

Higher Education for Development
Knowledge, Partnerships, Results



United States-Mexico
Training, Internships, Exchanges, and Scholarships (TIES)

Comprehensive Fiscal Year Progress Report

Report Period
October 1, 2005-September 30, 2006

Due: October 31, 2006



USAID
FROM THE AMERICAN PEOPLE

Partnership Title: Decision Support of Ruminant Livestock Systems in the Gulf Region of Mexico

Development Area: Rural development: Economic growth and competitiveness through animal agriculture

U.S. Institution: Cornell University

U.S. Partnership Director: Robert W. Blake
Department of Animal Science, 131 Morrison Hall
Cornell University
Ithaca, NY 14853
Telephone: 607-255-2858, FAX: 607-255-9829
Email: rwb5@cornell.edu

Mexican Institutions: Universidad Autónoma de Yucatán (UADY)
Universidad Veracruzana (UV)
INIFAP-Veracruz

Mexican Partnership Director: Guillermo Ríos Arjona
Facultad de Medicina Veterinaria y Zootecnia (FMVZ)
Apartado Postal 4-116 Itzimmá, CP 97100 Mérida, Yucatán
Telephone: 52-(999)-942-3204, FAX: 52-(999)-942-3205
Email: rarjona@tunku.uady.mx, gr66@cornell.edu

USAID/Mexico Contact: Nora E. Pinzón, Education Program Manager
USAID/Mexico
Email: npinzon@usaid.gov
Tel: (52 55) 5080-2835
Fax: (52 55) 5080-2574

Partnership Web Site: <http://tiesmexico.cals.cornell.edu/>

Partnership/Participant Information (10/1/05-9/30/06).

TABLE 1

ACTIVITY	NUMBER OF MEN					NUMBER OF WOMEN					DATES OF ACTIVITY	LOCATION
	Faculty, Admin	Students		Other		Faculty, Admin	Students		Other			
		< 25 yrs old*	≥25 yrs old*	<25 yrs old*	≥25 yrs old*		< 25 yrs old*	≥25 yrs old*	<25 yrs old*	≥25 yrs old*		
New activities for current reporting period												
1) Number of Mexican participants who received scholarships for 2 or more semesters			2								8/05-9/06	Cornell
Description of scholarships:												
2) Number of disadvantaged Mexicans benefiting from TIES scholarships (subset number of question 1)												
3) Number of U.S. participants who received scholarships of 2 or more semesters												
Description of scholarships:												
4) Number of Mexican participants who graduated with a scholarship												
Description of program:												
5) Number of exchanges begun for Mexicans going to the U.S.												
Description of exchanges:												
6) Number of exchanges begun for U.S. participants going to Mexico												
Description of exchanges:												

TABLE 1 (continued)

ACTIVITY	NUMBER OF MEN					NUMBER OF WOMEN					DATES OF ACTIVITY	LOCATION
	Faculty, Admin	Students		Other		Faculty, Admin	Students		Other			
		< 25 yrs old*	≥25 yrs old*	< 25 yrs old*	≥25 yrs old*		< 25 yrs old*	≥25 yrs old*	< 25 yrs old*	≥25 yrs old*		
7) Number of Mexicans participating in internships												
Description of internships:												
8) Number of U.S. participants participating in internships												
Description of internships:												
9) Number of Mexicans receiving non-degree training –workshops, seminars, special classes (not internships)		... 10 2	2 3 2 2	4 2		1				8/05-10/30/05 1/05-19/06 8/06-12/06	Cornell ^a Mexico field trip & videoconferencing ^b Cornell ^c
Description of training: ^a Course work, research & planning of teaching platform. ^b Gulf region field laboratory component of the IARD 602 joint course. ^c Courses and complementary work in support of MS degree programs of UADY students.												
10) Number of Mexicans participating in degree/certificate programs												
Diplomas/certificates												
Baccalaureate												
Master												
Doctorate												
Description of programs:												

TABLE 2

Degrees, Diplomas, Certificates Awarded During Past U.S. Government Fiscal Year (None this period).

Activity	Field of Study	With TIES Funding	Without TIES Funding	Total	Institutions(s)
1) Number of baccalaureate degrees* awarded					
2) Number of master degrees* awarded					
3) Number of doctorates degrees* awarded					
4) Number of joint degrees awarded *					
5) Number dual degrees *					
6) Number of diplomas/certificates* awarded (individuals not counted above)					

TABLE 3

Contributions Made During Past U.S. Government Fiscal Year.

Contributions	Name/Source of Contributor	Name of Recipient	Description of Contribution	Estimated Dollar Value of Contribution
Leveraged contributions beyond original anticipated cost-share budget	Cornell University	David Parsons	Support for PhD field work in Yucatán	\$10,000.
	Cornell University	Kotaro Baba	Support for MS thesis research on Yucatán	\$ 5,000.

TABLE 4

Capacity Strengthening Activities During Past U.S. Government Fiscal Year (10/1/05-9/30/06).

Capacity building activity	Description
Adapted/changed curricula	
Improved methods of instruction	Integration of videoconferencing & field laboratory experiential learning to bring students & faculty closer to the problems of Mexican farmers.
Collaborative research	Two Cornell MS thesis projects, one nearing completion, focusing on cattle systems in Yucatán and Veracruz. One Cornell PhD study being carried out in collaboration with 6 Yucatán farmers who own sheep and with UADY.
Collaborative publication prepared	
New academic programs established as part of TIES	
Promoted workforce development	
Involved in community outreach	Field laboratory that takes students to Mexican communities and farms for problem definition and appraisal.
Supported increased trade capacity	
Informed policy at institutional. Community, national levels	
Consulted with government agencies; NGO groups; private sector groups	
Other:	

