National Survey of Study Abroad Programs Conducted in Asia Using the Food and Agriculture Education Information System (FAEIS) Database[1]

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Abstract

This research is motivated by two factors: (1) the importance of study abroad programs to agricultural students and (2) a need for a reliable, accessible and searchable national database that describes agricultural study abroad programs. Apart from the pedagogical benefits, study abroad experiences enhance job market competency and provide opportunities to increase understanding of different cultures and values. Data from the Food and Agriculture Education Information System international programs' database is used to assess U.S. study abroad programs in Asia. This research validated the data using 783 study abroad programs from 84 different land-grant institutions included in the database. Focusing on U.S. land-grant institutions for the years 2004-2010, 25 operate one or more agriculturally-driven study abroad programs in Asia. Study abroad results show that the most travelled Asian countries are China, India and Russia, focus predominantly on agriculture and are either research-based or teaching-oriented. Educators and universities could use this resource to develop partnerships with other institutions, review the breadth of international study abroad projects and serve as a recruitment tool to quickly identify campus-based experts.

Introduction

The U.S. National Security Act of 1991 tripled federal spending on undergraduate study abroad programs. Similarly, the Act also allows increased spending on graduate research and grants abroad. In April 2000, President Clinton signed a memorandum that doubled the exchange opportunities in U.S. higher education for the following ten years. American higher education has tried to fulfill this challenge in many ways. Some institutions included their goals for international education in campus wide strategic plans, while others incorporated it into individual disciplines (NAFSA: Association of International Educators, 2007).

In the United States, study abroad programs at the university level consist of different types. Some programs may allow students to complete only a portion of their studies outside of their home country, while other programs may require students to complete their entire degree abroad. Study abroad programs also provide internships overseas, or may encourage students to teach in a different country (Landis et al., 2004).

This research is motivated by two factors: (1) the importance of study abroad programs to agricultural students and (2) a need for a reliable, accessible and searchable national database that describes study abroad programs. This research identified the international programs' database within the Food and Agriculture Education Information System (FAEIS) as a unique database that compiles nationwide higher education data for agriculture and life sciences.

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Importance of Study Abroad Programs to Agricultural Students

The United States is the top destination for about three-quarters of prospective students worldwide who want to go abroad for their higher education. Similarly, more than 75% of the prospective students willing to go abroad for studies believe that the U.S. has a variety of programs that would suit individual needs (Chow, 2011). These are the major reasons why the United States is considered an educational hub for students worldwide. This might lead one to wonder why a U.S. student wishes to go abroad for studies.

There is more than one reason why study abroad programs are equally important to U.S. students as they are to any other student in any part of the world. There are many pedagogical benefits of studying abroad (Kleine et al., 2012; Myers et al., 2005; Norris and Dwyer, 2005). Today's job market makes study abroad experiences important. For example, one aspect of globalization is today's diverse work force. For work place harmony and interacting with global customers, individuals need to be respectful of different cultures and values. International exposure helps people become more tolerant to different ideas and appreciative of other opinions (Falk and Kanach, 2006; Norris and Gillespie, 2009; Patterson, 2006; Peacock, 2005). These experiences become relevant to agricultural students, because one in six agricultural jobs today is directly tied to international trade (Bruening and Shao, 2005).

Study abroad programs also bring a different level of maturity to students and help them transform to more appreciative citizens upon their return home. For example, U.S. students studying abroad are also viewed as citizens from a country which has global socio-political impacts. Thus, these students may elicit strong responses in a host country which might help them realize the unique privileges as U.S. citizens (Falk and Kanach, 2006). Earlier research suggests that studying abroad also provides a unique opportunity to discuss sensitive issues that might eventually bring a greater understanding between individuals from different countries (Falk and Kanach, 2006; Ogden, 2007).

Why Asia?

Most of the countries in Asia are agriculture based and are making concerted efforts to improve their agriculture sector. Unfortunately, it is also a region where more than 1.29 billion people live on less than $1.25 USD per day and where food security is always an issue (World Bank, 2005). International rules and regulations impact agriculture in Asia as much as their domestic policies. While these factors make Asian agriculture vulnerable, these are also the reasons which make Asian agriculture interesting from a student's point of view. Asia is also very important to U.S. from a trade point of view. For example, India and China are very influential on international trade related agricultural policy development. More recently, China has emerged as a major trading partner for the United States.

