

IOWA AGRIBUSINESS INTERNATIONAL NEEDS ASSESSMENT:
IMPLICATIONS FOR EDUCATION

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Outstanding Research Presentation

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Abstract

Iowa businesses were surveyed in 1996 to gain a profile of firms and assess their international needs. The majority of the 440 firms that responded were relatively small in number of employees, yet had relatively large annual revenues. Agribusinesses involved in international business indicated a number of practical needs over the next five years, including leads about trading opportunities, information on laws and tariffs, and foreign business contacts. While a relatively low number of responding firms indicated language training as a need, those that did identified a number of languages which are important to their business. They include Spanish, Chinese, and Japanese. Agribusinesses indicated a geographical interest in Latin America and Asia. Implications for Iowa State University are that training and information on practical and immediate concerns are needed to complement the development of future programs providing training and research focused on specific geographic areas.

Introduction

The number and scope of international interactions and interdependencies has increased steadily in recent centuries as has the number of people affected by them (Anderson, in Pike and Selby, 1988). Factors that have shaped perceptions of global interdependence of the world include rapid social and technological change, and economic interconnectedness. In agriculture, a global agricultural system has evolved based upon international trade (Schuh, 1985).

Educational institutions have responded to global interdependence with a movement to internationalize curricula which began in the post-World War II era (Hicks & Townley, 1982). However, education in agriculture still requires attention to improve international skills and knowledge. In an Iowa study, Wirth and Martin (1995) found that agribusinesses favored the inclusion of international perspectives in educational programs to prepare students for a global economy. A study of 277 students in agronomy classes at the University of Nebraska found them lacking knowledge of international agriculture (Mason, et al., 1994). Etling (1995), the North Central Region Curricular Committee Project (1989), Bawden, Busch and Gagni (1990), and Lunde, Baker, Buelow and Hayes (1995) present convincing cases for realigning the offerings of higher education in agriculture with the changing demands of a global agriculture system. Diets have changed, environmental concerns have become critical, the mobility of labor and capital has increased, and innovations in science and technology permit new relationships to emerge in the knowledge sector without regard for national borders (Bawden, Busch & Gagni, 1990).

In view of the importance of education in the global context, a research project was undertaken in 1996 to identify and assess the international education needs of Iowa businesses operating in all sectors (Acker, Ralston, Schmidt & Shelley, 1996). The purpose of the study was to generate appropriate information to enable Iowa State University

(ISU) to (a) improve services to Iowa businesses, and (b) internationalize the ISU curriculum to prepare students to operate in a global economy. The survey results were to be used to guide interviews with representative firms to develop a deeper understanding of trends identified in the initial survey.

This paper specifically addresses the international education needs of Iowa agribusiness firms. The results should enable ISU and other educational institutions to respond by improving existing programs and developing new educational programs to meet these needs. The survey was supported by a grant from the Iowa State University Council on International Programs.

Methodology

Questions for the survey were developed by a team of four researchers over a four-month period, and subsequently pilot tested. The survey was mailed to 4,323 Iowa business firms, representing approximately 5% of the 89,815 firms registered in Iowa. The response rate was 10.14% (440 firms). Project resources did not permit a comparison of respondents to nonrespondents.

Profile of Responding Agribusiness Firms

The 440 firms responding to the questionnaire were asked to identify the sectors in which they conducted business. One hundred and ten firms responded that they were involved in agribusiness, and 71 reported involvement in agribusiness processing. This paper focuses only on the responses of these agriculturally-related businesses. The total number of agriculturally-related business for which results are presented in this paper is 155, because some businesses were involved in both agribusiness and agribusiness processing.

Number of Employees

The distribution of employees of Iowa agribusinesses responding to the survey shows that most are small- to medium-sized firms. As shown in Table 1, 70 (45.1%) of the responding agribusiness firms had fewer than 25 employees, and over 80% (126 respondents) had 100 or fewer employees. Only 7.8%, or 12 agribusiness respondents, had more than 500 employees.

Total Revenue or Sales

When stratified by total revenue or sales, 29% (43 respondents) had total annual revenue or sales of over \$25 million, by far the category with the most respondents. In fact, agribusiness firms having more than \$10 million in revenue or sales accounted for over 42% (63 respondents) of the total agricultural respondents. The distribution of agricultural respondents by annual revenue or sales is shown in Table 2.

Table 1

Distribution of Agricultural Respondents by Number of Employees.

No. of employees	No. of respondents	% of respondents	Cumulative %
1 - 25	70	45.1	45.1
26 - 50	27	17.4	62.5
51 - 100	29	18.7	81.2
101 - 250	13	8.4	89.6
251 - 500	4	2.6	92.2
501 - 1,000	4	2.6	94.8
More than 1,000	<u>8</u>	<u>5.2</u>	100.0
Total	155	100.0	

Table 2

Distribution of Agricultural Respondents by Total Annual Revenue or Sales.