Partnership Profile

1. Executive summary.

This partnership employs a systems-oriented program of training and decision support to the ruminant livestock industry aimed at improving productivity, profitability and rural incomes in the Gulf region. A fundamental goal is to enhance the capacity of decision makers to assess and act upon technology, market and policy changes. Efforts are focused on developing an internet-based platform of teaching, research and communication for training a mixed cadre of UADY, UV and Cornell students. Key successes include a “living laboratory” field course (IARD 602) in Mexico during January, enhanced understanding of methods for collaborative research and instruction, development of a substantial archive of print and electronic learning materials, and short-term training of UADY graduate students at Cornell (fall 2005 and fall 2006). In addition, five full semester courses on the teaching platform, each with its own Web site, but also integrated with our TIES partnership site (<http://tiesmexico.cals.cornell.edu>), were delivered to a multidisciplinary audience of international students in 2005-06. This platform serves as an information clearinghouse to support collaborations among the partners and to inform other interested parties. These courses have employed videoconferencing to convene joint sessions with Cornell and UADY students and faculty. Selected joint classes and videoconferences were video-recorded, integrated with presentation (Powerpoint) files, and archived for use at the **Cornell Transnational Learning** Web site (<http://transnationallearning.cornell.edu/>).

Our “living laboratory” field course—a joint teaching experiment involving students, faculty and scientists from UADY, UV, INIFAP, Colegio de Posgraduados/Campus Cárdenas and Cornell—was a resounding success. Students gained experience in fact-finding and in building personal relationships and cross-cultural teams while analyzing constraints affecting farmers and rural populations in the Gulf region. Camaraderie, enthusiasm, excitement, and communication among Mexican, US, Australian, Indian, Italian and Japanese participants were fostered through a structured itinerary for the gathering of information. This learning experience—unique for Mexican participants—involved interactions with many farmers and professionals in Mexico’s agricultural and natural resources sector (<http://ip.cals.cornell.edu/courses/iard602/2006spring/mexico/>). A major short-term training program at Cornell University was conducted August-November 2005 for a team of six Mexican scientists and graduate students from UADY, Universidad Veracruzana and INIFAP. A second short-term program, this time for a full semester, was initiated in August 2006 for three UADY MS students. Research collaborations included thesis projects (or proposals under development) of TIES-supported Mexican students and others who are addressing pertinent management and policy issues affecting dual-purpose and beef cattle systems, sheep systems, and agricultural sustainability in the Gulf region. Three TIES-supported Mexican students (Victor Absalón, Luis Nabté and Omar Cristobal) are now enrolled for the 2006-07 academic year in Cornell MS programs with significant coursework requirements met through the partnership teaching platform.

The report from the external evaluation conducted in June and July re-emphasized the need for greater flexibility to better capitalize on investments already made to obtain fullest benefits (http://tiesmexico.cals.cornell.edu/reports/documents/present_first_external_evaluation_report.pdf):

“(despite) strong institutional commitment to the project on the Mexican side...An extra effort is required in the project’s final year if fullest benefit is to be obtained.” Overall, the project has made substantial progress toward enhancing capacity of partner institutions to address relevant development issues for ruminant livestock systems, training a skilled cadre of systems-oriented researchers and extensionists, and broad dissemination of information to the livestock sector.

2. Success story: TIES students visit 'living labs' of southeastern Mexico.

A multicultural engagement of students and faculty from six countries learn to learn together

Grinning broadly, Don Leonardo leads the student explorers through the *monte* of his farm. His manner and tone tell that the numerous healthy sheep trotting before us are his pride. He talks of plans to expand their numbers. Minutes later and a couple of kilometers down the road, Don Teobaldo and Don Sebastian show us much-less-thrifty animals penned behind the house. They tell that lack of feed, low access to technical assistance, and diseases have made them despair of ever seeing a financial return from sheep production. As the group assembles for lunch, the questions on everyone's mind are: "Why are these farmers having such different experiences?" and "What could or should be done for Don Teobaldo and Don Sebastian?"

Moments like these were commonplace during two weeks in January 2006, when students from UADY, UV and Cornell University, aided by scientists from INIFAP and the Colegio de Posgraduados-Campus Cárdenas, engaged in a 'living laboratory' study of agriculture and rural development in the Gulf region of Mexico. Hailing from six countries, these 31 explorers interacted with farmers, extensionists, researchers and policy makers in rural and urban Yucatán, Tabasco and Veracruz to develop their own perspectives on the needs of farmers and rural communities. Truly amazing was the development of thought processes and group camaraderie during this brief lab experience. Initially there was little interaction between the Mexican and Cornell students in the newly formed group. By the end of two weeks, the students had developed camaraderie and friendships that continue even now. These bonds among fellow explorers resulted from a group structure that intermingled students from all institutions, from class and group meetings that facilitated interpersonal contact and idea-sharing, and from a growing sense of joint responsibility to learn based on the truly pressing needs of the individual farmers visited. Overcoming language barriers, students figured out day by day how to exchange ideas effectively, to integrate their efforts and to work together to better understand the complexity of agricultural systems. They shared individual interpretations and analyses of need and development approaches, negotiated views about priority information and actions, and facilitated learning processes for each other. Ultimately, the participants became both active learners and teachers, to the mutual benefit of all involved.

A Cornell University Ph.D. student, Mr. David Parsons (Australian), also has been working with Don Leonardo. Results from this study are expected to contribute to the improved productivity of this farm. In summary, we expect Mr. Cocóm to be able to better manage farm net income as a result of his collaboration with TIES students and faculty.

Program Information

1. Major activities during the current reporting period **(10/1/05-9/30/06)**.

Project activities were focused on joint teaching and research platforms and short-term training in support of the ruminant livestock industry in the Gulf region. Main activities and accomplishments included the following:

- *Master of Science degree programs at Cornell.* Three Mexican students, Victor Absalón, Luis Nabté and Omar Cristobal (two from Veracruz, one from Yucatán), are currently enrolled in MS programs under this partnership. A significant portion of their coursework requirements is being met by the core courses of our joint teaching platform plus an additional fifth course on the platform. Other training and scholarly activities for these students included development of

conceptual frameworks and preliminary proposals for thesis studies and other TIES-related research, and by supporting the TIES teaching platform as course assistants.