Second language proficiency is an important achievement today in the context of globalization. Asian countries are non-English speaking countries. So, if a U.S. student chooses an Asian country over any English speaking country, an added advantage is an opportunity to learn a new language. Additionally, educators and the U.S. government alike have recognized the importance of studying abroad in a non-English speaking country (Curran, 2007; Stearns, 2009). These facts make it very likely that Asia will surpass Europe as the most visited region by U.S. students for future study abroad purposes.

Research Objectives

The goal of this research is to communicate the existence of a reliable, accessible and searchable national database describing study abroad programs and to use it to research U.S. agriculturally-driven study abroad programs. Therefore the specific objectives of this research are to describe the U.S. study abroad programs in Asia, specifically to identify:

1. Which Asian countries are sites for agriculturally-driven study abroad programs.
2. Which higher education institutions are the major operators of Asian study abroad programs for agriculture and life sciences.
3. Which area receives priority for study abroad programs among the four major disciplines in agriculture and life sciences—(1) agriculture; (2) family and consumer sciences and human sciences; (3) forestry and natural resources; and (4) veterinary medicine.

Methods

Good data are the first step toward successful research and related statistical inference. Currently, research on study abroad programs cite inadequate data as a research limitation (Engle and Engle, 2003; Gerald et al., 2009; Patterson, 2006; Yao, 2009). A reliable, accessible and searchable database and the common knowledge of its existence would help overcome this problem.

Selection of Database

A database helps a researcher comprehend the benefits of the programs based on objective criteria, such as length of program, field exposure and new techniques. Research that evaluates the benefits of a study abroad program exists. However, most are of qualitative nature, either because there is dearth of data or because there is no clear cut distinction of various kinds of study abroad programs.

The Food and Agriculture Education Information System is a project developed by the United States Department of Agriculture (USDA) in 1983. Since 2002, the FAEIS database has been managed by Virginia Tech (VT) (FAEIS website; Marchant et al., 2010). In 2006, the higher education community and the USDA-National

Institute of Food and Agriculture (NIFA), realized the need for data on study abroad programs. It was agreed that a project database rather than an individual database would better serve the need to develop international programs partnerships with universities. At the request of the higher education community and the USDA-NIFA, FAEIS developed an international programs' database (IPD) in 2008. The objective of IPD is to promote global initiatives in higher education and recognize international accomplishments for both the institution and faculty. The database is the first national database to include information on students studying abroad, international research, teaching and outreach projects and countries with international projects. In the initial years the database demonstrated that maintaining these information in a systematic manner in one place was feasible.

"*Following the formation of the FAEIS International programs' database, the Association of Public and Land Grant Universities (APLU) started to collect similar information for both agriculture and non-agricultural colleges and universities but later it was discontinued*."—(Richardson, 2013)

This research finds FAEIS IPD to be more focused on agriculture and more complete and current compared to the APLU data for land grant colleges and universities. Another distinct advantage is the elaborate features included in the IPD database which makes it searchable and easily accessible to a researcher. Importantly, this research identifies FAEIS IPD as a unique web-based, searchable national database on study abroad programs with an agricultural focus. Thus, FAEIS IPD is unique.

FAEIS is a self-reporting database and this fact might elicit concerns. For example, concerns might be that the information might be inaccurate or that institutions might be unwilling to report their true data (Fixsen et al., 1972; Fowler, 2009). The FAEIS IPD in most cases invites partner universities to complete the survey questionnaire accessible online to share their data. Thus data comes from an accountable and reliable source. When partner universities cannot directly fill in the survey, the FAEIS team uses data that are published in other sources. If some anomalies are found at the end of a reporting year, the FAEIS team sends out a combined report to university and college administrators. This report allows the institution final approval prior to the data being made public. This makes the FAEIS database reliable.

What Makes the FAEIS IPD a Good Database for U.S. Study Abroad Programs?

