


a position to coordinate the Institute's general public relations program in 1989. This program should increase the awareness of the general public and of prospective students about the opportunities available at OSU/ATI. This should lead to increased enrollment for the Institute.

### Assessment

- A. The enrollment increase of 26% in 1988-89 indicates that the enrollment development program is effective. This is of particular interest in light of the decline in enrollment since 1984-85 at the Institute, the general decline in undergraduate enrollment in colleges of agriculture in the United States since 1978, and the decline in the number of high school graduates in Ohio since 1978.
- B. Enrollment development (i.e. enrollment management) provides an effective, coordinated, comprehensive approach to college admissions. While it contains various clusters of program activities, it maintains the focus on the main objective of actual enrollment of students.
- C. Enrollment development's multi-cluster approach provides sufficient flexibility to make necessary program changes to meet the changing needs of students in today's society.
- D. Increased effectiveness should result from the Institute's recent merger of enrollment development activities with the financial aid program, academic advising and the student retention programs. Working together under one administrator, these programs can increase their collective focus on serving the needs of students. The goal for each program cluster to do its particular job well and to collectively insure that as many students as possible will enroll, attend classes, graduate and find useful and productive careers.

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# Developing a Career In Global Agriculture

C. A. Francis and J. B. Youngquist

### Abstract

*International agricultural development careers are becoming more abundant as people and technology move around the world. Opportunities abound for young scientists interested in working in another culture or continent. Many professional positions require several years experience. Planning an appropriate training program to gain the most relevant possible experience early in one's career is especially important. Technical competence, language capability, cultural sensitivity, awareness of gender roles, and broad knowledge of geography, history, political science, and economics are essential for a well prepared scientist. Benefits of professional work abroad include exposure to other cultures, cropping and production systems, values, and languages. Young scientists abroad often have administrative and program organization challenges that would come much later in a domestic career. On the other hand, isolation from the home country professional culture and contacts, difficulty in publishing results from applied research, and personal and family adjustment to a different living situation may cause problems. Concerns about re-entry into one's home culture and maintaining viable and documented competence in the professional field of interest are prevalent among those who work abroad. These are important factors for women and men to consider while preparing for an international career in agriculture.*

### Introduction

International careers in agriculture are becoming prevalent as professionals move more easily from one country and culture to another. Bilateral and multilateral programs and international agencies provide opportunities for training outside of the home country. Long-term assignments for experienced scientists, teachers, and extension specialists are available in our universities and federal agencies. International companies require scientists and executives to travel regularly to visit field operations or affiliates in other countries. Agriculture is a global business.

How can our system best prepare people, either during graduate training or as young faculty members, for this type of career? This question was addressed over 20 years ago in ASA Special Publication No. 15 (Cowan and Robertson, 1969). Technical competence is required, wherever the job. Graduate students report a need for more practical experience, greater exposure to production systems, and access to

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appropriate technology (Cooper and Cashman, 1985). There is certainly a need for language skills and cultural sensitivity, for knowledge of geography, history, political science, economics, and other fields related to global awareness. Awareness of gender roles as influenced by culture and social status is important. No substitute has been found for personal, long-term experience in another language and culture in addressing these issues.

Many young professionals spend an early part of their careers in another country, while planning to return to the home culture to raise a family and pursue other career goals. For re-entry into the home country research, teaching, or extension environment, university and government agencies may require a robust publication record, while commercial companies focus on management or sales skills. Technical people perform better on a current job if there is a degree of security in that job as well as confidence in the future. This paper addresses the most important issues in preparing for an international career in agriculture, and provides some guidelines for anticipating a successful re-entry into a professional position in one's home country.

### **Course Work and Graduate Program Experience**

Formal course programs and requirements for graduate degrees allow a degree of choice and flexibility beyond the major department. However, it is important to complete the recommended courses in a major discipline area, since technical credibility in a recognized discipline is the one route to finding an international job. To complete a credible and recognized course program and a well-written dissertation, and to publish results, are initial steps toward eventual re-entry into the home country.

Course programs allow room for electives. Although the language requirement has disappeared in many universities, it remains as one option for fulfilling breadth or special topic requirements. By 1972, a survey revealed that 52% of agronomy departments had no language requirement (Moberg and Colgrove, 1972). Even if language is not required, a student would be well advised to keep up with prior foreign language experience from undergraduate or high school years; tapes, records, conversations with native speakers, and short-term trips to another country are all ways to maintain competence. Although Spanish and French are widely-spoken in countries where a native speaker of English is likely to work, any language experience is valuable. Experts tell us that the third and fourth languages come more quickly than the second, since we learn to break out of traditional habits and thought patterns. Speaking a local language or dialect is crucial for more than mere communication. Such interest indicates to those in another culture that a visitor cares enough to learn about their country, language, and people.