- *Web-platform of teaching, research, and communication.* A Web-platform, integrated with our TIES Web site (<http://tiesmexico.cals.cornell.edu>), was created specifically to support the teaching platform. However, it also facilitates research collaborations and information flows among the partners and other interested parties. Open-access Web sites for the core courses are:
 - AnSc 640, TIES Research Seminar.
(<http://tiesmexico.cals.cornell.edu/teaching/ansc640.cfm>)
 - AnSc 400, Livestock in Tropical Farming Systems.
(www.ansci.cornell.edu/courses/as400/)
 - IARD 402, Agriculture in Developing Nations I—Mexico edition.
(<http://ip.cals.cornell.edu/courses/iard402/2006fall/mexico/index.html>)
 - IARD 602, Agriculture in Developing Nations II—Mexico edition.
(<http://ip.cals.cornell.edu/courses/iard602/2006spring/mexico/>)
 - *AEM 494.* In addition to the core elements above, a fifth course was added to the teaching platform, AEM 494, *Introduction to System Dynamics Modeling*. Password-protected materials for this course are available to registered parties (e.g., short-term trainees) via <http://www.blackboard.cornell.edu>.

Cornell Transnational Learning. Our TIES Web-platform is further supported by video-recorded presentations (with integrated Powerpoint presentations) from these five courses. These learning products constitute an important additional educational resource for faculty, graduate students and researchers at UADY, UV and INIFAP. These materials are available at the **Cornell Transnational Learning** Web site (<http://transnationallearning.cornell.edu/>).
- *Teaching platform, 2005-06 and 2006-07.* Efforts are focused on delivering four core courses (three involving videoconferencing), one field trip laboratory, and the systems modeling course. In addition to the Cornell student body, these courses serve students and faculty from UADY and UV. The IARD 602 field laboratory is also facilitated by INIFAP and other TIES partners and the Colegio de Posgraduados, Campus Cárdenas, Tabasco (ColPos).
 - *AnSc 640.* Besides Cornell students, participation in this fall 2005 seminar included eight Mexican participants at Cornell (six short-term trainees and two MS students) and parallel participation by an unknown number of students and faculty at UADY. Participation in the spring 2006 seminar included two Mexican MS students at Cornell. UADY students and faculty were unable to participate due to unresolved problems in implementation. Participation in fall 2006 includes six Mexican participants (three short-term UADY graduate student residents and three Cornell MS students).
 - *AnSc 400.* This spring 2006 course included two Mexican MS students. UADY students and faculty were unable to participate due to implementation issues.
 - *IARD 402.* This fall semester course is a prerequisite (preparatory course) for IARD 602. The enrollment in 2005 included eight Mexican participants at Cornell (6 short-term

trainees plus 2 MS students) and nine students (6 men, 3 women) at UADY via videoconferencing. The 2006 enrollment includes six Mexican students at Cornell (three short-term trainees from UADY plus three MS students) and, via videoconferencing, 10 students each from UADY and UV. Each of 13 presentations in 2006 is video-recorded, integrated with its Powerpoint file, and made accessible in a special IARD 402-Mexico library at **Cornell Transnational Learning** (<http://transnationallearning.cornell.edu/>).

Seven presentations in 2005 specifically addressed Mexican issues, five of which were videoconferences (*) by TIES project collaborators for UADY, UV and Cornell audiences. These were:

- *August 26**. Prof. Juan Jiménez (UADY). Agriculture and development in the Mexican tropics with emphasis on the Yucatán Peninsula.
- *September 8*. Prof. Robert Blake (Cornell). Livestock in development.
- *September 23**. Prof. Lilia Fernández (UADY). Maya households: Domestic archaeology and ethnoarchaeology.
- *September 30**. Prof. Lorenzo Aceves (Colegio de Posgraduados, Cárdenas). Biophysical environment and effects on plants and animals of Tabasco State.
- *November 4**. Dr. Heriberto Román (INIFAP). Agriculture and food systems in Veracruz, Mexico: Land uses and crop, livestock, agroindustry and marketing systems.
- *November 18*. Prof. R. Blake (Cornell). The Cornell-UADY-UV-INIFAP TIES project, Decision Support of Ruminant Livestock Systems in the Gulf Region of Mexico.
- *December 2**. Profs. R. Blake, T. Tucker, C. Nicholson (Cornell), G. Ríos and J. Magaña (UADY). IARD 602 learning objectives, course expectations, field trip itinerary and activities, and rural appraisal teams.

In the 2006 edition of IARD 402, 13 videoconferences involving Cornell, UADY and UV are focused on priority themes for the Gulf region of Mexico. These are:

- *September 1*. Raymond Craib. Department of History. *Mexican ejido system and rural issues of smallholder farmers in the Gulf region.*
- *September 8*. Lilia Fernández, UADY School of Anthropology. *Mayan civilization and household organization.*
- *September 15*. Juan Jiménez, UADY Department of Conservation and Natural Resource Management. *Agriculture and development in the Mexican tropics with emphasis on the Yucatán Peninsula.*
- *September 22*. William Rivera, University of Maryland. *Agricultural extension in Latin America in an Era of Reform.*

