating to exports, marketing and humanitarian issues. The most significant predictor of intent toward international participation was year in college, followed by attitude, languages spoken and perceived knowledge. Based on these findings, the college needs to utilize ways of incorporating an international dimension into courses and increase awareness of opportunities within the college. The results of this study will be utilized to help internationalize the college towards bringing about the nationwide goal of generating globally ready graduates.

**An Exploration of Information-Seeking Behavior of Extension Managers and Specialists in Iran**
Gholamreza Pezeshki-Raad, Professor and Nasser Zamani, Graduate Student, Tarbiat Modares University
Rama Radhakrishna, Associate Professor, The Pennsylvania University

Knowledge about the information-seeking behavior and information use of individuals is crucial for effectively meeting their information needs. Extension managers and specialists have a key role in agricultural information systems and therefore meeting their information needs affect flow of agricultural information. The purpose of this descriptive study was to explore information-seeking behavior of extension managers and specialists in Iran. The population consisted of 38 public extension managers across the country and 175 public extension specialists who work for Deputy of Extension and Farming System, Ministry of Jihad-e Agriculture. Results showed that the main motivation for seeking career information by both public extension managers and specialists was because they are interested in developing their own career information. The top three mostly used information sources by extension managers and specialists were “Persian books”, “Persian scientific magazines”, and “scientific-technical reports. Regarding communication channels, “interpersonal communication with colleagues”, “in-service training courses”, and “scientific-technical conventions” were ranked respectively as the three top communication channels used by respondents. Results also showed that the majority of extension managers and specialists who believed their organization does not support them to seek and get information, reported “lack of time flexibility for doing job tasks” as the main hurdle to seeking information. There was a significant negative relationship between managers’ years of extension work and information-seeking behavior. In case of specialists, a significant positive relationship was found between years of education and level of job satisfaction with their information seeking behavior.
Evaluating the Impact of 4-H Japanese Exchange Program
Rama B. Radhakrishna and Patreese D. Ingram, The Pennsylvania State University

The overall purpose of this study was to assess the impact of 4-H high school Japanese Exchange program on participants and host families. Specifically, this study assessed the Japanese exchange program in terms of arrival and departure orientation programs, 4-H program expectations, host family expectations, program coordination, and school and community experience. Descriptive research methodology was employed to conduct the study. A total of 52 2002-03 program participants responded to a 50 item questionnaire administered at the end of the program. Descriptive statistics were used to summarize the data. Overall, findings indicated that participants were pleased with the arrival and departure orientation program. A substantial majority of participants indicated that the 4-H exchange program met their expectations relative to host family (78.4%), school (72.5%), and local coordinator (60.8%). Ninety-eight percent of the exchange students indicated that they liked the high school. Classes were difficult for nearly 61% of the students, while 55% of the students needed some extra help. Most students (77%) reported that they enjoyed school and community service and were able to make friends and participate in various community activities and events (92%).

Sixty-seven percent of the participants reported that their overall 4-H experience as “excellent,” while 29% said “good.” The service received from 4-H, friendliness and professionalism was also rated high by participants (35% excellent, 48% good). Seventy-one percent indicated that they would recommend the 4-H exchange program to others in their home country. As a result of participating in 4-H Exchange program participants agreed that they better understand intercultural sensitivity and global perspectives. Recommendations from the study included: 1) development of an assessment tool to document exchange program outcomes and 2) a follow-up study of all program participants to determine the programs’ impact on later life experiences.

Taking the Ultimate Step by Placing Economic Values on Extension Program Impacts
John G. Richardson, Agricultural Programs Accountability Manager, NC State University
Charles L. Moore, Associate Head and Department Extension Leader, NC State University
George J. Young, Extension Specialist and Professor, Auburn University

Changing trends reflect the desire of policy makers and governments to assure that extension programs produce viable and tangible results. Nearly always, such results when communicated as economic benefits, gain the attention of policy makers, the public, administrators, and the users themselves. Results that are mere descriptions or qualifications tend to be forgotten. Being able to document and defend the economic benefits of these programs are vital for continued public support. This paper presents a rationale for program valuation, ways and means of identifying impacts, and describes the various means for placing economic values on program impacts. Twelve different means of placing values extension programs are presented. Such valuation means may be multi-faceted or may be valued using a single means. These are: Reduced costs, Increased income, Savings, Increased productivity, Value added, Expected values, Alternative opportunity cost of capital, Willingness to pay, Multiplier effect, How we are better off, Non-market benefits (cost effectiveness), and Indirect values. Each of these means of valuing is described by using actual extension program examples. Some examples of program success stories that involve estimating the economic value of programs are also presented. These success stories and actual program examples are intended to provide extension workers with tools required for recognizing and reporting the economic value of their successful Extension programs as well as providing the means for selecting appropriate methods for valuing those program successes.

The Continuing Role of Government in Pluralistic Extension Systems
William M. Rivera, Associate Professor, University of Maryland, College Park
Gary Alex, International Consultant

This paper underscores the position that “strong, effective, and efficient governments are essential to development, for they alone can create the enabling environment required for the private sector and civil society to flourish.” Ismail Serageldin (1996). The scope of public sector roles and responsibilities in
extension is reviewed along with an in-depth discussion of ten key interdependencies of government and pluralistic extension systems. Although some countries are reconsidering their public role regarding extension, the developing world is still pressured to limit state involvement except as an enabler of the private sector and as a funding agent for private-sector provision of extension services. However, institutional reform through privatizing schemes such as contracting with the private sector and the establishment of partnerships in the provision of extension services is not always an easy process. The paper posits that within the coming decade, policy makers worldwide will find themselves challenged to confront again the role of national government vis-à-vis extension’s institutional pluralism and the challenges of critical development issues.

**Communication Processes in the Texas-Mexico Initiative**

Jodi Rogers, Undergraduate Research Assistant
Gary J. Wingenbach, Assistant Professor
Manuel Piña, Jr., Professor and Coordinator of International Activities
Wayne T. Hamilton, Director of the Center for Grazinglands and Ranch Management
Texas A&M University

Communication processes used to disseminate agricultural research results to the public in bi-national agricultural development projects may be the same today as were evidenced many decades ago, despite the prevalence of the Internet. The purpose of this study was to investigate communication methods currently used by university faculty, students, producers, producer associations and those collaborating with higher learning institutions to disseminate agricultural information to the public in northeast Mexico. Three main forms of communication processes were observed among the participating universities and organizations. Researchers primarily used electronic mail to communicate with other research partners, telephones were a very important method of communication, and collaboration with governmental agencies was a third form that researchers used to communicate the results of their research to the public. Scientific journals, academic conferences and collaborative research were the main sources of expert information received by professional investigators. Participating researchers, students and producer associations were very interested in pursuing bi-national collaborative research. Student and faculty exchange programs were viewed favorably and encouraged by all participants in the Texas-Mexico Initiative.

**Using Sensemaking to Interpret Stories about Water Use Efficiency Practice**

Maria Rose, Victorian Department of Primary Industries Australia
Dr. Ruth Beilin, Director, Office for Environmental Programs, University of Melbourne
Dr. Mark Paine, Principal Research Fellow, University of Melbourne

For an effective ‘non-coercive’ change to more sustainable forms of agriculture a distinction between instrumental, strategic and communicative rationality in the use of intervention is required. This research focuses on identifying how the complex decision making associated with multiple extension intervention initiatives leads to change in water use efficiency practice and hypothesizes that communicative intervention is a key part of the change process. Postmodern analysis of story telling suggests the use of narratives is limited if they are ‘without context’. Similarly, the stories that practitioners and farmers tell about why they accept an extension intervention requires an understanding of their particular situation and practice. The concept of ‘sensemaking’ allows an explicit investigation of their decisions, the construction of their stories; and the subsequent outcomes at an individual and at a collective level. Enabling and disabling learning triggers are identified as part of the ‘sensemaking’ process.

The research outcomes suggest that the rich picture and ‘thick description’ of this type of analysis reinforces farmer and practitioner identification with their dairy farming community involved in improving water use efficiency practice. The transition from individual to group approach in one program indicates the potential for change when reflective learning is part of the communicative intervention process. Our research identifies synergies, recognizing the relationship between how an emerging
appreciation of people’s view points about water use efficiency and intended actions can facilitate longer term change at the individual level and through group activities towards advocacy.