Other internationally useful electives for an agriculture student include development economics, cultural anthropology, geography, and climatology. Some universities offer undergraduate courses in crops or soils of the world. A course program should be specific enough to prepare a good techni-

cal specialist, but broad enough to be useful in a wide range of practical, problem-solving circumstances.

### **Choice of Dissertation**

Research should be unique to the interests and capacities of each student. Whether research is conducted in laboratory or field, with farmers or on the experiment station, in the home country or abroad, this work should be innovative, thorough, and publishable. Without finishing the preparation of a manuscript for technical publication, a student has not really finished the dissertation. Failure to get the results into a recognized journal could have negative career consequences in the home country both now and in the future. Experience on both search and promotion-tenure committees convinced us that publication of research results from the dissertation is one early and important indicator of later professional success.

Choice of dissertation topic and approach can influence the relevance of graduate training to work in other conditions, although the principles of sound scientific method and experiment design are universally applicable. If a graduate student is convinced from early training that practical field work is most exciting, he or she should choose a major professor and research project that gives such practical training. Although many of the same principles might be learned in the laboratory, the opportunity cost would be high in terms of foregone chances to lay out field trials and collect data under a range of conditions. If a student is sure that field work under developing country conditions will be important in their future, it would be logical to maximize this type of experience. At the same time, it is important to gain some familiarity with state of the art technology and procedures because many national programs are now obtaining these tools and need help in their applications. Familiarity with current technology also will help in re-entry.

### **Dissertation Work Overseas**

One unique option for students interested in international research and education is to conduct dissertation work in another country. With good organization, support, and supervision of field work, this can be an exciting and broadening experience. The authors experienced this type of opportunity: C. Francis conducted M.S. thesis work in the Philippines and Ph.D. dissertation work in Colombia, while J. B. Youngquist did Ph.D. dissertation research in Botswana.

Several requisites seem to predispose success in this type of program -- adequate funding, detailed prior planning and involvement of supervisory committee, technical supervision in the dissertation field location, and local administrative and facilities support (Mason et al., 1987). Over the past several decades a number of people have pursued this type of degree program, often with an international agricultural research center or a national research program. Although funding for this type of work is not always available, overseas research is one viable option.

Thesis experience away from the home country is invaluable training for future overseas research and development work. It is a chance to work in another country and assess

one's own personal interest and ability to adapt, with a short-term commitment and little risk for the future. Women or men who are scientists and who accompany a spouse in this type of assignment often need special support. It is important to recognize that spouse contributions are crucial to success of both. In many situations it may not be possible for both individuals to find paid positions because of visa restrictions or lack of opportunities. This is both an emotional challenge and a golden opportunity to launch into a research or educational project with fewer constraints than one normally encounters while on the job!

It is important to do credible research, make sure the work is well done and results returned to the center or national program, and assure that the work appears in publication form. There are some critics in the establishment who contend that research outside the home university community is not viable for graduate research, since an important part of the experience is interaction with other students, with members of the supervisory committee, and accessibility of a good library. Recognizing this special challenge of working elsewhere, it is advisable in most situations to complete the majority of course work and comprehensive exam, and to gain research experience, before leaving for a remote location. On the positive side, the student who works with a national program or bilateral project often is exposed to, and involved with, a wide range of decisions on budgets, grant proposals, project administration, definition of priorities, negotiation with host governments and research or teaching institutions, and internal politics. A student with these experiences may actually be better prepared to deal with the wide range of challenges facing a young staff member in our universities, compared to someone who spends the entire time on campus -- often protected from much of the real world of funding, reporting, and accountability. We conclude that this type of program is not for everyone, but it is one viable option for a mature and independent student who wants a unique and valuable learning experience.

### **Potential Resources in the University Environment**

Other resources useful in preparation for international careers exist within the university community. One invaluable resource that is not used efficiently is the local population of foreign students. This core of people represents first-hand experience with language, travel, and how to adapt to new circumstances and other cultures. Although there is some structured interaction with international students through formal classes, seminars, laboratories, and field work, the opportunities to expand communication are limited only by imagination and available time. At the University of Nebraska an international seminar has been organized to stimulate the sharing of ideas and experiences. This is successful when there is a core of interested students. Informal social gatherings as families provide another way to learn about other parts of the world. People most interested in foreign students are those who have already lived overseas or have developed a global perspective through other experiences and are helpful in supporting social exchanges.

On nearly every campus are faculty with either short- or long-term assignments overseas. They are available for advice or to present seminars based on their experiences. Each of these professionals has dealt with preparing for overseas work, adjusting to a new work and family environment, learning a language, and dealing with colleagues in another culture. Their experiences provide useful details that will help one ask the right questions and prepare well for an overseas job. A list of important considerations before travel and when on site was presented by Yahya and Moore (1986).