- *September 29.* Pedro Pérez, Department of Applied Economics and Management. *Fundamental globalization and trade issues and their impacts on Latin America's rural sector.*
 - *October 6.* Terry Tucker, International Programs. *Making research and extension relevant to rural communities and development.*
 - *October 13.* Robert Blake, Department of Animal Science. *Livestock in development.*
 - *October 20.* Margaret Smith, Department of Plant Breeding and Genetics. *Maize in Mexican culture.*
 - *October 27.* Arturo Gómez Pompa, Center for Tropical Research, Universidad Veracruzana, and Professor Emeritus, University of California, Riverside. *Centro de Investigaciones Tropicales. Research in the Veracruz tropics by the Center for Tropical Research.*
 - *November 3.* Diputado Silvio Lagos Martínez, Congressman, District 24, Santiago Tuxtla, Veracruz. *Mexico's rural investment challenges.*
 - *November 10.* Charles F. Nicholson, Department of Applied Economics and Management. *Agriculture as a complex dynamic system: Mexico's sheep production systems.*
 - *November 17.* David Parsons with Leonardo Cocóm. *Of maize and manure—Learning experiences and experimenting in Yucatán.*
 - *December 1.* Robert Blake, Terry Tucker and Charles Nicholson (Cornell) and Guillermo Ríos and Juan Magaña (UADY). *IARD 602 learning objectives, course expectations, and 2007 field trip itinerary, activities and organization.*
- *IARD 602 in 2006.* There were 34 participants from six countries in the highly successful laboratory component of this spring 2006 course. Among the participants were 14 Mexican students: two from Cornell, nine (8 men, 1 woman) from UADY, and three UV men. In addition to excellent support from TIES collaborators from UADY, UV and INIFAP, this course greatly benefited from the expert contributions by Dr. Lilia Fernández at Uxmal, Dr. Mario Osorio in Tabasco, and many farmers and their families and other hosts throughout the field trip. Students from UADY, UV and Cornell discovered together, built friendships and camaraderie, and learned how to work together across cultures. See the IARD 602 Web site (<http://ip.cals.cornell.edu/courses/iard602/2006spring/mexico/>) for detailed information about the participants, course objectives and design, and the field trip itinerary.

The campus-based component of this course comprised class meetings in parallel at UADY and Cornell plus eight joint sessions via videoconferencing. As in other core courses, these joint classes were video-recorded, integrated with presentation (Powerpoint) files, and archived for use at **Cornell Transnational Learning**. Invited presentations were:

- *January 31.* Phil McMichael (Cornell, Development Sociology). *Impacts of trade liberalization, especially NAFTA, on US and Mexican farmers.*

- *February 2.* Bill Rivera (Univ. of Maryland, Education). *Extension reforms for world agriculture.*
- *February 7.* Alice Pell (Cornell International Institute for Food, Agriculture and Development). *Interdisciplinary research on sustainability issues in East Africa.*
- *February 9.* Elvira Sánchez (Cornell, Romance Studies). *Mexican masks: Modern cultural hybridity.*

The following student theme group presentations of individual written projects were organized around two overarching, interdisciplinary sets of issues that were addressed in IARD 602. Designated theme groups, each comprising UADY and Cornell students, were *Livelihood Systems in Mexico's Gulf Region*: (Group 1) *Which are the priority information needs, policies, and programs?* (Group 2) *How to make research and extension relevant?*

- *February 28.* Theme group #1, Cornell team
 - *March 2.* Theme group #1, UADY team
 - *March 7.* Theme group #2, Cornell team
 - *March 9.* Theme group #2, UADY team
- *IARD 602 in 2007.* Planning is nearly complete for the 2007 IARD field laboratory, January 3-18. This edition will involve about 36 participants from six countries from Cornell, UADY and UV. As in 2006, many other contributions and coordination will come from Mexican institutions and farm communities and families.
 - *System dynamics addition to the TIES teaching platform.* Our teaching/training platform and learning were enhanced by adding AEM 494, *Introduction to System Dynamics Modeling*. Enrollment in 2005 included eight Mexican participants, including MS students and UADY, UV and INIFAP students and colleagues. Enrollment in 2006 includes five Mexican students. This course builds on concepts introduced in previous TIES training events, and provides an integrating systems-oriented framework for other research and instructional activities. Course participants in 2005 were from diverse backgrounds (e.g., systems ecology, public administration, economics, systems engineering, animal science) and many countries (e.g., Kenya, Turkey, China, Italy, Canada, US, Mexico). Course materials and videotaped lectures are accessible to registrants via the Cornell Blackboard Web site for AEM 494.
- *Short-term training.* Short-term training at Cornell University was concluded in November 2005 for a six-member team of (four) Mexican scientists and (two) graduate students from UADY, UV and INIFAP. Training elements were identified in our 2004-05 annual report (http://tiesmexico.cals.cornell.edu/reports/documents/narrative_051031.pdf). Trip reports by the UADY team and by UV's Dr. Canudas may be found at our TIES Web site at (http://tiesmexico.cals.cornell.edu/teaching/documents/trip_report_uadyteam.pdf and http://tiesmexico.cals.cornell.edu/teaching/documents/trip_report_canudas.pdf).

A special semester-long training program at Cornell University commenced in August 2006 for three UADY graduate students. The period of this training is from August 20 to December 9, 2006. This training builds on the long-term participation by these students in many other TIES training and research activities. Their participation in 2004-06 included five short courses taught at UADY and the Universidad Veracruzana, videoconferences, and a field course as part of the

platform of joint courses. These students are: Gabriela González, Miguel Huchín and Andrés Calderón.

- *Research platform.* The following thesis projects are currently underway by Cornell graduate students and are a central part of our TIES research agenda:
 - *Nutrition management decision making: A case study of beef cattle systems in Tizimín, Yucatán, México.* Kotaro Baba (Japanese MS student). Mexican collaborators: Guillermo Ríos, Juan Magaña and Francisco Juárez, and doctoral students Valentín Cárdenas and Fernando Duarte (also an INIFAP scientist). This thesis project, focused on management of Yucatecan beef cattle systems, is expected to be completed in November 2006.
 - *Enhancing the sustainability of smallholder crop-livestock systems in the Yucatán Peninsula.* David Parsons (Australian doctoral student). One year of field work for this independently funded project began in January 2006. Key collaborators include various Yucatecan farmers and UADY faculty and students.
 - *Forage-based opportunities to improve productivity and profit of dual-purpose cattle systems in the State of Veracruz, México.* Victor Absalón (Mexican MS student from Veracruz). UV and INIFAP collaborators: Francisco Juárez, Bertha Rueda, Eduardo Canudas, and Gabriel Díaz P. This thesis project contributes to an INIFAP-funded project led by Dr. Rueda, “Nuevas opciones de producción sostenible para el sistema de bovinos de doble propósito en el trópico mexicano.”
 - *Growth performance and nutritional management of juvenile cattle.* Luis Nabté (Mexican MS student from Yucatán).

