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The University of **Montana**

University Development Linkages Project

"Institution Building and Internationalization at the University College of Belize and the University of Montana: Models for Sustainable Resource Development"

(936-5063)

1st Annual Report FY 1992

Cooperative Agreement No. DAN-5063-A-00-1116-00

Submitted to:

Dr. Ruth Frischer, UDLP Director

Agency Center for University Cooperation in Development

Bureau for Research and Development

Agency for International Development

Washington, D.C. 20523

October 30, 1992

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University Development Linkages Project**

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We have summarized the activities undertaken during Year 1 of this grant. We have included a description of progress toward the completion of each linkage objective as per our Year 1 Workplan. Problems and barriers affecting linkage progress, sustainability of the linkage, and quantitative outputs of the linkage will be addressed. An assessment of the impact of the linkage on internationalization of UCB, UM, and LCNF as well as on UCB's capabilities to meet Belizean societal development needs is included as part of this annual report.

Objective 1: Develop capabilities of the UCB Department of Adult and Continuing Education (ACE)

UM identified and initiated contacts with UCB administrators regarding development of a continuing education program. To begin with, three UM faculty members, UCB faculty and staff, and senior officials from three Government of Belize (GOB) Ministries, met in Belize in mid-December. Their discussions touched on ways of integrating UCB academic programs with the natural-resource management and economic-development needs of Belizean society. At the same time, three Lewis and Clark National Forest (LCNF) resource professionals met with UCB and GOB personnel to review separate, but complementary, short course training activities in various natural resource management fields. LCNF and the Belize Department of Forestry also formally signed a memorandum of understanding establishing the first Conservation Ambassador Exchange Agreement between a U.S. National Forest and a counterpart forest in a developing country (see Appendix: Formalizing the Lewis and Clark National Forest-Belize Linkage).

As a result of the directors' meetings with the Executive Committee and the Advisory Council in Belize, all UM and Lewis and Clark National Forest (LCNF) short courses will be offered through the UCB ACE program. A list of prioritized short courses to be offered during Year One of the project was agreed

upon by the Advisory Council and Executive Committee and guided UCB, UM, and LCNF short-course selection. The top-level priority courses are: fire management (LCNF), parks management, buffer-zone management, environmental- and social-impact assessment, carrying capacity/limits of acceptable change (marine focus), resource-inventory methodologies (forest and wildlife), and tourism-research methods.

Dedication of the new site for the UCB ACE campus in Belmopan occurred during winter 1992. Construction is scheduled to be completed in late 1993.

Project Co-director, Dr. Siebert, worked with UCB counterparts in April to standardize short course recruitment procedures, streamline short-course administration, develop UCB credit or certificate granting mechanisms, and develop guidelines for course length and format.

LCNF and the Belize Forest Department signed a memorandum of cooperation and identified high priority areas for cooperative action over the next several years. "Fire Management" was selected as the top priority for immediate collaboration. Funding for all LCNF and Belize Forest Department activities will be provided by the U.S. Department of Agriculture Forest Service.

Mr. Joey Belisle, UCB Director of ACE, worked with the UM Dean of Continuing Education, the Director of International Programs, and other counterparts and faculty at UM for two weeks in June. Mr. Belisle worked primarily in the areas of program development, project administration, and curriculum development as it relates to UDLP-funded short course offerings in Belize and to the development of the UCB ACE Program. In addition, Mr. Belisle met with resource-management professionals at LCNF and arranged for the Fire Management course to be offered through UCB and for UCB credit to be granted to course participants.

Oswaldo Sabido, an official of the GOB Forestry Department, visited with staff at the LCNF and The University of Montana in July. He is the manager of the Mountain Pine Ridge Field Station. Discussion focused on the UM faculty-assisted short-course on silviculture for Forestry personnel at Mountain Pine Ridge Field Station.

Dr. Steve McCool, Professor of Tourism and Recreation Management and Director of the Institute for Tourism and Recreation Research, was the first UM faculty exchangee to UCB from April 2 to May 25. While in Belize, Professor McCool taught two short courses ("Limits to Acceptable Change" and "Tourism Research Methods"). The "Limits to Acceptable Change" course was offered in San Pedro, an area experiencing rapid economic and tourist development. Six participants attended. Dr. McCool developed the "Tourism Research Methods" course in cooperation with the Belize Tourism Board. Ten participants attended.

For UCB, Dr. Jack Meyers, principal scientist at the Belize Zoo, developed and offered a short course entitled "Wildlife Management" in August. Fifteen GOB and NGO personnel with natural-resource management responsibilities participated. Dr. Meyers also prepared a short course on Wildlife Inventory Methodology to be presented to NGOs and GOB officials in October 1992.

During the fourth quarter, the ACE Director, Mr. Joey Belisle, completed evaluations of his learning experience at the University of Montana, continued professional consultation with the Dean of UM's Center for Continuing Education, and began to apply what he had learned at UM during his staff exchange experience. Dr. Richard Solberg, UM's faculty exchangee, worked with Mr. Belisle on ACE program administration and on short-course implementation.