### **Importance of Personal Experience Overseas**

For those who have lived and worked in another country, all agree that there is no substitute for a personal, long-term overseas experience. For many, this can occur through an assignment with Peace Corps, IVS, Mennonite Central Committee, CARE, or other internationally-oriented volunteer agency. For others, the experience may be a thesis or dissertation project with some of the work done in another country. Postdoctoral studies in one of the International Agricultural Research Centers or with an advanced national program is another option. When interviewing for a position in another country, the question invariably comes up, "What experience have you had overseas, and how did you adapt to the culture and work there?" Those who have positive prior experience are much more likely to make the adjustments and do well in another job outside the home country.

Women as well as men should be encouraged to gain this type of experience. In some situations, a woman may have a distinct advantage in reaching out to women farmers, to gather information, or do on-farm research. In a report from the ICE almanac (Jan/Feb, 1985), a situation is described from Central African Republic. "Most extension agents who carry out development work on the village level are men. Cultural biases influence these extension agents to target predominantly male audiences; consequently, women who perform a substantial proportion of village work have limited or no access to help which these agents might otherwise offer. Development programs are not effectively reaching women!" Although cultural differences and biases are important, these should not deter a person from expressing their own personality and using personal strengths to communicate in any culture.

### **Challenges of Re-entry**

For many considering a position outside the home country, one major concern is how to return after two years or more away from "the mainstream" in their field and home environment. Even for those considering a career overseas, maintaining the option of return to a home-country position is seen as desirable -- the "safety net" syndrome. Preparation for re-entry to a domestic position includes promoting oneself.

Before moving overseas, the student or young staff member can learn as much about the home country system as possible. What are the jobs most suited for a person's talents and interests? What types of people occupy those jobs? What is

their preparation and previous job experience? How will working overseas better prepare a person for that job, or act as a deterrent to someone who is evaluating applications? For example, it would be highly desirable for a person applying for "Foreign Student Coordinator" or teacher of "Tropical Crops and Soils" to have first hand experience with universities, cropping systems, and people in other countries. On the other hand, a position such as "Research Molecular Geneticist" could be difficult for a person who has worked for several years outside the field in a practical extension position -- whether in the home country or overseas. Finally, it would be highly desirable to establish and maintain contacts from graduate school or an early job position, in order to keep up to date on new developments in one's field of expertise.

While on the job, overseas or in the home country, there is no substitute for good job performance. Just because a person chooses to move to another country, language, and culture for a broadening experience does not automatically mean that performance there will be highly commendable or good preparation for a job "back home"! Following the requirements of a job description, meeting the expectations of administrators and clients both in the host country and the program, as well as those of students or clients, and carefully documenting the experience are all important. Much of the evaluation on any job depends on letters of recommendation. Innovation and energy in the interpretation and conduct of a job will not only help meet one's personal goals, but will not go unnoticed by others in the project. Even though time and energy demands in most jobs are substantial, there is usually opportunity to do some short-term research. Survey work can provide valuable information during trips for other purposes, and if designed properly can be published for the benefit of others. Testing alternative methods can be a valuable segment of many projects, and this often can be completed rapidly and put into print. These activities not only contribute new dimensions to a project, they can help to build a professional reputation. It is far better to put this extra energy into a project, to derive some publications (especially in a team research mode with colleagues from the host country), and to generate the basis for good letters of support than to later explain why recommendations were poor!

Published results of original research, teaching or extension methods are important in establishing and maintaining a professional reputation, whether in the home country or overseas. Some people suggest that work done outside the home country professional environment is not innovative, or may be too practical to be accepted in journals. At times this is true! If a person is dedicating full time to extension and development activities, while letting the professional field slip away, it becomes increasingly difficult to reenter that technical field in the future. Often the results of good research are hidden in annual reports or team project summaries, especially if the administrative people in a center or program do not encourage international publication in recognized journals.

Publishing may have to be pursued with extra initiative on the part of the young project professional. It is more difficult

to publish from outside the home country -- mail delays, lack of facilities for analysis and library work, or even availability of supplies such as manuscript paper may limit the efficiency of the publication process. Key colleagues in the home country can be of help. If there are people working closely with the project, and who have been in the field or worked with some of the data or materials in the laboratory, they could be coauthors who solve some of the challenges listed.

It is important to maintain contact in the home country and in the international arena in one's own field. Friends and professional colleagues can send key reprints, notices of meetings and special issues of journals, information on people and other events, and generally keep us up to date in the field. When it is time to consider re-entry, these contacts can be extremely valuable in advising about available positions -- some of which may not be announced through easily available channels.