These thesis projects have inherent linkages with farmers, farmer cooperatives, GGAVATTs (Grupo Ganadero de Validación y Transferencia de Tecnología), state government organizations like Fundación Produce, and with our teaching platform, especially through the IARD 602 itinerary of field visits for 2007.

Other research collaborations are underway. We are working to integrate analyses from our rapid appraisal of sheep-owning smallholders with results from the sheep system simulation model for an article to be submitted to the journal *Agricultural Systems*. Also a detailed Spanish-language summary of the results of the rapid appraisal project is in preparation in collaboration with faculty and graduate students at UADY.

- *Mid-term partnership planning meeting.* A mid-term internal evaluation and partnership planning meeting was held January 18, 2006 in Veracruz. (See minutes of this meeting at http://tiesmexico.cals.cornell.edu/reports/documents/narrative_060118.pdf). Primary objectives were to evaluate achievements, consider value-adding program modifications for the second half of the project, discuss collaborative research opportunities especially involving Mexican MS students, and discuss the objectives and plan for external evaluation of our TIES project.
- *External evaluation conducted, June-July 2006.* All partners and collaborating individuals were involved in project evaluation planning. The external evaluation carried out by Dr. Lucia Vaccaro was conducted in two phases: a brief one at Cornell followed by a substantial one in Mexico, July 1-9. The Mexico phase included consultations at both partner locations: UADY (Mérida) and UV and INIFAP (Veracruz).

Dr. Vaccaro's report was distributed to all partners and may be obtained at our TIES website, http://tiesmexico.cals.cornell.edu/reports/documents/present_first_external_evaluation_report.pdf
Key conclusions and recommendations were (report section 5):

- Owing to an “impressive list of activities and outputs ..., which fit closely to those originally planned”, assessments were that:
 - “There has been consistently positive impact at the personal level.”
 - “A *widening of vision* is one of the benefits most consistently reported.”
 - “Special importance is also attached to the changes at the institutional level...”
- Nonetheless, despite “strong institutional commitment to the project on the Mexican side...An extra effort is required in the project's final year if fullest benefit is to be obtained from major investment (financial, time and effort) already made by the partner institutions, and if fullest advantage is to be taken of the opportunities it offers. The more successful its completion in 2007, the greater the options the Mexican partner institutions will have for obtaining financial support for developments they plan to make in the future.”
- *Future publications.* Efforts continue towards the goal of Spanish-language publication of the results from our rapid appraisal of Yucatán sheep production systems. Work also continues with the aim of submitting in 2007 a journal article to *Agricultural Systems* on the dynamics of sheep production systems in the Gulf Region with analysis of policy options. This article would be a chapter in the dissertation of D. Parsons.

2. Results/outcomes.

Activity	Results/Outcomes
<i>Master of Science degree programs</i>	Students acquire the necessary skills and guidance to carry out their own research focused on Mexican problems and issues.
<i>Teaching platform</i>	The expected outcome in 2006-07 is to achieve broad impact on thinking by a larger number (than in 2005-06) of students and faculty at UADY and UV, and at Cornell.
<i>Web-platform</i>	More information has been made available to students, faculty and scientists at partner institutions and others. This platform constitutes a <i>global learning forum</i> for TIES partners and other institutions.
<i>Short-term training</i>	More UADY students will have the opportunity to team with TIES colleagues and other students and faculty at Cornell while also sharing responsibility in “taking home” what they learn so it can be discussed with peers and faculty.
<i>External project evaluation</i>	Hopefully, evaluation recommendations will help assure greater achievements in 2006-07 and larger benefits and long term impacts for all partners.

<i>TIES student research</i>	This information should enrich teaching and research programs at all institutions and help to develop practical recommendations for farmers and their advisors.
<i>Future publications</i>	Publication will inform larger audiences in Mexico and abroad about agricultural challenges and problem-solving approaches in the Gulf region.

3. How are the activities mentioned in question 1 helping to strengthen the capacity of the Mexican higher education institution?

All teaching, training and research activities, and concomitant institutional and personal interactions, helped to better define and understand problems affecting farmers in the region. Each of the five courses on our teaching platform and the planning of thesis and other research projects were aimed at resolving management challenges of livestock owners. They also provided substantial interactions and “food for thought” foment and reflection about curriculum design and modifications to better prepare the next generation of professionals to effectively address Mexican problems and challenges. The IARD 602 field laboratory—putting together in farmer’s fields an international team of students and faculty, farmers and other Mexican professionals—was catalytic in this regard. The overall goal is for livestock owners, their communities, and other professionals to benefit from a functional partnership focusing on decision support of the systems they manage. As emphasized in the external evaluation report, these activities have challenged UADY to consider needed adjustments—some structural in nature, others operational—to implement appropriate curricular changes and to capitalize on the learning and potential institutional synergies from this and future international partnerships.

4. How are the activities from this partnership helping to strengthen the capacity of the Mexican community and/or community institutions?

Our IARD 602 field course and research activities have visibly demonstrated to farmers, farmer organizations and rural communities that the university is reaching out to them. They also demonstrate concern about the need for effective responses to their problems and for enhanced management capacity to assess and act upon technology, market and policy changes.

This field laboratory is also fundamentally a community and rural outreach activity facilitated by those working in this forum. Farmers from all backgrounds—ejidatarios to commercial agribusiness owners—and other professionals in the rural sector were gratified by the attentions given and the importance ascribed by this international field course to their communities and livelihoods.