Progress made in accomplishing Workplan objectives

During Year 1, project participants completed the list of linkage stakeholders, the training-needs assessment, and the first list of prioritized short courses. The first series of training courses were developed and offered. A total of 31 Belizeans received training through short courses sponsored by UCB. The following agencies collaborated with UM, UCB, and I.C.N.F. in the delivery of these short courses: The Belize Zoo, Belize Center for Environmental Studies, Belize Audubon Society, and Belize Tourism Board.

The project directors, UM's Dean of Continuing Education, and Dr. Solberg devoted considerable effort to developing UCB's administrative ability to plan, organize, advertise, and deliver short training courses and to operate an Adult and Continuing Education Center. Progress has been slow in some of these areas. However, it is encouraging to note that UCB delivered one highly regarded short course on its own during the first year, and planned a second.

ACE's long-term role and capacity to assume all natural-resource training and outreach activities is not yet firmly established. However, the directors gained valuable insights regarding this objective during the first year of the partnership and explored potential cooperative strengthening arrangements in discussions held in Washington, D.C., with staff of the World Wildlife Fund, the U.S. Forest Service, the Japan International Cooperation Agency, and in Missoula with Glenn Godfrey, Belize's Minister of Tourism and the Environment.

Objective 2: Enhance capabilities of UCB faculty and staff

After identifying the key professional-development needs of UCB staff and faculty and developing a process for the selection of UCB personnel to study at UM, UCB nominated one candidate for doctoral work at UM from a total of thirteen external applicants. A nation-wide recruitment effort was made by UCB;

the scholarship opportunities were advertised on local Belize radio and in newspapers. UCB nominated, and UM accepted, Mr. Vincent Palacio, formerly of the Ministry of Tourism and the Environment, to pursue Ph.D. studies in the School of Forestry at UM. After completion of studies at UM, Mr. Palacio will become UCB's first faculty member in the field of natural-resource management and environmental sciences. Mr. Palacio began his studies at UM in August. He is working with Dr. McCool in the field of tourism and recreation management. He also began his assistantship assignments at UM, which involve developing a survey with the Belize Tourism Board to assess the impact of different factors on the tourist industry in Belize, and working with the OIP to create a data base of faculty members with international work experience or interest. UCB is committed to assigning one additional faculty member in the area of natural-resource management linkage project in addition to Mr. Palacio.

UM and UCB agreed to the provisions of a formal exchange agreement and UM President George Dennison visited Belize to conclude deliberations and sign the agreement. UM's Office of International Programs initiated campus processes for the recruitment and selection of faculty and staff exchangees. Housing arrangements for exchangees were finalized, and pre-departure orientations for UM faculty and staff exchangees were conducted. UM's first staff exchangee, Carol Gable of the Controller's Office, worked primarily in the UCB accounts office where she developed a computerized system for UCB accounting and assisted UCB counterparts conduct an inventory of fixed assets. Dr. Richard Solberg provided consulting assistance to the new UCB Acting Dean of Academic Affairs and general administrative assistance to UCB counterparts. He sat on the Dean's Council. He drafted a final copy of the UCB catalog, met with the UCB Academic Affairs Committee to discuss student grade appeals and program, and worked on faculty promotions and tenure procedure and criteria.

During his attachment at UM, Mr. Joey Belisle studied project budget and accounting practices, project monitoring and evaluation, means of enhancing the Project Advisory Council, and ways in which UM faculty and staff could be better integrated into UCB programs and courses. Karen Card of the UCB

Personnel Office worked with the UM Human Resource and Accounts offices for two weeks. Ms. Card gained valuable experience in a broad array of personnel-management areas.

UM received a draft of UCB's cost accounting for the first installment under their subcontract.

Progress made in accomplishing Workplan objectives

in year 1, present and future UCB faculty needs were identified. The principal focus is on developing UCB faculty expertise in environmental sciences, natural resources, ecotourism, and applied development. UCB faculty professional development began with Vincent Palacio initiating Ph.D. studies in the UM School of Forestry. UCB's priority staff needs were identified and staff enhancement was started with Joey Belisle and Karen Card's visits to UM. This part of the project is proving to be of critical importance. The delivery of quality educational services requires efficient administration. Grant administration at UCB needs to be addressed further.

Objective 3: Curriculum and course development at UCB

UM and UCB agreed to the provisions of a formal institutional exchange agreement.

UM faculty and UCB counterparts considered possible curriculum and program development in the field of environmental sciences, and exchanged ideas regarding the most appropriate course formats for UM faculty on exchange at UCB. UCB officially expressed interest in developing an interdisciplinary environmental-science program infused with concern for sustainable development over the course of the UDLP grant, an initiative strongly supported by Belizean project collaborators in the public and private sectors. As tentatively envisioned, the UCB environmental science program would be broadly based, include terrestrial and marine studies, and involve both biophysical and social science subject matter. Other

curriculum and course-development suggestions include: Development Studies, Health Education, and Tourism. The former promises to be valuable to UCB's many public-administration students. The latter would be integrated within the business curriculum.

During his spring 1992 tenure at UCB, Dr. Steve McCool discussed the development of a potential semester-length course dealing with opportunities and constraints to tourism development with UCB counterparts. In August, UM's Professor Solberg commenced teaching a semester-length course in basic genetics to UCB undergraduates, and assisting in curriculum development and design with regard to environmental sciences. In September, he prepared a paper on reorganizing the sciences at UCB.