**A Multifunctional Web-based Extension Curriculum Targeting Teens as Teachers: The North Carolina 4-H TRY-IT! Project (Teens Reaching Youth through Innovative Teams!)**

R. Dale Safrit, Ed.D., Associate Professor, Harriett C. Edwards, Ed.D., Extension Associate, and R. Warren Flood, Ph.D., Extension Associate, North Carolina State University

One of the most discussed topics in contemporary education is that of distance education. While the use of distance learning strategies has been demonstrated in the teaching of adult Extension staff and clientele and the potentials for distance education applications in international agricultural education settings are being explored; little (if any) literature exists documenting Extension/agricultural education program initiatives utilizing Web-based distance education technologies to teach youth. Teens Reaching Youth through Innovative Teams! (TRY-IT!) is the second generation of a cross-peer educational program. TRY-IT! utilizes Web-based modules to develop and expand teens’ abilities and opportunities to teach younger youth, under the guidance of an adult volunteer coach. Multi-functional pedagogical strategies and distance technologies are incorporated within individual modules to: (1) maximize appeal to teen audiences, (2) promote active learner engagement, and (3) maximize learner retention of module content.

The purpose of this exploratory, descriptive research was to investigate teen participants’ reactions to the two initial TRY-IT! modules regarding eight specific criteria for assessing Web-based programs. The researchers developed a quantitative methodology using a written questionnaire to collect data from a convenience sample. The findings showed two pilot modules to be well designed and constructed. None of the eight individual constructs assessed were evaluated by teens as being below the median of the respective construct’s overall range. The two modules evaluated successfully integrate an effective combination of content, teaching pedagogies, and Web based instructional design.

**Leadership Practices of Formal and Informal Leaders in The Ohio State University College of Food, Agricultural and Environmental Sciences**

R. Dale Safrit, Associate Professor & Extension Specialist, North Carolina State University
Chuck Gamble, Associate Director, Farm Science Review, The Ohio State University
Joseph Gliem, Associate Professor and Rosemary Gliem, Extension Data Center, Ohio State University

The purpose of this descriptive-correlational census study was to describe leadership practices of 67 formal leaders from the following areas: the Administrative Cabinet, Extension Administrative Cabinet, OARDC Director’s Cabinet, department chairs/heads, and the Vice President’s Advisory Council in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. Relationships between personal and professional variables and leadership practices were investigated. Also, relationships between the respondents’ leadership practices scores on the Multifactor Leadership Questionnaire and the Leadership Practices Inventory-Individual Contributor were investigated along with personal and professional demographics. A final response rate of 90.5% was achieved. All five groups indicated that they practiced the following leadership constructs “fairly often”: the five transformational constructs, the contingent reward construct which is a part of transactional leadership, and the outcomes of leadership. The five leadership constructs investigated were challenging the process, inspiring a shared vision, enable others to act, modeling the way, and encouraging the heart. All five groups practiced the five constructs “fairly often” which would indicate that the participants view themselves as leaders and practice the constructs of leadership on a routine basis.

**Profiling Female Agricultural Cooperative Extension Agents in the United States**

Brenda Seevers, Professor, New Mexico State University
Billye Foster, Associate Professor, The University of Arizona

Knowledge about women who have pioneered positions in agricultural and extension education can provide valuable information for upcoming generations of female educators.
The purpose of this study was to create a profile of women employed by the Cooperative Extension Service with agricultural program responsibilities at the county level (N = 488). A mail questionaire was sent and a final response rate of 79% was received. Female county agents with agricultural program responsibilities are significantly under-represented, comprising only about 11.4 percent of the total population. In establishing this profile, women agricultural agents were found to be predominately Caucasian, between the ages of 26-30 and 41-50, are married, have children and had previous work experience in agricultural related areas. Although subjects reported being in regular contact with other women in the profession, few women identified other women as their primary role models. Despite a high level of job satisfaction, almost 60% of the women felt they had experienced barriers and challenges in their profession as a result of gender. Barriers most commonly cited were: lack of acceptance from peers and clientele, the “good old boy network; the need to “prove oneself”, limited mentors and role models, and balancing work and family.

Teachers’ Perceptions toward Curriculum Reform and In-service Training Programs in Chinese Agricultural Schools
Xiaorong Shao, Ph.D. Candidate and Thomas Bruening, Associate Professor, Penn State University

Teachers have been considered the most important force in educational reforms. As Chinese agricultural schools have gradually transferred from an academic institution to vocational education, the need for renewing teachers’ attitudes, knowledge, and skills to implement the curriculum innovations is evident. The purpose of the study was to describe teachers’ perceptions toward teacher training and the reforms of curriculum and instruction in agricultural schools in China. The results revealed that teachers supported curriculum reform and they were interested in trying new ideas in their teaching practice. They believed that high quality of teacher training and professional development programs would help them to carry out the reform initiatives in curriculum and instruction. Therefore, policy makers and administrators should seize this opportunity to develop effective teacher education programs and address the needs of teachers in the process. To resolve this long-stand problem facing agricultural teachers that lack formal pedagogy training in China, universities should strengthen their efforts to provide both pre-and in-service training for agricultural teachers. The role of university in teacher education should be legitimized and mandated. Until teacher education in agriculture is a part of higher education, any reform efforts in teacher training would be merely a temporary solution.

Identifying Problems Facing Smallholder South African Farmers through Participatory Rural Appraisals--Case Studies with Smallholder Farmers
Xiaorong Shao and Vladimir Konovalchuk, Ph.D. Candidates, Brian Clark, Graduate Student and Thomas Bruening, Associate Professor, Penn State University

Smallholder farming is a growing agricultural phenomenon in rural communities in South Africa. However, these smallholder farmers have encountered many problems and constraints in their farming operations. The problems were partially caused by the apartheid policies implemented in the past. During the country’s democratization since 1994, government and foreign aid organizations have started making efforts to help smallholder agriculture. A research team mixed with people from both the United States and South Africa employed Participatory Rural Appraisal (PRA) methods to identify the problems facing South African smallholder farmers. PRA is considered as a bottom-up approach that helps local communities to identify the problems and work out solutions to their problems with minimum influence from outsiders. The purpose of this paper is to describe the characteristics of smallholder farmers and their farming activities in Limpopo province of South Africa. The problems facing the smallholder farmers are identified and strategies for resolving problems are also discussed in the paper. The data collected during the PRA process revealed that the majority of smallholder farmers were black females with low education levels and each household owned several small plots of land. Most of them grew vegetables and on gardening projects subsidized either by the government or international agencies. The top two programs facing smallholder agriculture were inadequate technical information to support farming and lack of formal market and transportation infrastructure for agricultural products. Therefore, it
is critical for government to address these problems and help the development of smallholder agriculture during transition.

Assessing the Impacts of Collaborative Based Extension Programs to Address Natural Resource Conflicts
Loretta Singletary, Associate Professor and Extension Educator, University of Nevada, Reno
Steven E. Daniels, Director, Western Center for Rural Development, Utah State University

Collaborative approaches for managing natural resource conflicts have become commonplace. Surprisingly, little research has focused on the role that Cooperative Extension professionals might play in this arena despite the fact that Extension programs historically combine natural resource management education with collaborative processes. Perhaps the potential contributions that collaborative-based Extension programs offer go unrecognized, due in part to lack of an evaluative component. Participants in a collaborative-based Extension program to address a water conflict in California and Nevada provided data for the study. Impacts of the program are as follows: increased awareness of the conflict and knowledge about underlying issues; provided a platform for participants to hear diverse viewpoints, technical concerns, and interact and network with diverse stakeholders; improved communication and relationship building skills; increased knowledge about collaboratively managing a conflict. Further, the Extension program received high marks for overall program design in terms of facilitation, quantity and quality of information provided, treatment of participants and educational approaches used. Goals for the study are not to report program success necessarily but rather provide an example of impact measurement criteria that may be useful to other Extension professionals designing and implementing collaborative-based programs.