5. How are these activities benefiting the U.S. higher education institutions?

These activities build capacity and enhance Cornell’s ability to train future professionals from around the world to deal with pertinent global, as well as Mexican, problems. As a result, Cornell faculty members further developed skills in the application of methods and technologies to facilitate cross-cultural, interdisciplinary research and instruction. Personal interactions and communications also have been strengthened between interested faculty members and research scientists in addressing real-world problems and constraints. These are mutual benefits. Through program achievements, starting with the 2004-05 TIES short courses, short-term training, and full implementation of our teaching and research

platforms, Cornell is also better prepared to focus on relevant issues with scientists and students at partner institutions.

6. How are activities benefiting the U.S. community and/or community institutions?

Public awareness and consciousness about pertinent Mexican, regional and global issues—global citizenship—have been enhanced. Specific educational outreach mechanisms are through US student participation in (and parental and home community knowledge about) core courses, our Web-platform information clearinghouse, and press articles about modern educational programs. For example, the attached April 6, 2006 article, “Cornell students visit ‘living labs’ of Mexico and India”, was published in a *Cornell Chronicle* edition that was circulated to all US land grant institutions (see page 10 at http://www.news.cornell.edu/Chronicle/06/04_06_06.pdf).

7. List other collaborating Mexican institutions, e.g., NGOs, community-based organizations, government agencies, small businesses, education institutions, and briefly describe their involvement in partnership activities during the past fiscal year.

Many others have contributed to our partnership’s teaching and research platforms.

- Teaching platform collaborations included the following.
 - *Colegio de Posgraduados, Campus Cárdenas, Tabasco (ColPos)*. Professors Lorenzo Aceves and Mario Osorio were key collaborators in the planning and coordination of the Tabasco segment of the IARD 602 field laboratory. Prof. Osorio gave a presentation about ColPos graduate student training and research programs. Prof. Aceves also contributed a key videoconference presentation in IARD 402 in 2005 about Tabasco’s agro-climatology.
 - Several other institutions, individuals and business owners contributed as “guest professors” in the IARD 602 laboratory addressing real-world problems. Many individuals were involved (see **itinerary** at the IARD 602 Web site), including:
 - *Papaya Caribe*. A papaya export business also involved in forestry, horticulture and livestock production.
 - *Comisión Nacional de Áreas Protegidas*. A government agency charged with managing the Ría Lagartos Biosphere Reserve.
 - *Ejido Yaxchekú*. A Yucatán ejido managing a diversified agricultural portfolio including honey bees.
 - *Chocolates Casep*. A vertically-integrated cacao farm and chocolate manufacturer in Tabasco.
 - *Ejido Villa Cuahtemoc*. These ejidatarios in Tabasco informed about the lack of technical assistance and social networking to help support their livelihoods from cattle, copra and other crops.
 - *Rafael Aguirre*. Entrepreneurial agrí-businessman and cattle producer in Veracruz.

- *Silvio Lagos*. Veracruz congressman (and former federal congressman) who discussed development needs of the Mexican rural sector.
 - *GGAVATT Nueva Generación*. Leaders of this livestock NGO, accompanied by INIFAP consultants, informed about dairy production and marketing challenges in the Veracruz highlands.
 - *GGAVATT Génesis*. At their annual planning meeting this NGO membership of *ejidatarios* informed about their business model and the need for dedicated participation by each member.
 - *INIFAP El Palmar Research Station, Tezonapa*. INIFAP researchers informed about agroforestry, reforestation and integrated cropping options (e.g., tropical fruits, spices, rubber) for local farmers.
- Student research projects are underwritten through individual farmer collaborators and farmer organizations who are partners in these studies. For example, the farms of six smallholder collaborators are research sites for the doctoral study by D. Parsons. Many farmers and farmer organizations are collaborators with university and INIFAP scientists in the studies led by K. Baba and V. Absalón.
8. List other collaborating U.S. institutions, e.g., NGOs, community-based organizations, government agencies, small businesses, education institutions, and briefly describe their involvement in partnership activities during the past fiscal year.
- *University at Albany, State University of New York, School of Business*. The Mexican MS students had the opportunity to interact with systems researchers from the School of Business to complement the AEM 494 course materials.
 - *Dowling College, School of Business, Oakdale, NY*. The Mexican MS students had the opportunity to attend a seminar on “participatory systems model building” presented by a faculty member visiting Cornell. This activity complements material covered in AEM 494 and may be an important component of future joint diagnostic and research efforts.
 - *Ventana Systems, Inc (a systems modeling consulting company)*. The Mexican MS students had the opportunity to meet with a Senior Consultant from Ventana Systems, Inc. during his visit to Cornell. They discussed the application of systems modeling in consulting and business, and attended presentations on integrated modeling of the global climate system and the future of electricity generation in China.
 - *Dr. Jack Homer*. The Mexican MS students and the three short-term trainees met with Dr. Homer, a systems modeling consultant specializing in business and health policy issues. The students also attended a seminar by Dr. Homer on health policy, which complements the material covered in AEM 494.
 - *University of California, Berkeley*. The Mexican MS students and the three short-term trainees met with Ms. Leslie Martin, a PhD candidate in the Department of Agricultural and Resource Economics at UC Berkeley. Ms. Martin discussed modeling work on agricultural production chains in Bolivia funded by the World Bank, and presented a lecture on a variety of applications of system dynamics modeling in AEM 494.