Dean James Flightner of the UM College of Arts and Sciences attended the annual COBEC meeting in Belize and participated in discussions regarding curriculum needs of tertiary-level institutions. At this meeting, COBEC formally accepted UM's application for membership.

Progress made in accomplishing Workplan objectives

Stakeholders were identified and their needs assessed. Curriculum needs have been reviewed. UCB has expressed official interest in a cross-curricular program in environmental sciences. Discussions regarding modification of curriculum and course development at UCB are on-going between UM and UCB project leaders. Dr. McCool, in addition to lecturing on a regularly scheduled class, discussed a potential course in tourism development in Belize. The Project Directors continued efforts to identify additional UM faculty for the exchange program at UCB. Recruitment and preparation of a core UCB faculty will support curriculum development over the long term.

Objective 4: UCB/UM library enhancement

A UCB library advisory group was established during winter 1992 and charged with responsibility for prioritizing UCB's acquisition needs. At UM, the Office of International Programs project staff compiled a list of project-related books needed by the UM library for purchase in Year Two of the project.

A small, in-house library assembled by UM Project Co-director Siebert currently contains about 60 books, journal articles, and reports relating to Belizean natural-resource management and development issues. Mr. Glenn Godfrey, Belize's Minister of Tourism and the Environment, donated a complete (12 volume) set of the laws and regulations of Belize to the UM School of Forestry. Dr. Richard Solberg acquired five large boxes of books from UM faculty in Biological Sciences for donation to UCB's library. Two boxes arrived at UCB.

Progress made in accomplishing Workplan objectives

In year 1, work commenced on developing a list of key needs and priorities for UCB library acquisition and Co-Director Siebert began assembling a Belize-related library collection using non-AID funds. Lists of library acquisitions for UM were compiled. UM's Mansfield Library volunteered to match UM's grant support for library acquisitions with annual support of \$500 in library acquisitions in the area of development studies.

Objective 5: Development of a field practicum in Belize

Co-director Siebert completed preliminary arrangements for the field practicum following site visits and consultation with the directors of the Monkey Bay Wildlife Sanctuary, Programme For Belize, the Belize Audubon Society, and the Belize Center for Environmental Studies. The annual field practicum will be

offered for the first time in January 1993. The course will be open to 5 UM and 5 Belizean students and is entitled "Belize: Conservation and Development." UM students will be required to complete a pre-requisite course offered during the Fall 1992 Semester ("Belize: Society and Environment"). The field course will be co-taught by Dr. Jill Belsky, Department of Sociology. The course will combine lectures and field exercises and will be conducted in Monkey Bay Wildlife Sanctuary, Cockscomb Basin Jaguar Preserve, and Gale's Point Special Development Zone.

Other completed practicum tasks include: developing course syllabi, identification of field exercises, determination of field sites and securing housing for field course, and advertising availability of course to UM students and potential Belizean participants.

Progress made in accomplishing Workplan objectives

During this Workplan year, stake holders and were identified and an assessment of needs, topics, and sites for the field practicum completed. The first field practicum was planned for early 1993.

Objective 6: Collaborative Research Projects

The UM Project Co-Directors created a small grants funding mechanism to encourage collaborative research between UM faculty and Belizean counterparts. The principal goal is to provide seed money for proposals that possess future promise. Dr. McCool, UM School of Forestry, and Joy Vernon of the Belize Tourism Board developed a collaborative research proposal to investigate the values and interests of international tourists traveling to Belize and their perception of limits to acceptable change. After review and revision, the completed proposal received funding under the grant's collaborative seed money program. Vincent Palacio will assist in this project.

As a result of his visit at UM, Mr. Sabido extended an open invitation for UM faculty and graduate students to conduct research at the Mountain Pine Ridge Field Station. The Station will provide free housing and possible counterpart assistance in the areas of forest management, wildlife and recreation.

Progress made in accomplishing Workplan objectives

A process for developing collaborative research proposals has been established. A proposal developed by Dr. Steve McCool and Joy Vernon of the Belize Tourism Board was accepted and awarded \$1,000. An unsolicited research opportunity was made available by the Government of Belize.

Objective 7: Professional development of UM faculty and staff

A major information-dissemination effort occurred during the first quarter. The Office of International Programs prepared and distributed memos and public announcements describing the UDLP Montana-Belize Partnership and associated short-course and exchange opportunities to all UM faculty and staff.

Applications for UM faculty-exchange, short-course, and staff-exchange participants for 1991-92 and 1992-93 were received throughout the year. The Project Co-directors continued to meet with interested UM faculty and to encourage faculty interest.

UCB completed all domestic arrangements necessary for visiting faculty and staff, including housing.

A vehicle for project-related use by UM exchangees and project staff during the course of the grant and for project-related use by UCB over the long term was purchased and delivered to Belize.

The Co-Directors met with Professor McCool concerning his future professional development. Professor McCool has been greatly influenced by his faculty-exchange opportunity in Belize. This was his first experience in a developing country and he benefitted immensely from the opportunity to learn about tourism and resource management under different socioeconomic and cultural conditions. His international perspectives on resource management and the role of tourism in it have provided him with new insights into Montana's tourism and recreation industry. Dr. McCool plans to continue tourism research in Belize and was eager to work with a Belizean Ph.D. student in this field. His future work will benefit not only Belize but also Montana and UM students.