An Examination of the Extent of Innovation Discontinuance, the Motivations of Farmers Who Discontinue an Innovation, and Implications for Extension
A. Sofranko, B. Swanson, and M. Samy, University of Illinois

Farmers in Illinois are gradually shifting from production of bulk commodities to more specialized agricultural products. Value-enhanced grain production is an agricultural innovation, requiring new types and sources of information, different handling and storage practices, accessing new markets, paying greater attention to quality and identity-preservation, and negotiating contracts. Social scientists and extension educators have viewed agricultural innovations from the perspective of the traditional adoption-diffusion paradigm, with its emphasis on promoting adoption. One gap in this paradigm is its difficulty understanding “de-adoption,” or the discontinuation of an innovation. This paper addresses questions related to the extent of discontinuation and the reasons behind it. The research concentrates in one area of Illinois, on 785 farmers who reported on their adoption of value-enhanced grain over a four-year period. The objectives are to determine the extent of farmers’ continuation and discontinuation, and to examine the reasons why 140 producers discontinued production of value-enhanced corn and soybeans. Results illustrate an increase in producers adopting value-enhanced grains, and they are dedicating larger acreages to them. However, 18 percent discontinued the innovation during the time period studied. Income was a major reason, but not the whole explanation. The reasons farmers cited suggest ways in which extension staff might be involved in this particular innovation, and the difficulties attendant upon their greater involvement. Given some of the trends underway in agriculture, and the pressure facing extension, extension crop specialists may find it difficult adapting to the value-enhanced grain production trends.

Wonderwise 4-H: Following in the Footsteps of Women Scientists
Amy N. Spiegel and S. Kay Rockwell, University of Nebraska-Lincoln
Deanna S. Acklie, College of St. Mary
Saundra Wever Frerichs, King’s College-London
Kathleen French and Judy Diamond, University of Nebraska-Lincoln
Wonderwise 4-H: Women in Science introduces youth to contemporary female scientists in their labs, out in the field, and with their families through nine interactive multimedia kits. Youth learn about the scientist’s occupation and participate in hands-on science activities similar to the actual work of a female scientist role model. Using role models was effective in improving youths’ attitudes about science through engaging activities and realistic videos. A web survey of 150 adult youth leaders showed Wonderwise 4-H brings “real science” into youths’ lives by (a) engaging them in actual scientific activities, (b) increasing their understanding of what science is, and (c) broadening their view of who scientists are, what they do, and where they work. It encourages youth to pursue science in their future by (a) helping them become more confident and capable at scientific endeavors, (b) increasing their understanding of the possibilities of a science career, and (c) connecting them in a personal way with scientist role models.

Wonderwise 4-H is a model for how museums and 4-H can work together to improve nonformal science education; 4-H took advantage of a unique opportunity, and the museum reached beyond its usual constituents. Project dissemination was primarily through existing 4-H networks in partner states. The success of this project suggests that opportunities for science learning can be enhanced through innovative collaborations of nonformal educational partners.

Wonderwise 4-H is included in the 2003 National 4-H Curriculum Collection. For more information see www.wonderwise.unl.edu.

Perceptions and Use of Volunteers in International Agricultural and Extension Development
Nicole Stedman, Doctoral Student and Dr. Nick Place, Assistant Professor, University of Florida

The Cooperative Extension Service (CES) consistently depends upon volunteers as a resource in bringing new information and technology to its clientele. In the United States alone, it is reported that one in eight Americans contributed to the efforts of the CES. Seevers, Graham, Gamon, and Conklin wrote, “Volunteers are the lifeblood of Extension” (1997). As the CES enters the new era of internationalization efforts and developing a presence globally, what impact can volunteers make? This study makes an effort to address concerns related to the status of volunteers, including their current perceptions and uses in international agricultural and extension development.

The study requested responses from 84 members of AIAEE with 38 useable responses (response rate of 54%). The study found that 26.3% (n=10) reported using volunteers in international agricultural extension and development. However, the organizational readiness scale indicated that 50% of respondents’ (n=19) organizations were perceived as ready to use volunteers in an international capacity. Those using volunteers were also asked to respond to a perceptions scale to gauge the overall perception of volunteers and volunteer programs. Of those, all responded favorably, with 41% (n=5) obtaining a score of high value and capacity for volunteers within the organization. Of the 73.7% responding that their organization does not use volunteers in an international capacity, five percent showed a high level or number of barriers to using volunteers, with 30% indicating that there were no perceived barriers to using volunteers in an international capacity.

While this study provides a benchmark for the current uses and perceptions of volunteers in international agricultural extension and development, there is still work to be done in fully understanding why more organizations do not utilize volunteers. Further exploration of this topic can lead to the expansion of extension related programs across borders, bringing more resources to the global community.

Food Mountain–a Multi-Functional Agricultural Extension Project in North West Province, South Africa

J B Stevens (Ben), Manager, Extension Services, Bojanala Region, Department of Agriculture, Conservation & Environment, North West Province, South Africa

The North West Province is among the Provinces in South Africa, which are significantly affected by poverty. 37% of households in the province are classified as poor, while 14% of households have no income. To address this problem the province established a poverty alleviation programme: “Mobilising The Poor To Feed Themselves”. This paper describes the multifunctional project: “Food
Mountain” as part of the Integrated Food Security Programme. The poorest of the poor are identified in certain villages that are ranked according to a poverty index. They first receive food parcels and then agricultural starter packs in the form of vegetable seedlings and chickens. The beneficiaries of the project are trained in production as well as nutrition. This project can be a solution to alleviate poverty and hunger through agriculture.

**Information Technology Knowledge and Skills of Agricultural Researchers in Botswana**
Stephen Kayode Subair, Botswana College of Agriculture
Florence Kgangkenna, Gaborone Senior Secondary School, Gaborone, Botswana

This study was conducted to determine the level of information technology use among all the 39 lecturers of Botswana College of Agriculture (BCA) and 24 researchers of the Department of Agricultural Research (DAR) in Botswana. The questionnaire administered was developed around the domains which literature has asserted could contribute to the use of information technology in agricultural research. The questionnaire was validated and the reliability estimates calculated. The data collected were analysed using frequencies, means, percentages and rankings. The study revealed that the researchers placed a high value on information technology in agriculture research, but they possessed insufficient knowledge and skills of software and general IT use.

**Building a Public-Private Strategy for Global Market Development: Refocusing Research and Extension to Serve Small-Scale Farmers in Egypt**
Burton E. Swanson and Mohamed M. Samy, University of Illinois at Urbana-Champaign

The phenomenon of globalization is rapidly changing how the world food system operates. In particular, multinational firms are rapidly moving to capture major urban markets in both developed and developing countries through vertically integrated systems. In the process, they are linking with large-scale producers who can supply uniform products to specification and on schedule. If this phenomenon continues unchecked, small farm households in developing countries will be further marginalized, resulting in increased rural poverty, hunger and environmental degradation.

This paper describes a new project in Egypt that is designed to assist small-scale farmers to become players in the global food system. The basic premise of the paper is that by focusing on high-value, labor-intensive horticultural crops, small-farmers can participate in these global markets and, in the process, improve their household income and quality of life. However, to do so they need assistance from research and extension in knowing what and how to grow specific high value horticultural crops. In addition, they need additional information about market specifications in key markets, as well as information about international marketing channels so they can successfully partner with reliable export firms.

The paper outlines the fundamental factors that need to be considered in developing a successful global market development strategy. The paper then outlines the approach being implemented through the USAID funded Agricultural Export for Rural Income project in Egypt to enable research and extension to partner with the private sector firms and nongovernmental organizations (NGOs) in assisting small farmers to supplying key markets in the European Union (EU). This paper has direct implications for research and extension systems in other developing countries that seek to reduce rural poverty by increasing small farm household income and employment through diversification into high-value agricultural products.

**The Globalized Extension System – Information is Global; Engagement is Local**
Jerold R. Thomas, District Director and Co-Interim Program Leader, Ohio State University Extension
Daney Jackson, Associate Director, Penn State Cooperative Extension

We explore current trends that are forcing a restructuring of Extension Systems. These include a move to a new economy, technology, and organizational changes. We believe that for Extension Systems to be viable they will need to produce more local engagement and information. Serving as a router of centralized information is no longer a feasible option. Specific implications discussed include:
Beyond Technical Solutions: A Dynamic Approach to Problem Solving in an Era of Multifunctional Agriculture and Post-modern Extension Work
Terrence W. Thomas, Associate Professor, North Carolina A&T State University
Satish Verma, Professor, Louisiana State University Agricultural Center
Benjamin Gray, North Carolina A&T State University

In the post modern world, solutions to many problems in Extension and agriculture demand formulations that go beyond the obvious technical solutions, i.e., solutions that depend solely on the prescriptions of the disciplines that support practice in the particular area where the problem is manifested. Formulating a solution is further complicated because there are several stakeholders with a vested interest in these issues and problems; they, along with scientists and professionals from disparate disciplines, bring differing views and competing interests to the problem solving effort. The challenge for Extension will be to assist stakeholders use problem structuring techniques to work with these differing views to define the “right problem.” In this paper, we propose a problem formulation model that Extension staff could adopt to collect, analyze, and interpret situation data at county/multi-county/state levels in a critical manner and more precisely formulate “real” problems that need to be addressed in the complex, dynamic environment that prevails today.