- *Dr. Richard Dudley (a systems modeling consultant).* The Mexican MS students had the opportunity to meet with Dr. Dudley, a fisheries biologist who applies systems modeling in his work. His work on fisheries depletion is relevant for issues discussed during the IARD 602 course with a local fisherman's cooperative. In addition, Dr. Dudley presented a seminar on the use of systems modeling to evaluate programs that make payments to farmers for environmental services. This has relevance for programs in the watersheds in Veracruz State visited during IARD 602.
- *Northland Sheep Dairy, Freetown Corners, NY.* The eight Mexican participants in fall 2005 and five in 2006 visited this local organic sheep dairy to discuss its forage management practices, nutrient cycling and its efforts to evaluate the sustainability of its management practices. This activity reinforced learning related to systems thinking and modeling and provided a useful contrast to the sheep production and marketing systems in Mexico.
- *Scheffler Dairy Farm, Groton, NY.* In fall 2005 TIES trainees from UADY, UV and INIFAP visited this 50 cow dairy farm that made the transition to organic production in late 2003. Owner-operators Ed and Eileen Scheffler explained organic dairy management systems and markets, the decision-making processes that preceded the transition, and the ongoing learning process that was required. This visit provided an example of how some farmers are responding to rapid structural and market changes in the US dairy industry. Participants learned about the roles that informal innovation and farmer-to-farmer networks are playing as small producers respond to the challenges of change.
- *Hardie Farms, Lansing, NY.* In fall 2005 TIES participants visited this free stall dairy farm housing more than 800 cows and met with owner-operators Skip Hardie and Steve Palladino. This visit offered a contrasting example of managerial response to rapid agricultural industry change. Undergoing major expansion in the past two decades, Hardie Farms employs state of the art technology and economies of scale for labor, capital and management inputs to thrive when average producers are encountering shrinking net profit margins. Participants discussed design elements of milking parlors, free stall housing, feed storage and facilities for manure handling that are typical of large, confinement dairy operations. Mr. Hardie discussed the role of various knowledge and information sources—including university researchers, extension educators, private consultants and other farmers—to facilitate the efforts of his management team.
- *Cornell Sheep Farm (Animal Science Training and Research Center), Harford, NY.* Mexican TIES participants discussed common sheep management systems in New York State with Farm Manager Brian Magee. Visitors toured facilities and discussed Cornell's research and extension programs (<http://www.ansci.cornell.edu/sheep/index.html>).
- *Cornell Beef Farm (Animal Science Training and Research Center), Harford, NY.* Mexican TIES participants discussed common beef systems in New York State with Farm Manager Debbie Ketchun. Visitors were given an overview of how the university works with producers in a program of applied research and extension (<http://www.ansci.cornell.edu/beef/beef.html>).

9. What has been the partnership's greatest success(es) this past fiscal year?

- *IARD 602 two-week "living laboratory".* This joint teaching experiment was a resounding success in fact-finding and in building personal relationships and cross-cultural teams while analyzing constraints affecting farmers and rural populations in the Gulf region. Camaraderie,

enthusiasm and excitement, and fluid communication among Mexican, US, Australian, Indian, Italian and Japanese participants were fostered through a structured itinerary for the gathering of information. This learning experience—unique for Mexican participants and others—involved many farmers and professionals in Mexico’s agricultural and natural resources sector. This information gathering mission was especially successful due to concerted efforts by UADY, UV, INIFAP and ColPos colleagues and many gracious hosts. This laboratory experience was complemented by written term projects and videoconference presentations by students about issues that were observed to impinge on farmers and communities in this region.

- *Enhanced understanding of methods and technologies for collaborative research and instruction.* As a result of our partnership activities, better appreciated are videoconferencing, Web-platform and face-to-face interactions as valuable constituents of a problem-oriented coursework curriculum and for designing thesis research projects.

Alternative approaches and methods of instruction and learning have been demonstrated through short-term training and the five courses constituting our TIES teaching platform. Details are found at our TIES project site (<http://tiesmexico.cals.cornell.edu/>) and on our Web platform of course sites. These activities and interactions facilitated discussions with all partners about coursework focus and content and about problem-solving priorities and feasible research design (e.g., principal drivers and feedbacks affecting performance of livestock and farming systems).

Learning materials archive. Besides educational materials (literature references, Powerpoint presentations) from the five short courses in 2004-05, materials are also accessible (and downloadable) for all courses in this 2005-06 partnership program through our TIES Web site (<http://tiesmexico.cals.cornell.edu/>) and Web-platform. Furthermore, a total of 54 video-with-Powerpoint presentations from the 2005-07 academic years are currently available (soon to be a total of 67 presentations) via **Cornell Transnational Learning**.

10. Briefly describe any programmatic challenges during this past fiscal year.

As acknowledged in the external evaluation report, the partnership has faced serious challenges in determination of decision-making authority and UADY administrative and logistical support, which made successful achievement burdensome. Despite agreements to remedy chronically slow action with more efficient and timely execution of project tasks, change has been slow. Project activities need to be carried out in a more efficient and timely manner in order to fully realize, and not jeopardize, the expected benefits for all partners. Other key challenges include reducing barriers and increasing institutional encouragement and faculty support to obtain greater faculty and student participation in joint courses and videoconferences. Significant improvement has occurred in participation by UADY and UV students and faculty in this semester’s IARD 402 videoconferences. An action of central importance is to determine a credit-granting mechanism for UADY students enrolled in courses on the TIES teaching platform.

Another goal has been to identify mechanisms for greater participation by partners in Veracruz. All IARD 602 field trip participants were grateful for the highly valuable 2006 field trip facilitation and coordination by UV and INIFAP collaborators and by the participation of three UV students in the Veracruz field laboratory component. (One of these students, Omar Cristobal, began an MS degree program at Cornell in August.) For the 2007 edition, the UV will have two MS students participate in the entire field trip and with additional UV students participating in the Veracruz component.

11. Is your partnership working with Mexico's *Consejo Nacional de Ciencia y Tecnologia* (CONACyT)? Please describe involvement and information about any scholarship(s) awarded.

No. As indicated in our comprehensive report for the period ending September 30, 2005, we attempted to obtain CONACyT scholarship support for new TIES applications. PIFOP-CONACyT funds were utilized by UADY to support their graduate students in August-October 2005 short-term training at Cornell.