Progress made in accomplishing Workplan objectives

During the 1991-92 Workplan year, two UM faculty and one UM staff member benefitted from professional opportunities in Belize. UM staff in the Center for Continuing Education reported professional development from Mr. Belisle's attachment there. The project co-directors have reviewed interim and trip reports, as well as formal evaluations, with each faculty and staff exchangee in order to adopt changes that would enhance the program.

Co-director Koehn developed a standardized selection process for potential faculty and staff exchanges that is fair and efficient. A pool of interested faculty has been identified. Efforts are on-going to generate interest among UM faculty for semester-long opportunities to teach in Belize. The goal is to send two faculty members per year.

UM staff are achieving national recognition for their work in administering this grant. For instance, UM's subcontract with UCB served as a useful model for Worcester Polytechnic Institute.

Objective 8: Enhance UM international and cross-cultural curriculum

Meetings were held with members of the International Development Advisory Council, the International Committee, and the International Forestry Committee to review the Montana-Belize Partnership and ways in which the project might enhance the international content of UM curricula. In September, UM's International Committee began its systematic periodic review of the University's international curriculum.

The three UM faculty who traveled to Belize in December of 1991 (under separate funding) revised course syllabi based upon their experience in Belize and now include Belizean case studies in regularly offered UM courses. Dr. McCool is adding international case material and slides into several regularly offered UM courses in tourism and recreation management in the School of Forestry ("Issues in Recreation Management," "Recreation Planning," "Visitor Management") as a direct result of his experiences in Belize. In the "Recreation Planning" and "Visitor Management" classes, he will incorporate slides and many examples of the structural similarities and differences between tourism in Montana and Belize. For second year students, he will add an ecotourism section to his "Issues in Recreation Management" class. He also is relying upon his experience in Belize at regular meetings with U.S. Forest Service and Montana tourism industry personnel in his capacity as Director of the Institute of Tourism and Recreation Research.

In May, the School of Forestry elected to transfer Dr. Siebert, Coordinator of the International Resource Management project and Co-director of the UDLP project, to a tenure-track line commencing in September of 1992. As a consequence, several courses emphasizing international resource management that he taught on an experimental basis will become regular UM School of Forestry course offerings including: "International Conservation and Sustainable Development," "Social Forestry," and "Global Resource Issues."

Progress made in accomplishing Workplan objectives

Faculty with Belize experience have begun to introduce new international content into their courses. The School of Forestry has solidified its commitment to an international resource management curriculum with the tenure-track appointment of Dr. Steve Siebert. Several campus-wide and individual school committees commenced their review of UM's international curriculum.

Objective 9: Provide Internship opportunities for UM students

UM Project Co-Director Siebert consulted with directors of Monkey Bay Wildlife Sanctuary, Programme For Belize, the Belize Audubon Society, the Belize Center for Environmental Studies, the Belize Forestry Department, and the Belize Zoo concerning the identification and development of internship opportunities for UM students. He arranged summer-internship opportunities for two UM students in Belize during the Summer (June - September): Rick Anderson with Monkey Bay Wildlife Sanctuary and Margaret Jacklich with the Belize Zoo. Mr. Anderson made an inventory of vegetation and soils, conducted a socio-economic survey of two villages adjacent to the preserve, and explored topics for graduate study. Ms. Jacklich developed interpretive nature trails for the zoo, which included trail construction and the development of interpretive materials. Both internships were funded without A.I.D. money.

As a result of his visit to UM, Mr. Sabido (and Earl Greene) of the GOB Department of Forestry have offered to accept UM conservation volunteers.

Progress made in accomplishing Workplan objectives

During the 1991-92 Workplan year, a list of subjects and sites for possible Internship opportunities was developed with project counterparts. A list of interested UM students was prepared and two students

completed internships in Belize during Summer 1992; one was with the Belize Zoo, and the other was with Monkey Bay Wildlife Sanctuary.

Objective 10: Develop internal advisory group for on-going project planning, monitoring, and evaluation

UM initiated correspondence with UCB regarding the composition and role of two groups: (1) Executive Committee (UM and UCB) and (2) Advisory Council (UM, UCB, and other collaborating institutions in Belize). The project directors considered advice from other sources on the composition of the Advisory Council, specifically regarding including invited observers representing other key stakeholders in the Belizean natural-resource management arena.

During the Co-Directors' January trip to Belize, the inaugural meeting of the Advisory Council was convened. The meeting formalized involvement by governmental and non-governmental project collaborators. Members agreed upon the Council's planning and advisory purpose and on meeting protocol. The group engaged in project-needs assessment and prioritized needs by objective. The group also approved the initiation of specific project activities.

Belizean project collaborators concluded at the first meeting that because the Advisory Council is important and project objectives are sufficiently ambitious, more frequent convening of the Advisory Council should occur. A second Advisory Council meeting was held in early March without the presence of UM representatives. At this time, the UCB environmental-science curriculum was discussed in more detail and the applications of Belizean students interested in attending UM reviewed. The Council further refined the list of short-course priorities.

In April, Co-director Siebert met with Mr. Earl Green, Chief Forester with the Ministry of Industry and Natural Resources, and discussed ways in which the Forestry Department could become more actively

involved in the project. Mr. Green expressed great interest in the project and pledged to assign a forestry representative to attend future advisory group meetings.