Creating a Student Focused Study Abroad Experience: Looking Forward in Programming Design
Dr. Paula M. Teig, Instructional Systems and Charles R. Steiner, Graduate Student, Iowa State University

Study abroad experiences provide students with the opportunity to gain necessary skills to compete and prosper in agriculture. Collegiate students have an increased knowledge base and personal experiences that can have an impact on the type of study abroad experience that best suits them. An Australian study abroad program was developed to allow students the opportunity to become involved in the planning of the program and gain some sense of ownership toward the overall study abroad experience. The study abroad trip along with the pre-trip course was designed with active learning strategies as a foundation. The students were interviewed and observed to provide information related to the benefits and/or limitations of this type of program design. An interpretive qualitative data analysis provides some benefits for allocating the necessary time and effort needed to plan this type of student-centered study abroad program for students. It explores the development of the curriculum, course, and trip while analyzing the overall impacts on the program leaders and students.

Perceptions of Livestock Extension Education Delivery among Dairy Producers in the North Coast of Honduras
Elena María Toro, Graduate Student and Dr. Nick T. Place, Assistant Professor, University of Florida

Agriculture is changing in many ways, for both producers and for the institutions that serve them, including extension. The participation of farmers in these new economic relationships demands new skills and knowledge, new communication networks among like-minded producers (Swanson, et al., 2001). The main purpose of this study was to determine the perceptions of dairy farmers on extension’s educational delivery in the northern coast of Honduras as a result of the effects of globalization. The design for this study was descriptive research. Structured interview guides were developed for farmers, service providers and farmer association’s board members. Two groups of farmers were studied. The first group was made up of forty members of 20 Centros de Recolección y Enfriamiento de Leche (CREL). CREL are farmer owned milk collection and cooling centers located along the north coast of Honduras. The second group was made of 10 large farmers selected based on the leadership they provide to the industry; they have no affiliation to CRELs. A stratified sample based on location and length of operation of the CREL was used to determine members to be interviewed for CREL members. Results show that dairy farmers in the North Coast of Honduras have limited access to formal extension services. Most of the farmers have been exposed to sporadic, short-term technical interventions that do not conduct follow up activities. Service
providers like concentrate and veterinary supply companies offer programs on a regular basis. Farmer associations encourage and sponsor most educational programs. Still, the quality of these programs is extremely variable. The most common delivery methods used are one-day seminars, field days and farm visits. Farmers prefer participating in programs were both foundational theory and hands-on and applicable practice are used to deliver new knowledge. Long term educational needs for dairy farmers are not limited to technical aspects of milk production. The need to train farm owners as well as workers is a major issue for the industry. Leadership training and program development are key areas that extension service providers must target in order to make positive impacts on the dairy industry of Honduras.

**Delivery Strategies Matrices for Selected Villagers in Northeastern Mexico**
Sabrina Tuttle, Gila County Cooperative Extension, University of Arizona
James R. Lindner and Kim E. Dooley, Texas A&M University

The research study focused on exploring the relationships between delivery strategies and their perceived benefits and preferences in two villages in northeastern Mexico. The researcher employed participatory rural appraisal and qualitative research techniques to gather data over a three-month period, during a larger study. The researcher used the delivery strategy matrix to gather data in the two villages. The researcher conducted the delivery strategy matrix activities with separate focus groups of men and women in both communities. Each focus group ranked specific delivery strategies according to their benefits, reaching consensus on the level of importance of preferred delivery methods according to gender and community. Men and women in both communities favored hands-on delivery strategies that included a social component and offered an opportunity for innovation. Certain delivery methods were perceived as most important with regards to specific benefits and were associated with the categories of innovation, social behavior, and hands on activities. The researcher classed specific delivery strategies as most pertinent for each these three categories. Although this study’s results cannot be generalized, researchers and extension personnel can use the delivery strategies matrix activity used in this study in other communities to determine culturally appropriate delivery strategies, encouraging improved functioning of extension programs.

**Assessing Technology-Assisted Learning Readiness and Willingness of Mexican University Faculty and Administrators Involved in Biotechnology**
Patricia Villalobos Peñalosa, Graduate Assistant, Theresa Pesl Murphrey, Visiting Assistant Professor, Kelly Jett Murphrey, Director, Center for Western Trade, Manuel Piña, Jr., Associate Professor, and Andrés de la Concha-Bermejillo, Associate Professor, Texas A&M University

The Texas Agricultural Experiment Station and three universities from northeast Mexico (Universidad Autónoma de Nuevo León; Universidad Autónoma de Tamaulipas; and Universidad Autónoma Agraria Antonio Narro) are engaged in a project, “Teaching, Researching, and Applying Biotechnology in Mexico,” supported by the Association Liaison Office for University Cooperation in Development USAID grant. This partnership was formed to enable university professors in USAID-assisted countries across the world to teach objectively about biotechnology, conduct research on biotechnology, and apply biotechnology to alleviate poverty. Specifically, this project strives to enhance the capacity of six faculty members from Mexican universities to teach about, conduct research on, and apply biotechnology to high priority regional problems related to food, agriculture, and the environment. Technology-assisted learning is believed to be one tool that can help to meet this challenge. An important aspect of the project is the development and delivery of biotechnology training using technology, the Internet and CD-ROM, to realize educational goals beyond those achieved by the face-to-face visits of these faculty members. However, technology-assisted learning tools can only be successfully implemented if there is a strong willingness and readiness of the persons involved. The purpose of this study was to assess the technology-assisted learning readiness and willingness of Mexican university faculty and administrators involved in the project. Preliminary analysis of findings reveals that participants are ready and willing to participate, administrators are supportive of these endeavors, and technology is in place to effectively create and deliver technology-assisted learning.
The Afghan Agricultural Extension System (AES): Impact of the Soviet Occupation and Prospects for the Future
Tooryalai Wesa, Ph.D., Partnership Afghanistan-Canada (PAC)

The Soviet occupation of Afghanistan left significant impacts on agriculture and other sectors. Agriculture was affected in many ways from the integrity of irrigation systems to the cultivation of opium poppies. Various aspects of the AES, as the main department within the Ministry of Agriculture (MA), were severely affected. This study was designed to assess the impacts of the occupation and identify recommendations for its future development. A survey design was used. Sixty-two Afghans with detailed knowledge about the occupation and agriculture participated in the study. The survey covering three areas: demographic characteristics of respondents, impacts of the occupation, and prospects for the future of the Afghan AES.

The majority of participants were highly educated and lived in North America after departing Afghanistan. Many participants were assigned to passive positions or lost their jobs. The occupation affected the attitudes of the farmers, reduced the cultivation of agricultural land, destroyed the infrastructure for delivering agricultural services, altered the types of crops grown and reduced the number of people working in agriculture. Millions of landmines remain a serious threat to those who return to farming. Recommendations are made for the Government, MA, Ministry of Higher & Vocational Education (MHVE), AES, NGOs, and International Aid Agencies. AES rehabilitation should be given high priority to meet the emerging challenges of increasing agricultural production by adopting modern technology, generating suitable marketing channels, providing equal development and working opportunities for Afghan women, protecting natural resources, utilizing professional returnees, and replacing poppy cultivation with regular food crops.