1. The Database has Hierarchical Classification of Study Abroad Programs

Length of a program and its availability at a given time is a valuable piece of information to any scholar willing to pursue studies abroad. For example, some researchers might be interested in a month long field exposure or while another might be interested in a yearlong degree program. The FAEIS International programs' database includes information on length of study abroad programs for land grant colleges and universities.

2. The Database has categorized Study Abroad Programs Based on Academic Areas

U.S. Study abroad programs related to agriculture and life sciences are distinguished into four types – (1) a*griculture*; (2) f*amily and consumer sciences and human sciences*; (3) f*orestry and natural resources*; and (4) v*eterinary medicine.* This classification is consistent with the disciplines in colleges of agriculture and life sciences for most of the land grant universities in the United States. This type of distinction makes comparison of study abroad programs across universities easier.

3. The Database has Differentiated Study Abroad Programs Based on the Nature of the Program

The nature of study abroad program refers to whether a program is research based, outreach oriented, training related or an instruction endeavor or any mix of these types. This differentiation is important because merits of a study abroad program can be comparable only among programs of similar nature.

4. The Database has Listed Objectives of a Study Abroad Program

Most useful data is well described data. For example, having information on specific objectives of a program, one could easily identify the program best suited to one's needs. Importantly, this also provides criteria for judging the benefit from a specific study abroad program.

5. The Database also has Information on Participating Institutions for Study Abroad Programs

This is important for many different reasons. For example, it becomes easier to identify experts in a discipline and to assess prospects for future collaboration. The FAEIS IPD also includes information on contact persons for any further information which is helpful when one wants to know specific details of a project.

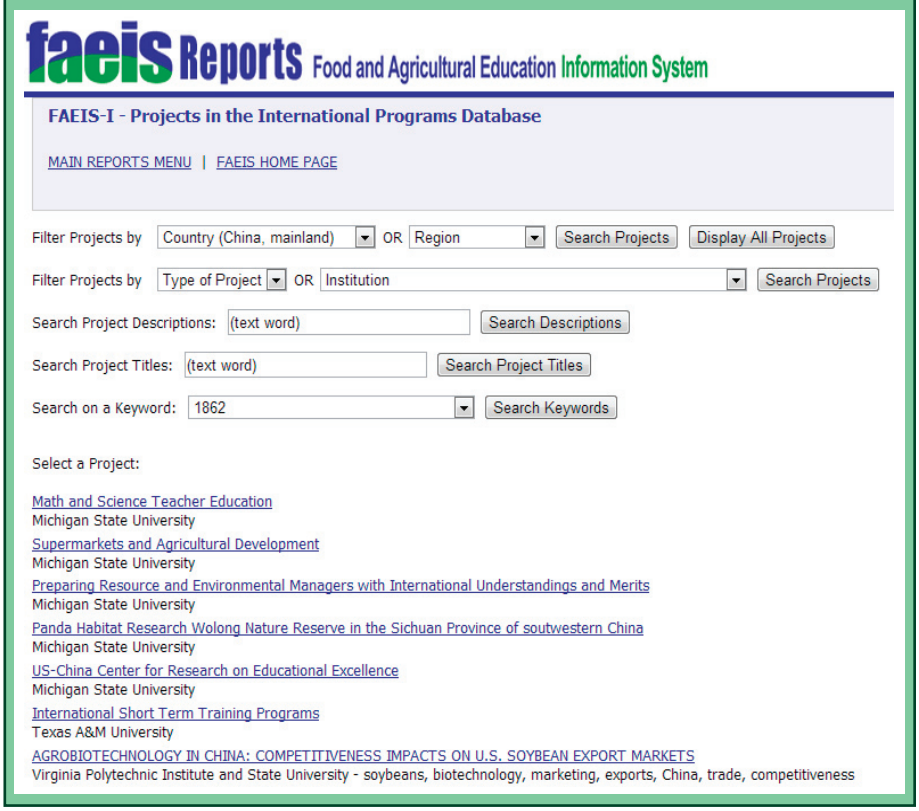
6. The database is searchable, reliable and accessible

The FAEIS IPD is searchable by different parameters –study abroad programs, participating institutions, nature of the program and country or region. This eases the use of the database. Additionally, the database was designed by a panel of experts, extensively discussed at the Association of Public and Land-grant Universities (APLU) meetings and alpha and beta-tested with 18 institutions. The FAEIS database is accessible via internet as described above. The FAEIS team is willing to answer specific questions related to the use of the database.