12. Outline your partnership's **planned activities** for the next three months.

- Continue training at Cornell University of three Mexican MS students (Victor Absalón, Luis Nabté, Omar Cristobal) who are participants in and contributors to our TIES research and teaching platforms.
- Plan and carry out five courses constituting the 2006-07 teaching platform, including the IARD field laboratory scheduled for January 3-18. These courses, described earlier in this report, include substantial videoconferencing and preparation of electronic media adaptable for use by students and faculty in UADY and UV teaching programs.
- Revise Web sites for courses on the teaching platform.
- Complete thesis project of K. Baba focusing on management of Yucatecan beef cattle systems.
- Continue dissertation research project of D. Parsons on sustainability of Yucatecan crop-livestock systems.
- Complete the detailed Spanish-language summary of rapid appraisal survey information about Yucatecan sheep production systems.
- Draft a journal article to *Agricultural Systems* on the dynamics of sheep production systems in the Gulf Region and analysis of policy options.
- Further develop the MS thesis project of V. Absalón focusing on the management of dual-purpose cattle system in the coastal plain of Veracruz in collaboration with UV and INIFAP colleagues.
- Complete the semester-long training of three UADY graduate students at Cornell University, providing each of them with formal course work and research-related assignments.
- Continue delivery of the platform of joint courses for the 2006-07 academic year. Finalize planning of the "living laboratory" field course, IARD 602, which will be operated January 3-18, 2006 in Yucatán, Chiapas, Tabasco and Veracruz with student and faculty participants from UADY, UV, the Colegio de Posgraduados (Campus Cárdenas), and Cornell.

13. Please list all partnership-related events (ceremonies, conferences, meetings, workshops) in the U.S. and Mexico that will take place during the next three months and include **dates and locations**. HED and USAID will use this information to schedule site visits.

- *August 20-December 9, 2006.* Full semester training of three UADY graduate students at Cornell University, Ithaca, NY.

- *January 3-18, 2007.* IARD 602 “living laboratory” field course will be operated in Yucatán, Chiapas, Tabasco and Veracruz.

14. How has information about your partnership been disseminated during this reporting period?

- *Web-platform.* Information has been disseminated through our TIES Web site (<http://tiesmexico.cals.cornell.edu/>) and through the five course sites identified above.
- *TIES photo albums. Cornell-UADY partnership: Prof. Robert Blake’s photos* is a flickr Web location (<http://www.flickr.com/photos/81651699@N00/sets/>) containing more than 60 albums with over 2500 photos about our partnership activities. These photos are also accessible via the slide shows section of our TIES project site and the field trip itinerary at the IARD 602 site. Photographs are provided to HED and USAID-Mexico through this mechanism.
- *October 27, 2005.* A general information article about our partnership based on interviews of short-term training participants from UADY, UV and INIFAP was published in the *Cornell Chronicle*. Entitled “Cross-border team to help Mexican farmers better manage their livestock”, this article may be accessed at *ChronicleOnline* (http://www.news.cornell.edu/stories/Oct05/Mexican_Scholars.kr.html) and in the *Cornell Chronicle* archive at www.news.cornell.edu.
- *April 6, 2006.* “Cornell students visit ‘living labs’ of Mexico and India” was published in a *Cornell Chronicle* edition circulated to all US land grant institutions (see page 10 at http://www.news.cornell.edu/Chronicle/06/04_06_06.pdf or the attached Cornell Chronicle article April 6, 2006.jpg).

Environmental Mitigation Assessment

Please answer the following questions if the partnership conducted or trained others to conduct activities that have the potential to result in negative impacts on the environment.

1.	<p>If you implemented activities last year, what specific activities had a potential environmental impact, either positively or negatively?</p> <p>We did not have any implementations carrying direct environmental impact (except via farmers’ practice of animal agriculture itself). However, expected impacts would be negative if livestock management ignored ecosystem considerations like those mentioned above, which is among project considerations. They would be positive, or at least less unfavorable, if management strategies effectively consider ecosystem dynamics, amelioration of unwanted environmental impacts, and regeneration of natural resources (e.g., biodiversity in flora and fauna).</p>
2.	<p>If you conducted capacity building activities that have the potential to impact negatively the environment, what environmental mitigation and impact assessment trainings for Mexican participants have been included in the activities?</p> <p>This emphasis is especially incorporated into four courses on our teaching platform, IARD 402, IARD 602, AEM 494 and AnSc 400. Although we are not focusing directly on the assessment of potential negative environmental effects of agriculture or their mitigation, these courses especially acknowledge the need for specific actions to ameliorate unfavorable impacts and to regenerate stocks of agro-ecosystem resources. For example, attention is devoted to strategies for managing and utilizing native plant species, especially multi-use species and habitat that provide ecosystem services as well as livestock feed and fuel for rural households. The doctoral dissertation research project of D. Parsons is focused on the dynamics of nutrient stocks, flows and feedbacks in Yucatan farming systems with sheep with the goal of</p>

	<p>understanding how these systems can be made both more productive and sustainable. Our systems-oriented approach has broadened the research agenda and will result in greater ability to assess how interventions can minimize the “unintended consequences” (negative side effects) including various forms of environmental degradation.</p>
3.	<p>What research and evaluation was conducted to mitigate any potential negative environmental impact of these activities?</p> <p>Activity of this kind has not been conducted by our partnership. Although direct implementations are an acknowledged need, our plans include options to ameliorate undesirable impacts.</p>
4.	<p>What specific techniques or processes were established to mitigate <u>and</u> monitor the environmental impact of these activities? Please include <i>who</i> has been involved in the process and <i>when</i> this has taken place.</p> <p>Our project planning and coursework platform incorporate valuable essential ecosystem principles and considerations. Although environmental mitigation and monitoring are not focal project undertakings, students have undertaken these issues as part of their scholarly pursuits (e.g., written projects and oral presentations in IARD 602). We are continuing to foster this process through the inclusion of relevant environmental issues in our coursework platform. For example, see the IARD 402 class itinerary (http://ip.cals.cornell.edu/courses/iard402/2006fall/mexico/index.html).</p>
5.	<p>Are mitigation techniques working?</p> <p>As indicated above, we have not undertaken any direct implementations. However, one project objective is to limit or minimize unfavorable environmental effects, especially negative impacts of farming system management options on biodiversity of flora and fauna.</p>