Assessing Effective Factors in Using Internet by Faculty Members of Agricultural College of Zanjan University, Iran
Jafar Yaghoubi and Ebrahim Shamsayi, College of Zanjan University, Iran

The Internet as a universal network maybe considered as the most important opportunity for policy makers and planners in agricultural organizations. Now a day's internet is used in various forms at academic centers. The purpose of this study was to determine effective factors in using internet by faculty members of agricultural college. A descriptive survey was used to collect data and appropriate questionnaires were used for this purpose. The sample consisted of faculty members of agricultural college of Zanjan University. Reliability and validity of instrument were determined through opinions of specialists and application of Cronbach's Alpha. The findings show that agricultural faculty members had positive opinion toward internet use. Also there is significant correlation between internet usage and characteristics such as: age, English language skills, computer skills, research activities, number of scientific publications and job status.

PRA: Where Has All the Participation Gone?
Kiumars Zarafshani and Hossein Azadi, Shiraz University, Shiraz, Iran

Participation is a process through which stakeholders influence and share control over development initiatives, decision and resources which affect them. But development initiatives have to be based on sound information. PRA takes the participatory process back a logical step: stakeholders, and particularly local people involved in a project, should help to determine the agenda for inquiry, participate in collecting the information, analyzing it, and deciding what to do about it. PRA is a flexible participatory strategy which draws on community expertise and involvement to get action-based, timely, cost-effective and reliable information. Although PRA has been widely used in participatory projects, it has not lived up to its expectations when it comes to empowerment of local people. This philosophical paper takes a closer look at some of the problems, limitations, biases and dangers that have become evident. More particularly, this paper draws conclusions that have implications for practice in development projects.
Pre-Conference Leadership Team Meeting Minutes (Unofficial)
Dublin, Ireland
May 23, 2004

Attendance: Steve Jones (President), James Phelan (President-Elect), Gustav Düvel (Past President),
Nick Place (Treasurer), Matt Baker (Secretary), Lynn Jones (Board Member-at-Large), Courtney Stewart
(Graduate Student Representative), Gary Wingenbach (Journal Editor), Pete Vergot (Scholarly Activities
Committee Chair), Jack Elliot (Publications Committee Chair), Barb Ludwig (Constitution and By-Laws
Committee Chair), Dermot Ruane (Membership Committee Chair), Wade Miller (Awards/Recognition
Committee Chair), Jimmy Lindner (2005 Conference Committee Member), Michelle Owens, Don
Breazeale, Jim Knight, and John Richardson.

The meeting was called to order by President Jones. Jones asked if there were any questions regarding the
2003 Post-Conference Leadership Meeting minutes e-mailed to the leadership team in the summer.
Phelan, Ruane, Vergot, Richardson, Düvel, and Jones reported on the Summer Planning Meeting in
Dublin.

Treasurer’s Report: Place gave the Treasurer’s Report. Salient information included: (1) $27,608.29
(USD) expenses for the Raleigh, NC Conference; (2) approximately $51,624.50 (USD) in expenses was
expected for the Dublin Conference; (3) $4,060.06 (USD) in conference fee refunds were returned; (4)
$1,130.60 (USD) in expenses were reported for the 2005 San Antonio Conference; (5) $2,666.66 (USD)
was spent on the AIAEE Informer (newsletter); (6) $593.98 (USD) in expenses were paid to support the
Trinidad/Tobago Chapter meeting; (7) $2,750 (USD) in expenses were reported on the Journal; (8) $65.61
(USD) was reported for miscellaneous expenses; and (9) a total of $65,107.67 (USD) was received in
income from July 24, 2003 to May 13, 2004. Düvel reported that the Association had $6,848.57 (USD)
invested in a South African Bank. It was recommended that these funds be transferred into a US bank.

Phelan provided an update on the 2004 conference. He indicated that use of
university facilities would save the Association ‘substantial’ money, and that those savings were invested
in social activities related to the conference. He indicated that a drop in value of the US Dollar to the Euro
of 20% within the previous year resulted in a great deal of frustration by the conference planners. Ruane
strongly recommended that future conference coordinators budget based upon host country currency.

Phelan reported that the conference social activities would operate under a strict controlled ticket system,
which would help to hold down costs. He concluded by indicating that 70 people were participating in the
Long Conference Program.

Committee Reports:
Scholarly Activities – Vergot provided a Scholarly Activities Committee report. He praised Breazeale, M.
Kroma, M. Hartmann, N. Webster, J. Connor, and G. Wingenbach for the excellent jobs that they had
done with their respective responsibilities. Vergot then recommended that the Association specify a strict
timeline with deadlines related to paper proposals and related review. Ruane recommended that future
non-US conferences be budgeted in host country currency. This would insure that the Conference would
meet the financial obligations. Vergot then reported that 132 proposals were submitted and 88 were
accepted for presentation.

Publications – Elliot gave a Publications Committee report. He stated that there was a proposal for
Samantha Alvis to become the Informer editor. The web site location, list-serve management, and
brochure were also discussed. Ludwig then gave a Constitution and Bylaws Committee report. President
Jones then indicated that the Resolutions Committee Chair (Mary Lou Carlson) was unable to attend the Dublin Conference, and that Tom Bruening would serve as the Interim Chair at the 2004 Conference in Dublin.

Membership – Ruane presented the report on the membership committee. A leadership team discussed the pros and cons of listing Association membership on the web. Institutional membership was also discussed. Miller then updated the Leadership Team on the Awards/Recognition Committee. A Service, Leadership, and Young Member Award will be presented at the 2004 Conference. Stewart gave the Graduate Student Committee report.

Chapter – Richardson gave a Caribbean Chapter report. He indicated a Chapter Meeting was held in November. There was excellent participation and AIAEE member N. Webster was the guest speaker. An ITV meeting was also conducted in San Fernando with 40 participants. Düvel updated the Leadership Team on the Pan African Chapter. He indicated that little activity has happened and that communications is a problem in Africa. He recommended that closer linkages should be developed between the South African Association, the Pan African Association, and AIAEE.

2005 Conference Planning – Lindner gave an update on the San Antonio Conference in 2004. The Conference headquarters hotel will be the La Mansion del Rio. Baker then updated the group on the Post-Conference workshops being planned in Junction (TX) 80 miles west of San Antonio on the Texas Tech Hill Country Campus. Tentative workshop topics include PRA, Ethnographic Linear Programming, and Q-Methodology. Place presented a proposal for hosting the 2006 Conference in Florida, with potential location in Jacksonville/San Augustine, Tampa/Clearwater Beach, and Orlando. Owens proposed a Pennsylvania site (near Delaware Valley College in the Philadelphia area) on an agricultural living history farm.

Editor’s Report: Wingenbach updated the group on Volume 10 of the Journal. The Journal had a 36% acceptance rate. He then discussed how Journal subscriptions are tied to Conference registration. Wingenbach indicated that printing costs had increased due to normal inflation, and that over $1,500 (USD) in savings had been experienced due to the electronic submission and review process. He also indicated that international postage was very expensive and discussed the pros and cons of assessing a shipping and handling fee. Wingenbach then discussed the ISI index process and pointed out that one of our problems is the Journal’s citation rate (how often Journal articles are cited in other journals). He reported that it would be two more years before an ISI request could be submitted by the Association. Wingenbach reiterated the importance of library subscriptions and that the Journal was included in Academic Keys LLC and an application has been made to the International Bibliography of the Social Sciences. He also shared a brochure on the Journal that was developed by an undergraduate student at Texas A&M University.

Issues: The meeting concluded with an issues-oriented discussion beginning with visa difficulties in certain countries (Iran, Cameroon, Ghana, and Nigeria). Ruane, Phelan, Place, and Baker indicated that they had invested a great deal of energy in this process, and that it was likely that the issue would surface in 2004. The following recommendations were forwarded: 1. The Association’s web site be explicit in stating that the obtainment of a visa is the sole responsibility of potential conference attendees; 2. Baker work with McGirr (incoming Association Secretary) regarding letters; 3. Conference registration dates be rolled back; and 4. After a clearly specified date, conference registrants should be reimbursed only partial payment if their visas are denied or travel plans change.

Ruane and Phelan then discussed recommendations for the 2005 Conference including the need for specifying conference timelines complete with individuals who will be responsible for specific tasks. It was also mentioned that Leadership Team members who were unable to participate in the Conference Planning Meeting connect via Web or ITV and that subsequent conferences be planned 3-5 years in advanced.
Organizational finance was then discussed by Jones. A discussion proceeded regarding services paid for by volunteers and/or their organizations versus the Association. As a cost-savings measure, it was recommended that the newsletter be published electronically only. The list-serve was also discussed. Finally, the Team discussed the need to pay graduate students for their contribution to the Association. It was recommended that subsequent leadership teams use their discretion in determining the activities that should be paid and those that are voluntary in nature.