Exploring the FAEIS International Programs' Database

The FAEIS IPD for higher education can be accessed at http://www.faeis.ahnrit.vt.edu/ipd.shtml. This database provides information on international projects, primary contacts for such international projects, faculty members with expertise on such projects, partner institutions and the number of students studying abroad. The link

Figure 1. Screen Shot of the FAEIS International programs' database Webpage (http://faeis.ag.vt.edu/REPORTS.cfm?S=5)



"http://faeis.ag.vt.edu/REPORTS.cfm?S=5" leads to the following window as shown in figure 1. There, one can set filters for projects by type of the project (research, instruction and outreach), institutions, country and region. FAEIS Report Builder (http://faeis.ag.vt.edu/faeisrpt.cfm) is another useful tool for generating custom reports. The first step is to use the link and get a temporary FAEIS ID and a password.

Research Design

This research uses data retrieved from the Food and Agriculture Education Information System IPD to examine agriculturally-driven U.S. study abroad programs in Asia for the years 2004 through 2010. This research focuses on 109 land-grant colleges and universities in the United States: 59 historical 1862 land grants, 18 African American 1890 land grants and 32 tribal 1994 land grants. Agriculturally-driven academic programs in the United States reside in colleges of agriculture and life sciences. The four major disciplines in the colleges across the land grant universities are (1) agriculture; (2) family and consumer sciences and human sciences; (3) forestry and natural resources; and (4) veterinary medicine. Examples of programs in each of these include, respectively, agriculture economics, entomology, animal science; food science and technology, family and consumer science, early childhood education; forest resources and environmental conservation, natural resource economics, fishing and fisheries sciences and management; veterinary anatomy, veterinary biomedical and clinical sciences, animal health technology.

Data Collection and Analysis

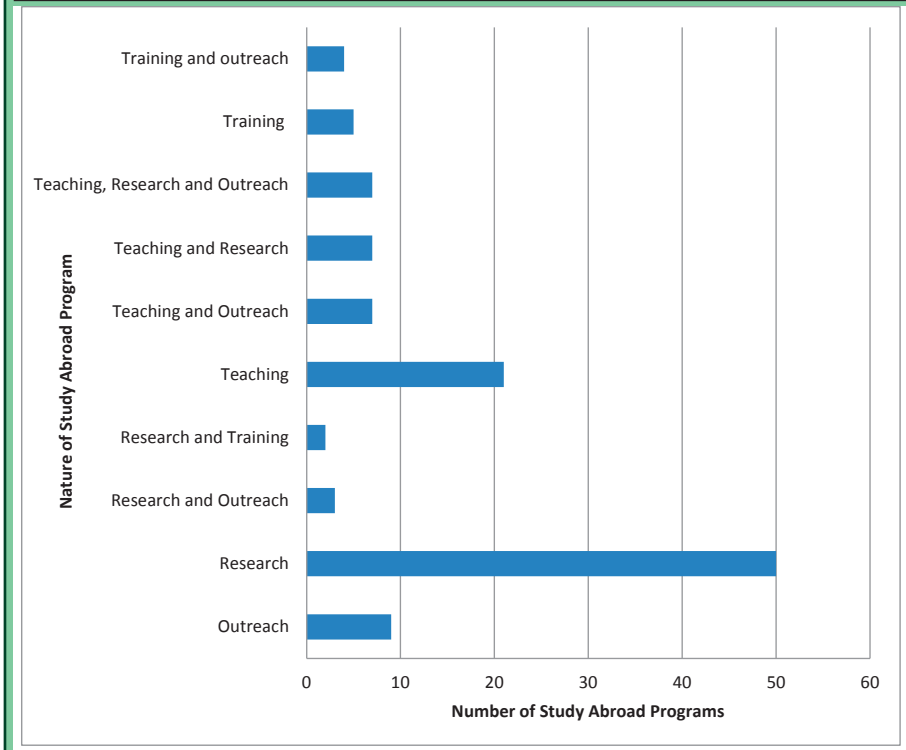
This research considers 1862, 1890 and 1994 land grant colleges and universities for agriculturally-driven U.S. study abroad programs to Asia. For this purpose, data on study abroad were collected for all countries in Asia from the FAEIS IPD. Data were tabulated and categorized into FAEIS program areas, nature of the program, university conducting the program and the academic year in which the program took place. Then the data were cross validated using these categories. For example, an individual country was searched for all the study abroad programs by type of project- teaching, research or outreach using the filters in the report builder in the database. To ensure each project was classified correctly, an individual project description available in the database was studied. Then various other filters, namely- institution, country, keyword, year were used to corroborate project type, program country and home university conducting the study abroad programs. Additionally, cross validation went beyond the FAEIS database. Given an individual project in FAEIS, the project completion date and the program area were validated using various online search engines.