The Project Advisory Council continues to assist project planning (especially identification and prioritization of short course needs), monitoring, and evaluation under the direction of UCB project directors. UCB initiated an in-house evaluation procedure for UM-offered short courses and conducted their first evaluations of Dr. McCool's two courses. The evaluations noted the favorable reports made by participants concerning course content and organization, and noted the need to plan courses three to four months in advance in order to facilitate attendance and to allow courses to be tailored to the specific needs and interests of participants.

Progress made in accomplishing Workplan objectives

During this Workplan year, internal and external advisory groups were established. The Project Advisory Council (PAC) assessed project needs and activities, identified priorities and implementation timing, and discussed evaluation procedures. Regular monitoring and evaluation proceeded beyond expectations. In addition to the planned annual meeting of UCB and Belizean collaborators, the PAC met on two further occasions.

Problems Encountered and Responses Adopted

In response to the inordinate amount of time the project directors had to spend on reporting and budgeting requirements, and because Co-director Siebert is now on a tenure-track line, it became possible to hire a part-time project manager. Elizabeth Pancake has been hired on a half-time basis to deal with administrative details related to the grant. Her emphasis will be on budget management and reporting issues. The Co-directors can now focus more attention on implementing long-term project goals, dealing

with specific project activities and on project evaluation and monitoring activities. Co-director Koehn met with UM budget staff and consulted with A.I.D. project officers to resolve budgetary and other issues.

Although not unexpected, the difficulty communicating between UM and UCB slowed progress and hampered full understanding. On the positive side, UCB responded quickly to most faxed communications. It is clear, however, that frequent on-site discussions among the principal participants will be an important ingredient in the success of the project.

There has been a significant and unanticipated increase in international airfare rates from Missoula to Belize City (from \$600 when the budget was submitted to approximately \$800 at present). This threatens to reduce the number of exchanges possible under the project.

UM faculty teaching and research responsibilities have constrained availability for semester-long exchanges to UCB. Consequently, a smaller than anticipated number of applications for semester-long exchanges were received in the first year. The Co-directors are encouraging participation, and are evaluating possible alternatives to semester-long faculty exchanges.

The Co-directors discovered a need to inform A.I.D. mission staff about the flexibility of their UCB partners and the potential for higher-education institution building in ways that promise to contribute to the goals of self-sufficiency in training and sustainable development. UCB staff have been informed that they should deal directly with their UM partners as this is not a mission-managed project.

Thus far, there has been a lack of participation at Advisory Council meetings by representatives of collaborating Government of Belize ministries. Government officials cite personnel shortages and an already over-committed work load by top-level officials for the failure to participate actively on the Advisory Council.

In response, UCB has made a concerted effort to keep ministry personnel informed and the Project Directors continue to attest to the value of Ministry participation.

In general, we have discovered that there is considerable fragmentation in the delivery of natural-resource-related short courses in Belize. There is an urgent need for improved coordination in this area among, at least, the UM/UCB Partnership, the USAID mission, the British ODA, GOB ministries, and NGOs.

The purchase of a project vehicle proved to be time consuming and complex. Following much paperwork, the vehicle was purchased and then driven to Belize by a UM student intern. It has since been serviced and has been an asset to the program.

There proved to be several deficiencies in UCB's planning, organization, and management of the first short course. Co-director Siebert and Belize Center for Environmental Studies staff assisted with short-course logistics during April. Co-director Koehn and ACE Director Bellisie reviewed the planning and administration of short courses through UCB at length during the latter's visit to UM.

Accounting practices at UCB initially were not acceptable to the UM Controller's Office. This resulted in delay of the second subcontract payment to UCB. To make things easier, Co-director Koehn and Project Accounts Manager Sandee Zotnick devised standardized forms for cost-sharing and general accounting for use by UCB and provided UCB counterparts with explicit instructions regarding what is needed. These same forms and explanation have been made available to other project collaborators.

In response to A.I.D. mission requests sent to the Project Officer, we have instituted procedures for the direct forwarding of annual and quarterly reports from UM to USAID/Belize.

Progress Toward Ensuring the Sustainability of the Linkage

During Workplan year 1, a solid basis for an enduring relationship was established between UM and UCB. A visit by UM President George Dennison to Belize in March, along with the commencement of exchanges, internships, and LNCf training programs, solidified this relationship and demonstrated the commitment of UM to the sustainability of the linkage project. The tenure-track hiring of Professor Siebert is a particularly important move toward sustainability of the internationalization effort by UM. UM is committed to maintaining its relationship with UCB even after the UDLP linkage project has terminated. The fact that this project constitutes an important educational and developmental investment for UM and UCB provides a strong incentive for the continued sustainability of the project. UCB's ability to mount its own successful short course also is encouraging.

Nevertheless, progress has been slow in several areas. These include, in particular, the professional development of a critical core of UCB faculty in natural-resource-related fields, curriculum development in environmental sciences at UCB, the establishment and delivery of short courses by ACE, the development of administrative support services at UCB, and the promotion of UM faculty interest in semester-long teaching assignments at UCB. Moreover, the limited resources available on both sides of this linkage (and UCB's youthfulness) make it imperative that additional funding be identified if sustainability of the linkage is to be achieved. It already is apparent that five years will be insufficient to attain fully the institutionalization and sustainability objectives of this partnership. Although the Co-directors are working on proposals that could bring in the external support needed to continue the internship program and the offering of short-courses in Belize, it is likely that additional USAID funding will be required to support some of the other linkage objectives beyond the initial five-year period.