Respectfully submitted,

Matt Baker
AIAEE Secretary
May 23, 2004
Unofficial Business Meeting Minutes
20th Annual AIAEE Conference
Dublin, Ireland
May 26, 2004

President Steve Jones called the meeting to order. Secretary Matt Baker shared the minutes from the Pre-Conference Leadership Team Meeting on May 23, which were approved as distributed. Treasurer Nick Place shared an updated budget, reporting $52,792.05 in conference expenses and $68,547.78 in conference income. The treasurer's report was approved.

Chair Pete Vergot gave a report on the Scholarly Activities Committee. He asked Don Breazeale to report on scholarly activities related to the conference, Nicole Webster on the posters and carousels, Marta Hartmann on coordinating the session facilitators, chairs, and discussants, Margaret Kroma on the paper adjudication process, and James Connors on the publication of the conference CD-ROM. Vergot indicated that replacements were needed for the roles played by James Connors and Margaret Kroma in 2005. Association members expressed their gratitude to this committee for its outstanding service.

Chair Jack Elliot reported on the Publications Committee. He praised the committee on the speed and efficiency in which the group operated. He thanked Randall Andreasen, New Mexico State University, for serving as web host in 2003-2004 and indicated that this important function would transition to Gina Smith from Texas A&M. Listserv responsibilities would transition from the University of Arizona to Texas A&M. Jim Knight, the editor of the AIAEE Informer would hand that responsibility over to Samantha Alvis, University of Kentucky. It was reported that the Informer would be published in paper version in the Fall and that subsequent publications would be electronic. Elliot also reported that the brochure developed by Gary Wingenbach, editor of the Journal of International Agriculture and Extension Education would be modified into a general brochure for Association use.

Chair Barbara Ludwig of the Constitution and Bylaws Committee reported that no constitution and bylaw changes were presented and that consequently no action was taken by this committee.

Chair Tom Bruening of the Resolutions Committee presented two resolutions to the general assembly. The first praised the effort of Jim Phelan and Dermot Ruane for their outstanding effort of organizing and hosting the 2004 conference in Dublin. The second was a resolution of appreciation for the keynote presentation by Andy Offer, Donal Carey, and Larry Arrington. Both resolutions were approved by the general membership.

Chair Dermot Ruane provided a Membership Committee report. Regional representatives include Mohammad Chizari (Middle East), Wayne Ganpat (Caribbean), Ben Stevens (Africa), Ruth Beilin (Australia), Michael Angstreich (Europe), and Jingyuan Xia (Asia). The committee addressed the following questions: (1) What do members want from the membership committee; (2) does membership represent value; (3) how can membership be expanded; (4) how can student membership be expanded; and (5) what are the benefits of membership. The following actions were decided upon: (1) provide a definitive list of all members updated from the Dublin conference; (2) there should be frequent contact with members through the regional representatives; and (3) networking of existing members needs to be improved or made more 'alive'.

Chair Wade Miller of the Awards and Recognition Committee reported that three awards were to be presented at the banquet on the evening of May 26th, and discussed the process of award selection.

Chair Jim Phelan reported on the Conference Planning Committee. He reiterated that communications is the key to a successful conference. He then discussed AIAEE and the American Association for Agricultural Education (AAAE) relationships and the importance of keeping the Association's corporate identity. Discussions related to the title of the Association and the breadth of coverage of the Association...
surfaced. He provided an update on the San Antonio Conference in 2005 and a discussion followed regarding the 2006 conference. Two locations were discussed for the 2006 conference, one being Florida (which would be hosted by the University of Florida) and the other being New Jersey/Pennsylvania (which would be hosted in part by Delaware Valley College). It was recommended that the conference be conducted in Australia in 2007.

Editor Gary Wingenbach gave the Journal report. He reported an acceptance rate of 36%, down from 38% the previous year. He also indicated that subscriptions to the Journal had increased. He then discussed publications/postal expense concerns, indicating that the current system of journal distribution is unsustainable. He encouraged the membership to advocate association membership and to encourage journal subscriptions by libraries. The Journal Board recommended that an annual listing of association members be included at the end of one issue on an annual basis. The Board also recommended that the editor invite an author to write a seminal philosophical article to guide research in the profession. Finally, the Board recommended that subscription rates be set at $30 for electronic, $30 paper copy for US residents, and $50 paper copy for non-US residents. After a lengthy discussion, the final recommendation was referred to a committee to be appointed by the President.

Curt Friedel gave a Graduate Student report. A number of issues were discussed that Friedel would take to the Board. He announced that the silent auction would conclude with final bids taken before the banquet, and encouraged members to participate in this important fund raising event.

Wayne Ganpat gave a Caribbean Regional report. He indicated that 80 extensionists participated in the Caribbean Chapter's annual conference that was keynoted by AIAEE member Nicole Webster and attended by AIAEE representative John Richardson.

President Jones then opened the floor for new business. The following recommendations were made for future conferences: (1) have the keynote speaker/opening session address diversity; (2) sit up a table in the registration area for informational items provided by the general membership (i.e. organizational information, university information, notices of current projects); (3) encourage broader participation from NGO's; and (4) invite speakers from the World Bank and FAO.

The meeting was concluded by the introduction of the 2004-2005 Leadership Team. The team consists of Jim Phelan - President; President-Elect – Lynn Jones; Treasurer – Nick Place; Secretary – Mike McGirr; Board Member-at-Large – Michele Owens; and Graduate Student Representative – Curt Friedel.

Respectfully submitted,

Matt Baker
AIAEE Secretary
May 26, 2004
Post-Conference Leadership Team Meeting Minutes
20th Annual AIAEE Conference
Dublin, Ireland
May 26, 2004

Attending: James Phelan (President), Lynn Jones (President-Elect), Steve Jones (Past President), Nick
Place (Treasurer), Mike McGirr (Secretary), Michelle Owens (Member-at-Large), Curt Friedel (Graduate
Student Representative), Gary Wingenbach (Journal Editor), Pete Vergot (Scholarly Activities Committee
Chair), Jack Elliot (Publications Committee Chair), Barb Ludwig (Constitution and By-Laws Committee
Chair), Wade Miller (Awards/Recognition Committee Chair), Dermot Ruane (Membership Committee
Chair), James Lindner (2005 Conference Committee Member), Don Breazeale.

President Phelan called the meeting to order and outlined the major issues that the Board needed to
address during the meeting: 1) A Vision for AIAEE; 2) Financing Issues; 3) Upcoming Conferences; and,
4) Student Participation in AIAEE. Phelan also announced that 158 people attended the Dublin
conference, including spouses and guests.

The opening discussion centered on the future direction of AIAEE. L. Jones pointed out that although the
organization is growing in complexity, we should retain some of the informal nature of AIAEE that
appeals to our membership. (It was reported that several new members attending the Dublin conference
were impressed by the collegial atmosphere). Given changing terminology in the agriculture development
community and the breadth of AIAEE’s activities, some thought that perhaps the organization’s name no
longer accurately reflects who we are. Phelan and others pointed out that we need to consider the many
years it has taken to build brand identity for “AIAEE.” L. Jones said we should not go through a formal
visioning process, but that our objectives and purposes should grow out of a shared philosophy that
includes input from our members. Phelan said that we would not resolve this issue in the Board meeting,
but that we should all continue to communicate our ideas to one another. Wingenbach suggested that each
Board member set up an e-mail distribution list so that we can communicate further on this issue and
others that come up (e-mail addresses for those attending this meeting are submitted as an attachment to
these minutes). Phelan indicated that most activities tend to happen right before or after a conference and
encouraged us to engage in more mid-term reflection.