This research validated the data obtained using 783 study abroad programs from different land-grant institutions for 2004-2010 that are included in the FAEIS IPD. The variables for this research are the nature of the program, academic year in which the program took place and university conducting the program. Data on study abroad programs in a country tend to be rather unique and therefore presents a greater scope for descriptive analysis than inferential analysis. Hence, descriptive statistical tools were used for the data analysis. Frequency analysis, cumulative frequency analysis and tables and figures were used for summarizing the results.

Results and Discussion

There are 109 land grant colleges and universities in the United States, which include historical 1862, African American 1890 and tribal 1994 institutions. Of these, 84 have at least one study abroad program and 25 operate one or more agriculturally-driven study abroad programs in Asia. Altogether there are 115 distinct agriculturally-driven U.S. study abroad programs in Asia. The majority of the study abroad programs either focus on research (43%) or on teaching (18.3%) (Figure 2).

Figure 2. Nature of the US-Based Study Abroad Programs in Asia



Objective1

Identify Which Asian Countries are Sites for Agriculturally-Driven Study Abroad Programs

The U.S. based agriculturally-driven study abroad programs visited 30 different countries in Asia. The ten most frequently visited countries are listed in Table 1. China has the highest number of Asian study abroad programs (n=20) followed by India (n=15) and Russia (n=12). Among the four academic areas of FAEIS, the programs in China focus predominantly on agriculture and involve teaching and research.

Objective 2

Identify Which Higher Education Institutions are the Major Operators of Asian Study Abroad Programs for Agriculture and Life Sciences

The results show that Michigan State University is the major operator of study abroad programs in Asia. Out of the total 115 agriculturally-driven study abroad programs in Asia, 51 programs are conducted by Michigan State University and Texas A&M University ranks second with 11 programs. Half of the 25 universities operate only one program in Asia (Table 2).

Michigan State University also operates a majority of its agriculturally-driven study abroad programs in China. For example, there are nine universities operating 20 different programs in China and 12 of them are conducted by Michigan State University (Table 3).

Examples of study abroad programs led by Michigan State University include the role of third party certification for food safety in China, partnerships for international research and education program: new generation synthetic membranes - nanotechnology for drinking water safely in Russia, strengthening institutions for investment climate and competitiveness in Philippines, food policy support in Indonesia.

Objective 3

Identify Which Area Receives Priority for Study Abroad Programs among the Four Major Disciplines in Agriculture and Life Sciences—(1) Agriculture; (2) Family and Consumer Sciences and Human Sciences; (3) Forestry and Natural Resources; and (4) Veterinary Medicine

Among the four program areas of FAEIS, agriculture receives the highest priority for study abroad programs. Forty-three of the total agriculturally-driven study abroad programs solely focus on agriculture, while a discipline like veterinary medicine has very few U.S. study abroad programs in Asia (Table 4). Eight programs in India and six programs in China focus solely on agriculture. Although China was the top destination for all agriculturally-driven study abroad programs, when disaggregated by discipline, India was the top destination for agriculture. Other agriculturally-driven U.S. study abroad programs in China are forestry and natural resource (4); family and consumer sciences and human sciences (6); and interdisciplinary agriculture sciences, programs that involve more than one of the above disciplines (4). Veterinary medicine does not have U.S. study abroad programs in China (Table 5).