Revenue/sales	No. of respondents	% of respondents	Cumulative %
Under \$500,000	18	12.1	12.1
\$500,000 < \$1 million	13	8.9	21.0
\$1 million < \$2 million	7	4.7	25.7
\$2 million < \$4 million	22	14.9	40.6
\$4 million < \$10 million	25	16.9	57.5
\$10 million < \$25 million	20	13.5	71.0
\$25 million or more	<u>43</u>	<u>29.0</u>	100.0
Total	148	100.0	

Employees Engaged in International Business

Respondents were asked to indicate what percentage of their employees were directly involved in international business activities. As shown in Table 3, over 92% of responding agribusinesses had at least some of their workforce directly engaged in international activities. However, the percentage of employees involved in international activities was relatively small. Most firms (83.2%; 129 respondents) had less than 10% of their workforce directly engaged in international business activity. Only 11 agribusiness firms (7.1%) had over 50% of their employees engaged in international business activities.

Revenue from International Business Activity

Businesses were asked to identify their total annual revenues or sales derived from international business activities. As illustrated in Table 4, 93.4% of responding agribusinesses indicated that at least some of their revenue or sales came from international business activities. But, once again, the percentage of income from international activities was relatively low. Most respondents (62.9%; 95 respondents) indicated that their international revenue or sales fell between 1 and 10%. Twenty-three respondents (15.2%) indicated that the percentage of their international revenues or sales was between 10 and 25% of their total revenue. In addition, 8% (12 respondents) indicated that 75% or more of their total revenue or sales came from international business

Table 3
Percentage of Employees of Agricultural Respondents Directly Engaged in International Business Activities.

% of employees	No. of respondents	% of respondents	Cumulative %
0%	12	7.7	7.7
1% < 10%	117	75.5	83.2
10% < 25%	9	5.8	89.0
25% < 50%	6	3.9	92.9
50% < 75%	5	3.2	96.1
75% and over	<u>6</u>	<u>3.9</u>	100.0
Total	155	100.0	

Table 4
Percentage of Annual Revenues or Sales Derived From International Business of Agricultural Respondents.

Revenue/sales	No. of respondents	% of respondents	Cumulative %
0%	10	6.6	6.6
1% < 10%	95	62.9	69.5
10% < 25%	23	15.2	84.7
25% < 50%	9	6.0	90.7
50% < 75%	2	1.3	92.0
75% and over	<u>12</u>	<u>8.0</u>	100.0
Total	151	100.0	

International Agribusiness Needs

The above profile provides an understanding of the nature of Iowa agribusinesses and the importance of international business. The following information from the survey will provide a better understanding of the perceived needs of Iowa agribusinesses for effectively conducting international business activities.

The survey presented respondents with a list of 19 possible needs of businesses to conduct international activities. Table 5 presents a ranking of the agricultural respondents' needs as foreseen by them in the next five years. The most frequently expressed need was related to leads about trading opportunities, with 61.3% of the respondents indicating this as a need. Other prominent needs indicated were electronic communication (58.2%); laws and tariffs

(57.4%); market studies and marketing (56.0%); foreign business contacts (55.0%); information technology (52.9%); export documentation (51.0%); and transportation (50.0%).

As indicated in Table 5, 38.9% or 56 agricultural respondents replied that they foresee a need in language training in the next five years. Respondents were then asked to indicate what languages they considered a priority. Responses to this question can be found in Table 6. Of the 52 agricultural respondents to this item, 43 (82.7%) indicated training in Spanish was a priority. Other languages receiving a significant response were Chinese-Mandarin (26 respondents, 50%); Japanese (21 respondents, 40.4%); Chinese-Cantonese (18 respondents, 34.6%); Russian (16 respondents, 30.8%); and French and German, each with 14 respondents or 26.9%.

Table 5

Areas of Need Foreseen in the Next Five Years for Agribusiness.

Rank	Need area	% of responses	No. of responses
1	Leads about trading opportunities	61.3	93
2	Electronic communication	58.2	85
3	Laws and Tariffs	57.4	85
4	Market studies, marketing	56.0	84
5	Foreign business contacts	55.0	82
6	Information technology	52.9	73
7	Export documentation	51.0	75
8	Transportation	50.0	71
9	Financial analysis	47.9	69
10	Effective business correspondence	46.8	65
11	Document translation	45.5	66
12	New Product/services development	45.6	63
13	Employee development training	44.1	60
14	Training in culture - specific info	42.2	60
15	Foreign language training	38.9	56
16	Environmental analysis	34.8	48
17	Packaging and processing	34.3	46
18	Political analysis	32.9	46
19	Overseas site inspections	24.8	34

Table 6

Important Foreign Languages of Agricultural Respondents.