On other topics related to the future of AIAEE, Owens inquired whether upcoming conferences would
always be held in more “comfortable” (developed) countries; Ludwig said that AIAEE is still viewed by
many as a U.S. organization and if we were truly international, conferences would move to different
countries every year (as opposed to the current rotation back to the U.S.). Phelan indicated that because
AIAEE depends upon successful conferences for its survival, we need active, engaged members to
provide leadership in a country before we can consider holding a conference there (a more in-depth
discussion of potential conference sites ensued later in the meeting). The group also talked about the need
to maintain a better institutional memory to help subsequent conference organizers and committee chairs.
Lindner pointed out that each committee should develop a “how-to” manual that can be updated and
passed on from year to year. Vergot handed out a Plan of Work from the Scholarly Activities committee
and mentioned that all committees had submitted similar draft reports at business meetings in the past.
Phelan concluded the discussion by saying that we need to develop a better recording system to capture
the institutional memory of the organization.

Wingenbach raised the question as to whether AIAEE needs a finance committee. The consensus was that
this was a good idea and the following members were recommended to serve in that capacity: Nick Place,
Gary Wingenbach, Jack Elliot, Jim Phelan, Michelle Owens, and Wayne Ganpat. Place was asked to chair
the committee and he agreed. Place will put together a brief outline of what the committee will need to
work on. Issues raised during this meeting that the Finance Committee were asked to address include
institutional memberships, lifetime memberships, and setting conference costs in the host country’s local
currency. Ludwig recommended that we should request an audit of the organization’s accounts and others
in attendance agreed. It was decided that Tim Murphy (Texas A&M University) and Vergot would coordinate this effort.

The discussion then moved to upcoming annual conferences. Several members in attendance indicated a willingness to visit San Antonio on August 3-4, 2004 to assist in planning for next year’s annual conference. L. Jones will follow up to confirm planning committee participation and Lindner will check on hotel availability for the August dates. Two venues are under consideration for the annual conference in 2006: the New Jersey/Pennsylvania area in conjunction with Delaware Valley College and Howell Living History Farm; and, a site in Florida with coordination coming from the University of Florida. Owens had suggested the first location and Place/Vergot had recommended Florida. Phelan pointed out that more formal presentations have been done at past conferences by those representing future conference venues. Having recently gone through the arduous process of putting together an annual conference, Ruane strongly recommended that there needs to be a committed local presence in order to pull it off successfully. Given that so many of AIAEE’s activities are built around annual conferences, Phelan recommended that written proposals need to be submitted by organizers willing to host future conferences. Wingenbach suggested that President-elect L. Jones put together an outline for such proposals, specifying criteria that can be used by the Board to evaluate the likelihood of success at a proposed site. L. Jones agreed to draft the criteria, solicit proposals for the two potential sites for 2006, and share the submitted proposals with the Board so that we can vote on them. Phelan recommended that these criteria can also be used to request proposals for 2007. He went on to say that we need to schedule presentations at future conferences so that the Board and the membership-at-large have a better idea of what the sites have to offer.

Friedel raised some issues concerning graduate student involvement in AIAEE. The Board confirmed that there will be nominations for the student rep. position and that anyone serving in that capacity must be a current student (as opposed to someone who has already graduated). Friedel mentioned that students would like to see professional development opportunities and career options as part of the conferences. Lindner said that is part of the proposed agenda for San Antonio, as are dedicated sessions for the students – another issue raised by Friedel. When Friedel inquired about the use of funds raised through the silent auction, Place stated that these go into the organization’s general account and that they help to offset the reduced rate that students receive for membership and conference participation. Friedel asked about the possibility of students coming up with a fundraising activity and using the proceeds to directly support student involvement in AIAEE. Place replied that the organization would be willing to consider such an activity. (Several people pointed out that, to date, the value of financial support provided to students through reduced rates exceeds any specific fundraising that has been carried out on their behalf). Owens recommended that the student representative should have a job description and be required to submit activity reports. Friedel asked whether student members have voting rights and S. Jones confirmed that they do. President Phelan adjourned the meeting and encouraged all participants to continue to communicate regularly with one another via e-mail.

Respectfully Submitted,

Mike McGirr
AIAEE Secretary
June 9, 2004
Association for International Agricultural and Extension Education
20th Annual Conference

Dublin, Ireland
May 24-27, 2004

2004 AIAEE Award Winners

Outstanding Service Award

Dr. William (Bill) M. Rivera, Associate Professor
University of Maryland
Adult and Extension Education
University of Maryland
3119 Jull Hall
College Park, MD 20742 USA

Outstanding Leadership Award

Dr. John G. Richardson, Professor
North Carolina State University
Extension Program Delivery and Accountability Leader
North Carolina Cooperative Extension
Department of Agricultural and Extension Education
College of Agriculture and Life Sciences
P.O. Box 7607
Raleigh, NC 27695 USA

Outstanding Young Professional

Dr. James Connors, Assistant Professor
The Ohio State University
Department of Human and Community Resource Development
216 Agricultural Administration Building
2120 Fyffe Road
Columbus, OH 43210-1067 USA
ASSOCIATION FOR INTERNATIONAL
AGRICULTURAL AND EXTENSION EDUCATION

ANNOUNCES A CALL FOR PROFESSIONAL PAPERS
to be presented at the
21st Annual Conference of AIAEE
La Mansión Del Rió Hotel—San Antonio, Texas, USA
May 25-31, 2005

Educational, Extension, and Research Strategies for a Changing World

AIAEE will accept summaries of proposals for professional papers to be presented at the 21st annual conference that relate to issues in international agricultural and extension education. Topics related to the 2005 conference theme of “Educational, Extension, and Research Strategies for a Changing World” are encouraged, but all submissions will be given full consideration. Research, theoretical/philosophical theme-based or application-oriented papers will be considered. In order to submit a proposal, at least one author must be an AIAEE member.

Please tell your professional colleagues, whether at home or in other countries, about the opportunity to submit a proposal. Each proposal is limited to no more than four pages (title page and three pages of text) and requires the following information:

1) Separate title page with name(s) and institution(s) of each of authors; for the lead author only, include the complete contact information (address, telephone number, fax number, and e-mail address). E-mail address is especially important. As a footnote on the title page, please indicate if you are willing to have your proposal considered for a poster session, should it not be possible to accept it for one of the paper sessions.

2) The summary should not exceed three double-spaced pages of text (1-inch margins all sides, 12-point, Times New Roman font).

3) Please follow the prescribed format when submitting proposals: (a) introduction, (b) purpose of the paper, (c) methods and/or data sources; or theoretical/philosophical themes (the problem or issues, with attention to the reasoning used), (d) results, products, and/or conclusions, and (e) educational importance, implications, and application.

4) Please submit your proposal electronically as a rich text file (.rtf extension) attached to an e-mail message. Please use Microsoft Word 1997 or a later version when preparing the proposal.

5) In the event an author does not have access to a computer with e-mail capability so as to be able to submit electronically, please send four paper copies of the proposal to the address below. The final paper must be submitted electronically.

6) More than one proposal may be submitted.

Deadline for submissions is October 1, 2004
(no summaries of proposals for professional papers will be accepted after this date)

Please send proposals to Dr. Don Breazeale, University of Nevada Cooperative Extension, P.O. Box 239, Lovelock, Nevada 89419, USA. E-mail is breazealed@unce.unr.edu. Each proposal will be peer reviewed by three respected agricultural and extension educators. The lead author of paper proposals will be notified in December 2004 and paper specifications will be given to those accepted for presentation. The paper limit is 12 pages. Presenters will be required to register for and pay the conference registration fee.

We encourage new members. Contact Dr. Nick Place, AIAEE Treasurer, Department of Agricultural Education and Communication, 219 Rolfs Hall, University of Florida, Gainesville, FL 32611-0540 USA, for membership information (e-mail: nplace@mail.ifas.ufl.edu; phone: 352-392-0502, ext. 227; fax: 352-392-9585; or download membership information from the web site at http://www.aiaee.org/
ASSOCIATION FOR INTERNATIONAL
AGRICULTURAL AND EXTENSION EDUCATION

ANNOUNCES A CALL FOR POSTERS
to be presented at the
21st Annual Conference of AIAEE
La Mansión Del Rió Hotel—San Antonio, Texas, USA
May 25-31, 2005

Educational, Extension, and Research Strategies for a Changing World

AIAEE is accepting proposals for refereed abstracts (to be presented as posters) relating to issues in international agricultural and extension education. Topics relating to the 2005 conference theme “Educational, Extension, and Research Strategies for a Changing World” are encouraged, but all submissions will be given full consideration.

Purpose:
To present visually a concept or idea that reflects innovative models of research, educational programming, or evaluation.