Assessment of the Impact of the Linkage on Internationalization of UM and LCNF

The linkage with UCB has provided an impetus for new strides in internationalization at The University of Montana. UM President George Dennison is dedicated to increasing internationalization and international opportunities for faculty, staff, and students. Four professors in the School of Forestry have introduced Belize-related material in regularly offered courses. The International Committee at UM meets regularly to review the international curriculum and to discuss international conferences, linkages, and exchange opportunities for faculty, staff, and students. OIP is currently working on a data base of faculty and staff with international experience in order to increase these opportunities.

Substantial progress has been made in internationalization of LCNF (see attached memorandum).

Over the last year, there has been growing faculty interest in tropical natural-resource management. Also, an increasing number of courses with international content have been taught by UM faculty -- including Belize-specific material introduced by faculty who have participated in the linkage. There has been an increase in the number of UM students interested in the International Resource Management undergraduate specialization. Over 30 students applied to participate in the first field practicum in Belize. As a result of the linkage and visits by Belizeans to Missoula, there is an increased awareness about Belize on the UM campus and throughout the entire community. The Partnership as a whole has enhanced the national reputation of The University of Montana, the Office of International Programs, and the Forestry School in the international development area.

**Assessment of the Impact of the Linkage on Strengthening Linkage Partner's
Institutional Capabilities to Meet its Societal Needs**

UCB has been successful in its delivering its own short course during the 1991-92 Workplan year. However, there is a need to address the administration of short training courses by UCB and a need for greater coordination among all agencies involved in training in Belize. UCB has made progress in the initial stages of developing its undergraduate curriculum so that it addresses societal needs in the environmental and natural-resource areas. Also, UCB must locate additional outside funding to support its programs in the natural-resource and environmental fields and to support training additional core faculty. Finally, there has been progress in expanding COBEC membership.

UM faculty and staff trips to Belize, as well as trips by UCB officials to UM, have assisted UCB develop its institutional capabilities. Carol Gable assisted UCB in terms of general administration and cost-accounting procedures. Richard Solberg is helping UCB to strengthen its science curriculum and overall administration. Steve McCool assisted UCB's curriculum in the field of tourism and tourism impacts. Project Co-leaders Siebert and Koehn are working with UCB administrators in the identification of international development opportunities. Dean Alexander provided support regarding the development of UCB's continuing-education program that promises to be useful in enabling UCB to meet natural-resource training needs. Residency at UM by Karen Card, Joey Belisle, and Vincent Palacio exposed UCB to various aspects of U.S. university administration, curriculum, and pedagogies, as well as to the role of research, training, and cooperative education, and therefore, enhanced their ability to address societal needs through their professional activities at home.

Quantitative Outputs of the Linkage Activities

During project year 1, the following quantitative outputs were observed: Two School of Forestry short courses were offered by Steve McCool; one short course was offered by Dr. Jack Meyers. Two UM undergraduates completed internships with the Belize Zoo and Monkey Bay Wildlife Sanctuary during summer 1992. Two LCNF personnel travelled to Belize, while one Belize forestry official travelled to LCNF and to UM to assess fire-management needs and to develop an appropriate short course. Two UCB staff members and one junior faculty member have studied at UM, while five UM faculty and staff members have worked at UCB. A 12-volume set of Belize laws and regulations was donated by Glenn Godfrey to UM. UM donated five large boxes of biology books to UCB. Dr. Siebert has established a Belize library collection of over 60 books and journals. Four UM faculty members have revised their course syllabi to include Belize-related international materials. A total of 31 people participated in three short courses given during the year, with three GOB agencies involved in short-course development. The Project Advisory Council met three times during the year.

11.6.(a) and (b) Requirement

This annual report outlines the objectives and activities of the UM-UCB linkage and the results achieved after one full workplan year. During the year, funds to meet project expenses have been used wisely and conservatively to accomplish the goals and objectives set out in the Year 1 Workplan. Purchases for the purpose of the linkage for UM and under subcontract with UCB were based on and made according to USAID guidelines for project purchases. All travel to Belize was made under U.S. flagship carriers whenever available. The project vehicle is a 1992 Ford Truck. Computer and equipment purchases for UCB were made from U.S. corporations. Equipment and supply purchases at UM were made from U.S. corporations.

The recipient did not utilize funds provided by A.I.D. for any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training in connection with the growth or production in countries other than the United States of an agricultural commodity for export which would compete with a similar commodity grown or produced in the United States.

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APPENDIX

FORMALIZING THE LEWIS AND CLARK NATIONAL FOREST-BELIZE LINKAGE

Project Abstract: Conservation Ambassadors is a pilot initiative developed by the Lewis and Clark National Forest to link the National Forest System with the international resource management community. The goal of Conservation Ambassadors is to link each National Forest with a "Partner Forest" in another country. As the pilot Forest for this initiative, the Lewis and Clark has laid the foundation for a long-term partnership with land managers and educators in Belize. This linkage was formalized during a December 16-23 trip to Belize via an MOU between the Lewis and Clark Forest and the Forestry Department of Belize.