Table 1. Top 10 Most Frequently Visited Countries in Asia for Agriculture Based U.S. Study Abroad Programs During 2004-2010

Year	Country	Agriculture[1]	Human Science[2]	Natural Resource[3]	Veterinary medicine	Interdisciplinary[4]	Totals
2005-2010	CHINA	6	6	4		4	20
2005-2010	INDIA	8	5	1		1	15
2005-2010	RUSSIA	4	3	2	1	2	12
2005-2009	INDONESIA	2	1		2	2	7
2005-2009	PHILLIPPINES	2	1	2		1	6
2004-2010	AFGHANISTAN	2	1			2	5
2007-2009	IRAQ	3				2	5
2005-2009	JAPAN	2	3				5
2005-2010	NEPAL		2	1	1		4
2005-2010	THAILAND	1	2			1	4

[1]Agriculture = Agriculture and life sciences
[2]Human Science = Family and consumer sciences and human sciences
[3]Natural Resource = Forestry and natural resources
[4]Interdisciplinary = Interdisciplinary agriculture sciences

Summary

The FAEIS International programs' database promotes global initiatives in higher education and recognizes international accomplishments for both the institution and faculty. Agriculturally-driven study abroad programs in the United States visit a wide range of countries in Asia. The most travelled Asian countries are China, India and Russia. Among the four program areas of FAEIS, the U.S. study abroad programs in Asia focus predominantly on agriculture and are either research-based or teaching-oriented. Such agriculture related study abroad programs are mostly conducted in India, China and Iraq. Among the land grant colleges and universities, Michigan State University operates most of these study abroad programs in Asia. To conclude, FAEIS IPD is a resource that can be used to develop partnerships with other institutions; review the breadth of international projects; and serve as a recruitment tool to quickly identify campus-based experts who could serve on international projects.

Table 2. Number of Study Abroad Programs Led in Asia by U.S. Land Grant Colleges and Universities During 2004-2010

University	Number of Study Abroad Programs
Michigan State University	51
Texas A&M University	11
University of Maryland	8
Purdue University	7
Virginia Tech	5
University of Delaware	4
University of Kentucky	3
North Carolina State University at Raleigh	3
Tufts University	3
Iowa State University	2
Pennsylvania State University	2
Washington State University	2
West Virginia State University	2
Cornell University	1
Kansas State University	1
Middle Tennessee State University	1
Missouri State University	1
North Carolina Agricultural and Technical State University	1
University of Arkansas at Pine Bluff	1
University of California-Davis	1
University of Florida	1
University of Illinois at Urbana-Champaign	1
University of North Carolina at Greensboro	1
University of North Texas	1
University of Wisconsin-Stevens Point	1
Total =25 universities	115 Study Abroad Programs

Table 4. Study Abroad Programs by Academic Areas During 2004-2010

Program Areas	Number of Study Abroad Programs
Agriculture	43
Family and Consumer Science and Human Science	35
Forestry and Natural Resource	13
Veterinary Medicine	5
Interdisciplinary Sciences	19
TOTAL	115

Table 3. Number of Study Abroad Programs Led by U.S. Land Grant Colleges and Universities in Different Asian Countries During 2004-2010