Finally, it is important to keep in mind the need for continued personal professional growth. The concerned project administrator will include this as a part of program planning and budgeting, but it does not always happen due to other pressing priorities and shortage of budget. A candidate for an overseas job would be well advised to negotiate ahead of signing the contract for travel funds and time to attend at least one international and one regional meeting per year, and to have some additional time to consult with colleagues and visit libraries while on those trips. This is all part of maintaining exposure to the mainstream in a given discipline, and to keeping up to date on the literature.

## Women in International Development

Agricultural production is dominated by women in some regions. Women produce more than 50% of the world's food, and provide 50 to 80% of agricultural labor. There is a crucial need to communicate with these farmers, and it is imperative that we encourage female scientists to seriously consider careers in international development, research, and education. Women's roles in agriculture and development are becoming better understood and documented, and there is agreement on the need for more professional women to become involved in agriculture (Arkur and Holt, 1983).

For female scientists who, for whatever reason, perceive themselves at a disadvantage for jobs in the mainstream, the concern about re-entry can be especially important in making a decision on an overseas position. It's important to plan ahead for this step both before going overseas and while on the job. Women's roles in projects and in agriculture need to be made more visible (Poats, 1989).

In her APS presidential address, Dr. Anne Vidaver (1988) states that "Women have to pay attention to how they are perceived... Women's work must not only be above average..., but there must be visibility. Women must speak up at meetings, make their views known, make presentations, take part in professional organizations. That is, women, even more than men, must promote themselves."

In an overseas situation, women may feel doubly isolated. First, they are not seen or may not see themselves as a part of the "good old boys' network" that helps to plug people into

the system -- an important factor for re-entry. As with men, they feel the spatial isolation, since a work assignment may be located many thousand miles from the home country with limited opportunity for travel and contacts back home. If this is recognized by project leaders, appropriate steps can be taken to provide opportunities for communications, give recognition to all people on the team including spouses, and build the visibility of each individual.

Publications are important. Research has shown that women, married and single, have equally good publication records. Yet on the average women have fewer publications than men. It is especially critical for both men and women in Agronomy to recognize this tendency and build a system that encourages women to get results into print, and to become full members of research teams with appropriate recognition for their efforts. In many developing country situations, a scientist/spouse who is female and carries a disproportionate amount of responsibility for children and homemaking may have less stress and more opportunity to pursue professional activities than would be the case at home. If help is available for some household jobs, the time released can be used for research, unique learning opportunities, and writing publications. It might be a chance to assist others with data analysis, writing and editing that will result in shared authorship on publications. Department chairs and research directors tell us that maintaining a publication record while overseas is essential to the re-entry process.

In addition to publications, professional experiences at international meetings are important. For women with family responsibilities, it may be difficult to leave small children behind and travel to distant meetings. There are creative alternatives -- papers can be co-authored and presented by a junior author, giving recognition to the woman who could not travel but who led the effort. It may be possible to prepare a 15-minute videotape, with a colleague there to answer queries or to mediate a direct telephone hookup. All that is needed is imagination to create a number of other options that could be used. Assuming that good data are being collected and summarized, a professional person overseas should have plenty of material to present at these meetings. It's an excellent strategy to keep up to date with others in the same area, and to continually expose new results to professional critique.

There is a key role to be played by women professionals in future research, teaching, and extension programs. The importance of women in the day-to-day decision making in farming in many countries of the world, and the dominance to date by men in most of the professional roles, make it essential that more women attain positions of authority and contact with farmers (Poats, 1989). Yet we do not advocate starting "Women's Programs in Agriculture." We need technical programs with more women as full participants, both here and in other countries. What is needed is complete integration of women into our professional societies and activities, and an awareness that women often have unique insights to offer. New initiatives such as that by Winrock International to identify and train key women in agriculture in Africa will help. Also, any focused encouragement of

women professionals by U.S. and other industrialized country universities that are involved in development projects will help the development of sustainable and resource efficient food production systems for the future. This is not a women's issue -- it is a human issue that should be of equal concern to men and women.

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# NACTA

## NOTICE

### TO ALL NACTA MEMBERS

Proposed amendment to the NACTA Constitution:  
(As published in the Nacta Journal, Vol. XXIX,  
No. 1, March 1985, pp. 95-98.)

Addition of a Section to Article III. Membership.

**Section 9. Emeritus Members -- The emeritus membership shall be composed of retired teachers of agricultural subjects from institutions of higher education, or other retired persons who are interested in higher education of agriculture who have paid the annual membership dues.**

The NACTA Executive Committee, at their Fall 1990 meeting, passed a motion recommending the above addition to the NACTA Constitution, and setting the initial annual dues rate at \$15.00 for Emeritus Members.