Conservation Ambassadors Overview

Issues like Global Warming, Tropical Deforestation, and Biological Diversity signify a new age in conservation. Administrative and political boundaries no longer confine the major environmental issues. Today's ecological problems demand a broader vision. In 1990, Congress and the President recognized this need and passed legislation that greatly expands and strengthens the Forest Service's role in international resource management. Despite this new emphasis, the vision of most National Forests stops at the Forest boundary.

The Lewis and Clark National Forest has taken the first step in tearing down the Forest boundary walls by developing the Conservation Ambassadors initiative. Conservation Ambassadors is a pilot program that links the Lewis and Clark National Forest with "partner" land managers and educators in Belize. The goal of Conservation Ambassadors is to create a formal channel for exchanging expertise and experiences that will lead to improved natural resource management for both partners. We envision Conservation Ambassadors as a breeding ground for innovation, a source of enthusiasm, and a special bond between the Forest Service and the international resource management community.

A cadre of 20 Lewis and Clark Ambassadors have been selected to spearhead this initiative. This team is composed of a diverse array of experienced resource and administrative personnel, including wildlife biologists, range conservationists, foresters, fire management specialists, natural resource law enforcement officer, recreation specialists, cave manager, anthropologist, botanist, marine biologist, planners, and our Forest Supervisor (see Appendix A). The Lewis and Clark National Forest has made a commitment to provide the funds that will enable these individuals to devote substantial time to Conservation Ambassador activities.

A spirit of true partnership is at the heart of Conservation Ambassadors. The Lewis and Clark National Forest will be seeking fresh approaches to natural resource problems from our Belizean counterparts. We will also be seeking to enhance our ability to understand and respect values and cultures different from our own.

Each year the Lewis and Clark National Forest and our partners in Belize will identify at least one cooperative venture. A planning document that identifies the goals, objectives, and strategies for this project will be developed by October 1. These projects will typically require a group of Conservation Ambassadors to spend 1-3 weeks in the host country. Ideally, Lewis and Clark and Belize Conservation Ambassadors will both have the opportunity to visit host countries at least once every other year. Additional work will be completed by Conservation Ambassadors at their home units.

Conservation Ambassadors is designed as a model for collaborative and sustainable international resource management. We envision this effort as the ideal vehicle for initiating the National Forest System into the realm of international resource management.

Formalizing the Lewis and Clark National Forest-Belize Linkage

Overview

To expand the depth and scope of Conservation Ambassador activities in Belize, the Lewis and Clark National Forest (LCNF) will be collaborating with the University of Montana (UM). In February 1991, the University laid the groundwork for a partnership between UM, University College of Belize (UCB), Belizean Government Ministries (GOB), and private conservation organizations ([NGOs] Programme for Belize, Belize Audubon Society, and Belize Center for Environmental Studies). The goal of this partnership is to develop public and private sector institutional and staff capabilities to promote sustainable resource development in Belize.

In March 1991, the LCNF was invited to join this effort to incorporate the skills and experiences of natural resource management practitioners. The Forest committed to this project via a Memorandum of Understanding signed by the President of UM and the Forest Supervisor of the LCNF in April, 1991.

In May 1991, the LCNF hosted the President of UCB and UM's Coordinator for International Resource Management. The UCB President expressed strong support for a UCB-LCNF linkage under the aegis of Conservation Ambassadors. This support has also been echoed by Belize's Ministry of Industry and Natural Resources and Ministry of Tourism and Recreation. At the May meeting, UCM, UM, and LCNF personnel decided that a meeting in Belize was necessary to formalize commitments between the LCNF and Belize partners and develop a framework for cooperative ventures.

Site Visit

A December 16-23, 1991 trip was completed to establish the framework for a long-term partnership between LCNF and Belize. The results of this visit were:

- 1) Formalized linkage between the Lewis and Clark National Forest and Forestry Department of Belize by signing a Memorandum of Understanding. Determined contributions of other Belizean cooperators (UCB, Programme for Belize, Ministry of Tourism and Recreation) to this Conservation Ambassadors pilot.
- 2) Established avenues for collaboration. Both the Lewis and Clark National Forest and the Forestry Department of Belize identified natural resource management situations (e.g. lack of Belizean natural resource training) that could be enhanced by collaboration. A prioritized list of joint ventures was developed and accompanied by a timeline.

Expenses

	<u>Forest Service</u>	<u>University of Montana</u>
Air Fare	\$2,400	\$3,200
Ground Transport	200	200
Lodging	500	500
Food	500	700
Salaries	4,900	6,100
Total	\$8,500	\$10,700

BELIZEAN FIREFIGHTING TRAINING

A LEWIS AND CLARK NATIONAL FOREST-FORESTRY DEPARTMENT OF BELIZE JOINT VENTURE

Project Abstract: The Lewis and Clark National Forest (LCNF) and the Forestry Department of Belize (FDB) have created a framework for a long-term partnership that is designed to enhance natural resource management on federal lands in the United States and Crown lands in Belize. The goal of this project is to develop and deliver FDB's first firefighter training course. The target audience for this course is FDB's Forest Guards, the supervisors of their firefighting crews. There are four components to this project: 1) Prepare needs assessment in Belize, 2) Expose FDB officials to US firefighting strategies, 3) Prepare and deliver short course in Belize, and 4) Evaluate training during Belize fire season. A description and budget for each of these phases is contained in this proposal.