Rank	Language	No. of respondents	% of respondents (n=52)
1	Spanish	43	82.7
2	Chinese (Mandarin)	26	50.0
3	Japanese	21	40.4
4	Chinese (Cantonese)	18	34.6
5	Russian	16	30.8
6/7	French	14	26.9
6/7	German	14	26.9
8	Portuguese	9	17.3
9/10	Vietnamese	8	15.4
9/10	Italian	8	15.4
11	Malay - Indonesian	7	13.5
12	Hindi	5	9.6
13	Arabic	4	7.7
14	Bengali	2	3.8
15/16	African languages	1	1.9
15/16	Urdu	1	1.9

Implications

The fact that over 90% of the responding agribusinesses derived at least some of their income from international business, and that some of their employees were involved in international activities should be of great interest to ISU as well as other land-grant universities with a similar state agribusiness profile. Given the projection that the importance of the international aspects of agribusiness will increase (Schuh, 1985), it is clear that ISU will need to strengthen and maintain globally relevant teaching, research, and outreach programs to meet the needs of agribusiness. Iowa State University's College of Agriculture currently offers undergraduate students opportunities to participate in any one of approximately 12 study and work abroad programs, an international agriculture secondary major and minor, a university-wide international studies minor, an international agriculture club, and classes with a faculty having considerable international experience. However, while the College, and ISU as a whole, has doubled the number of students studying and working

abroad since 1996, fewer than 4% of the 2,600 agriculture students participated in 1996-97. Furthermore, participation rates in the international agriculture secondary major and minor as well as in foreign language study are low.

The ISU College of Agriculture has also established a number of approaches to encouraging and recognizing global involvement of faculty. Examples include the newly-established "Excellence in International Agriculture Award", annual faculty development trips for six new teaching faculty and advisors, and an in-house competitive research grants program focused directly on international research exchange.

For the teaching program, adding a global perspective to agricultural curricula will be extremely important to Iowa businesses which require well-rounded, globally-aware employees who can provide expertise in the areas of need identified in this study. Agribusiness leaders frequently exhort universities to do more in preparing graduates to work in the global

economy. The ability to work cross-culturally is most often cited as a critical skill for success. The emphasis on cross-cultural skills, as opposed to skills in a specific foreign language, is particularly relevant as English continues to grow as the language of international business. Iowa State University and other land-grant universities will need to ensure that students personally experience another culture through study abroad and interactions with fellow students from other countries. Serious consideration should also be given to expanding courses in areas designed to expand our understanding of other cultures: geography, sociology, anthropology, and political science. New approaches to cross-cultural skill acquisition involving experiences beyond the classroom are needed. Educators could move students through a variety of preparatory activities, such as short-term travel courses, and visits to English-speaking countries early in their career with an aim of getting them involved in longer-term study and/or work experiences.

Language study is another means of deepening cross-cultural understanding. Efforts should be made to increase instruction in languages identified as important in this study, such as Spanish, Chinese, Japanese and others. ISU currently offers Spanish at all levels of study, but Mandarin is the only Asian language taught and is currently offered only to year one and year two students. In his study "Internationalizing the Land Grant University", Etling (1995) recommended raising requirements for foreign language competence, and providing options for students and faculty to gain and demonstrate language competence.

The need expressed by agribusiness firms for these languages is an indication also of the importance of regions such as Latin America and the Pacific Rim to Iowa agribusiness. Extension, student learning, study abroad, and research programs need to be at least partly directed towards these geographic areas.

ISU should also strengthen its outreach program to meet projected needs of agribusinesses.

Topics and areas of service such as leads about trading opportunities and foreign business contacts, information on laws and tariffs, and assistance in developing international market studies and marketing plans were identified in the study as being of primary interest to responding firms.

It should be realized that land-grant universities cannot successfully meet all the education and training needs of the private sector. Some of these needs are undoubtedly best performed in the private sector. However, land-grant universities have a key role to play in developing globally-prepared graduates and world citizens, the human resource base upon which businesses and communities depend. Also, more than just the needs of the business community must be considered. Universities should strive to provide education, research, and outreach programs that prepare clientele of the university to be successful in multiple settings. A balance must be maintained so that social, cultural, geographic, and political considerations are taken into account in the globalization of teaching, research, and outreach functions of the university.

The results of this study provide important guidance to the internationalization effort at ISU. Key issues requiring additional research with agribusiness leaders have been identified. As Bawden, Bush and Gagni (1990) point out, linkages between higher education and its stakeholders will be critical to the success of higher education and the society it serves. Land-grant universities would be well advised to solidify partnerships with institutions abroad, internationally inclined agribusinesses, and community groups with interests in international relations. The Board on Agriculture of the National Association of State Universities and Land Grant Colleges (1996) has also called for a renegotiation between society and the land-grant universities to, among other things, prepare "society-ready graduates" to participate in the global economy. In moving toward action in this area, a task force on globalizing agricultural science and education programs for America drafted a report (1997) with specific

recommendations on the implementation of this goal. It is anticipated that the work of this task force will help to prepare an enabling environment for the introduction of improvements identified in this paper.

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