Poster guidelines:
• Posters should be printed on one continuous sheet of paper
• Posters will be displayed on a flat wall service
• Maximum size 4’ x 6’ (120 cm x 180 cm)
• Posters will be on display one entire day of the conference; presenters are expected to be present during the evening reception.
• Must be an AIAEE member to submit a proposal—see below for membership information. New members and graduate students are encouraged to submit proposals.

Each poster proposal requires the following:
1. Title page with name(s) and institution of each of authors; including complete contact information (address, telephone number, fax number, and e-mail address) for the lead author only.
2. A one-page abstract (1-inch margins all sides, 12-point, Times New Roman font) that includes introduction, purpose of poster, major points or information to be shared, conclusions, and educational importance.

Awards are presented to the top four poster presentations. Criteria for judging include: Technical content or information; originality or innovativeness; creativity of presentation or ideas; Conveys message (easily understood); importance of topic; and general appearance (well planned design, easily read, neat and well constructed).

Deadline for submissions is October 1, 2004
(no poster abstracts will be accepted after this date)

Submit electronic copy of the proposal or more information to: Dr. Nicole Webster, Department of Agricultural & Extension Education, Pennsylvania State University, University Park, PA 16802 USA. Telephone: (814) 863-2695; Fax: (814) 863-4753; E-mail: nsw10@psu.edu

We encourage new members. For membership information, contact Dr. Nick Place, AIAEE Treasurer, 219-A Rolfs Hall, PO Box 110540, Gainesville, Florida 32611-054 USA Telephone: (352) 392-0502; Fax (352) 392-9585; E-mail: nplace@gnv.ifas.ufl.edu
ASSOCIATION FOR INTERNATIONAL AGRICULTURAL AND EXTENSION EDUCATION

ANNOUNCES A CALL FOR CAROUSEL ROUNDTABLE DISCUSSIONS
to be presented at the
21st Annual Conference of AIAEE
La Mansión Del Rió Hotel—San Antonio, Texas, USA
May 25-31, 2005

Educational, Extension, and Research Strategies for a Changing World

AIAEE is accepting proposals for refereed abstracts (to be presented as carousel roundtable discussions) relating to issues in international agricultural and extension education. Topics relating to the 2005 conference theme “Educational, Extension, and Research Strategies for a Changing World” are encouraged, but all submissions will be given full consideration.

Purpose:
To present, using a written and oral format, abstracts of research, theoretical advances, or explanations of an issue for discussion.

Parameters:
Carousel roundtables are small group presentations of abstracts. Each presentation is allotted 15 minutes; presenters will lead the carousel roundtable discussion three times to rotating groups. Copies of the one-page abstract should be available at the presentation. Presenters must be AIAEE members to submit a proposal—see below for membership information. New members and graduate students are encouraged to submit proposals.

Each carousel roundtable proposal requires the following:
1. Title page with name(s) and institution of each of authors; including complete contact information (address, telephone number, fax number, and e-mail address) for the lead author only.
2. A one-page abstract (1-inch margins all sides, 12-point, Times New Roman font) that includes introduction, method, major points or information to be shared, conclusions or lessons learned, and educational importance.

Awards are presented to the top four carousel presentations: Criteria for judging include: effective communication of materials, logical rationale for major points, knowledgeable response to questions, skill in orchestrating discussion, contribution to knowledge base, management of time, and quality of abstract.

Deadline for submissions is October 1, 2004
(no carousel abstracts will be accepted after this date)

Submit electronic copy of the proposal or more information to: Dr. Nicole Webster, Department of Agricultural & Extension Education, Pennsylvania State University, University Park, PA 16802 USA. Telephone: (814) 863-2695; Fax: (814) 863-4753; E-mail: nsw10@psu.edu

We encourage new members. For membership information, contact Dr. Nick Place, AIAEE Treasurer, 219-A Rolfs Hall, PO Box 110540, Gainesville, Florida 32611-054 USA Telephone: (352) 392-0502; Fax (352) 392-9585; E-mail: nplace@gnv.ifas.ufl.edu
Journal Article of Year Awards for 2003

The Editor requested JIAEE Board Members to review all articles published in Volume 10 (2003) and nominate articles for the second annual Article of the Year Award. The nomination period occurred throughout April 2004. Criteria for article selection and nomination were the article’s capacity for “enhancing the research and knowledge base of agricultural and extension education worldwide…” Six truly outstanding papers were nominated.

The current editor asked an independent panel made up of associate editors, the past editor, and selected AIAEE leadership team members to review and rank the overall excellence of each article. Following are the results of this evaluation to promote the scholarship and recognition of authors who contribute to enhancing the research and knowledge base of agricultural and extension education worldwide.

Congratulations to all the authors on their scholarly achievements. Please take a moment to send your congratulations to these authors for their achievements and for helping all AIAEE members achieve prominence in the research publication process.

Outstanding JIAEE Article of the Year for 2003


Runner-Up JIAEE Articles of the Year for 2003


Subscription Form

The *Journal of International Agricultural and Extension Education* is a publication of the Association of International Agricultural and Extension Education. It is published three times per year in the spring, summer and fall. The summer issue is the Conference Issue which contains keynote addresses, panel discussions, meeting minutes, awards, and the outstanding papers presented at the annual AIAEE conference.

The *Journal of International Agricultural and Extension Education* is available in two formats. It is published in a booklet (hardcopy) version or it can be accessed through a protected Web site.

To order the current volume of the *Journal of International Agricultural and Extension Education*, please access the online Subscription Form at [http://www.aged.tamu.edu/aiaee/jiaee/journalsub.asp](http://www.aged.tamu.edu/aiaee/jiaee/journalsub.asp), or complete the following information:

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Dr. Gary J. Wingenbach, Editor
2116 TAMU
Department of Agricultural Education
Texas A&M University
College Station, TX 77843-2116

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Manuscript Submission Guidelines

General Requirements

All manuscripts should indicate the type of article—Feature; Commentary; Tools of the Profession—on the first page of the manuscript in the upper right-hand corner. All manuscripts should be submitted online at http://www.aged.tamu.edu/aiaee/jiaee/submit.htm

Manuscripts should not have been published or be under current consideration for publication by another journal.

The Journal follows the standards set forth in the latest Publication Manual of the American Psychology Association (APA). The Journal of International Agricultural and Extension Education is a publication of the Association for International Agricultural and Extension Education (AIAEE).

Feature Articles

Manuscripts of Feature Articles are submitted to the Editor. Microsoft Word files only may be uploaded online. A title page with manuscript title, authors’ names, institutions, complete addresses, telephone and fax numbers, and email addresses is required. The article must include an Abstract (a succinct gist of the article’s content) not exceeding 250 words, followed by individual sections for the Introduction, Theoretical Framework, Purpose and Objectives, Methods, Findings/Results, Conclusion, Recommendations/Implications, and References, or similar appropriate headings. There is no submission fee charged for submitting a feature article. Feature Articles should be no longer than 12 double-spaced (11 point font) pages (not including the title page) with one-inch margins on all sides. A $10.00/page (actual pages in the Journal) publication fee will be charged to the lead author upon acceptance to the Journal.

Commentary Articles

Manuscripts of Commentary Articles are submitted to the Associate Editor. Microsoft Word files only may be uploaded online. A title page with manuscript title, authors’ names, institutions, complete addresses, telephone and fax numbers, and email addresses is required. The article must include an Abstract not exceeding 250 words. There is no submission charge for the manuscript, but there will be a $10.00/page (actual pages in the Journal) publication fee assessed to the lead author upon acceptance to the Journal. Commentary Articles should be no longer than eight double-spaced (11 point font) pages (not including the title page) with one-inch margins on all sides.

Tools of the Profession Articles

Manuscripts of Tools of the Profession Articles are submitted to the Associate Editor. Microsoft Word files only may be uploaded online. A title page with manuscript title, authors’ names, institutions, complete addresses, telephone and fax numbers, and email addresses is required. There is no submission charge for the manuscript, but there will be a $10.00/page (actual pages in the Journal) publication fee assessed to the lead author upon acceptance to the Journal. Tools of the Profession Articles should be no longer than four double-spaced (11 point font) pages (not including the title page) with one-inch margins on all sides.

Post all submissions online at http://www.aged.tamu.edu/aiaee/jiaee/submit.htm