Components 1 and 2 have been completed during fiscal year 92.

BACKGROUND

The Lewis and Clark National Forest (LCNF) and Forestry Department of Belize (FDB) have entered into a long-term partnership to enhance natural resource management on federal lands in the United States and Crown lands in Belize. This relationship was formalized by a Memorandum of Cooperation signed on December 23, 1991. In this agreement, LCNF and FDB commit to at least one joint venture annually.

Extensive discussions were held by LCNF and FDB officials this December to identify and prioritize cooperative projects. FDB's Chief Forest Officer identified a firefighter training course as one of his agency's most critical needs. Currently, FDB has no firefighter training and does not have the funds or human resources to develop such a course. Lack of a firefighting training module limits the methods and techniques that FDB can use to safely and efficiently suppress wildfires.

Many of Belize's Forest Reserves have severe fire seasons. The country's most intensively managed reserve, the 250,000 acre Mountain Pine Ridge, has frequent and often extensive fires between January and May. An 11,000 acre fire in 1991 caused substantial damage to commercially valuable Caribbean pine forests. Lightning and military exercises are the major ignition sources of wildfires on this reserve. Fires are also prevalent in pine forests on Belize's 2,000 square

mile Southern Coastal Plain. Hunting-based arson is the dominant cause of fires on reserves in this region.

Firefighting training is not only necessary to enhance FDB's fire suppression capabilities, but also to improve firefighter safety. Recent fatalities have driven home this issue.

Recent USAID and ODA grants will enable FDB to enhance its infrastructure. Projected improvements include firetowers and communication systems. According to FDB's Chief Forest Officer, a firefighting training course would be necessary for the agency to take full advantage of these new developments.

This project also complements human resource development items noted in the 1988 Tropical Forestry Action Plan. In fact, the TFAP stated that the "highest priority for external assistance would appear to be to provide education and training" (TFAP, p. 152).

SCOPE

Objectives

The objective of this project is to develop and deliver FDB's first firefighter training course. The target audience for this course are 25 Forest Guards, the field level supervisors of firefighters. Forest Guards are the most junior members of FDB's technical field staff. They have earned at least a primary school certificate and have received limited in-service training.

During the December meetings between FDB and LCNF, a 4-phase strategy for developing and delivering a firefighter training course was agreed upon: 1) Prepare needs assessment in Belize, 2) Expose FDB officials to firefighting strategies in Montana, 3) Prepare and deliver firefighter training in Belize, and 4) Evaluate training results in Belize.

Phase 1: Needs Assessment

A firefighter training course must be tailored to fit FDB's technological and institutional capabilities and meet the agency's most pressing on-the-ground needs. Therefore, a necessary first step was preparing a needs assessment in Belize.

We sent 2 LCNF fire training specialists to Belize during their fire season (April 5-19, 1991). The LCNF fire specialists and FDB officials identified and prioritized fire training needs. An 80-acre fire on the Mountain Pine Ridge Reserve provided a first-hand opportunity to evaluate fire suppression tactics, safety techniques, and fuel types. Tours of the Southern Coastal Plain, upland pine forests, and northern hardwood forests allowed a comprehensive assessment of FDB's fire management program. This assessment addressed crew organization, fire detection, fireline tactics, safety, initial attack capabilities, current training, fire equipment and communications.

The framework for the first fire training course was developed.

Phase 1 Budget

	<u>LCNF</u>	<u>FDB</u>	<u>TFP</u>
Air Transport			\$1600
Ground Transport		\$600	100
Lodging		500	100
Subsistence*			1500
Misc.			200
Salaries	\$6100	2400	
Total	\$6100	\$3500	\$3500

Total Cost: \$13,100

TFP Funds : \$3500

Phase 2: FDB Exposure to FS Fire Management

Two FDB officials were hosted by the LCNF in Montana from August 3-16. The objective of this visit was to provide FDB with a working knowledge of field-level FS fire management. This trip provided FDB an opportunity to determine which management practices were most appropriate for inclusion in the firefighting training course.

There were extensive discussions with LCNF and Northern Region fire personnel. The interagency dispatch center in Helena and the LCNF dispatch office were visited. Fire caches, lookouts, engines, fire crews, and procedures for dispatch were observed at LCNF District offices. Large wildfires that burned in 1988 were examined on the Rocky Mountain Front and in Glacier National Park. Rural cooperative firefighter organizations were visited. In Missoula, there were extensive discussion with researchers at the Intermountain Fire Science Laboratory. Intensive field trips and meetings with senior level Forest Service officials were also held at the Northern Region headquarters, Aerial Fire Depot, and Technology Development Center.

The course design, lesson outlines, practical exercises, and delivery strategies for the firefighter training course were agreed upon.

Phase 2 Budget

	<u>LCNF</u>	<u>FDB</u>	<u>TFP</u>
Air Transport			\$1600
Ground Transport	\$300	200	
Lodging			700
Subsistence			800
Misc.			100
Salaries	\$7600	3200	
Total	\$7900	\$3400	\$3200

Total Cost: \$14,500

TFP Funds : \$3200