Country	Number of Study Abroad Programs	University that has Study Abroad Programs
AFGHANISTAN	5	Texas A&M University (3)
		Michigan State University (1)
		Washington State University (1)
BANGLADESH	1	Virginia Tech (1)
CAMBODIA	1	Michigan State University (1)
*CHINA	20	Michigan State University (12)
		Texas A&M University (1)
		Iowa State University (1)
		Missouri State University (1)
		North Carolina State University (1)
		Purdue University (1)
		University of Arkansas at Pine Bluff (1)
		Virginia Tech (1)
		West Virginia University (1)
GEORGIA	3	Texas A&M University (1)
		University of Kentucky (1)
		University of Maryland (1)
HONG KONG	1	University of Delaware (1)
INDIA	15	Michigan State University (9)
		Cornell University (1)
		University of Florida (1)
		Kansas State University (1)
		North Carolina State University at Raleigh (1)
		Purdue University (1)
		University of Wisconsin-Stevens Point (1)
INDONESIA	7	Michigan State University (3)
		Tufts University (2)
		University of Kentucky (1)
		Texas A&M University (1)
IRAQ	5	Texas A&M University (4)
		Washington State University (1)
ISRAEL/PALESTINE	2	Texas A&M University (1)
		Purdue University (1)
JAPAN	5	Michigan State University (2)
		North Carolina State University at Raleigh (1)
		Pennsylvania State University (1)
		West Virginia University (1)
JORDAN	1	Purdue University (1)
KAZAKHSTAN	1	Michigan State University (1)
KOREA	3	Michigan State University (2)
		University of North Texas (1)
KYRGYZSTAN	1	Michigan State University (1)
LEBANON	1	Michigan State University (1)
MALAYSIA	1	Michigan State University (1)
MONGOLIA	1	Middle Tennessee State University (1)
NEPAL	4	Virginia Tech (1)
		Tufts University (1)
		Michigan State University (1)
		University of Delaware (1)
OMAN	2	Virginia Tech (1)
		Purdue University (1)
PAKISTAN	2	Michigan State University (2)
PALESTINIAN TERRITORY	1	Purdue University (1)
PHILIPPINES	6	Michigan State University (5)
		Virginia Tech (1)
RUSSIA	12	Michigan State University (6)
		University of Maryland (5)
		University of North Carolina at Greensboro (1)
TAIWAN	2	University of Illinois at Urbana-Champaign (1)
		University of Maryland (1)
THAILAND	4	University of Kentucky (1)
		Pennsylvania State University (1)
		Iowa State University (1)
		University of Delaware (1)
TURKEY	2	University of Maryland (1)
		North Carolina Agricultural and Technical State University (1)
UZBEKISTAN	1	Michigan State University (1)
UNITED ARAB EMIRATES	2	University of Delaware (1)
		Purdue University (1)
VIETNAM	3	Michigan State University (2)
		University of California-Davis (1)
Total =30 countries	115 study abroad programs	

*Highest number of study abroad programs

Table 5. Program Areas by Country During 2004-2010

Year	Country	Agriculture[1]	Human Science[2]	Natural Resource[3]	Veterinary Medicine	Interdisciplinary[4] Agriculture Sciences	Totals
2004-2010	Afghanistan	2	1			2	5
2005-2009	Bangladesh	1					1
2008-2009	Cambodia	1					1
2005-2010	China	6	6	4		4	20
2005-2009	Georgia	3					3
2010-2010	Hong Kong		1				1
2005-2010	India	8	5	1		1	15
2005-2009	Indonesia	2	1		2	2	7
2007-2009	Iraq	3				2	5
2008-2010	Israel	1				1	2
2005-2009	Japan	2	3				5
2008-2010	Jordan					1	1
2005-2009	Kazakhstan	1					1
2005-2010	Korea		3				3
2005-2009	Kyrgyzstan	1					1
2007-2010	Lebanon		1				1
2008-2009	Malaysia			1			1
2005-2009	Mongolia				1		1
2005-2010	Nepal		2	1	1		4
2006-2009	Oman		2				2
2007-2010	Pakistan		2				2
2008-2010	Palestine					1	1
2005-2009	Philippines	2	1	2		1	6
2005-2010	Russia	4	3	2	1	2	12
2005-2010	Taiwan	1		1			2
2005-2010	Thailand	1	2			1	4
2007-2009	Turkey	2					2
2008-2010	United Arab Emirates		2				2
2005-2009	Uzbekistan	1					1
2006-2009	Vietnam	1		1		1	3
	Total				115 study abroad programs		

[1]Agriculture = Agriculture and life sciences
[2]Human Science = Family and consumer sciences and human sciences
[3]Natural Resource = Forestry and natural resources
[4]Interdisciplinary = Interdisciplinary agriculture sciences

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