

To: Heriberto Rodriguez, Project Liaison Officer  
 USAID Mission to Costa Rica

From: Timothy K. Cannon, Project Manger  
 Resources Development Associates 245 73

Date: July 10, 1978

Subject: Quarterly Progress Report, March 1 - June 30, 1978  
 1978. Contract for Remote Sensing Technical Support.  
 Project No. 515-0144, Contract No. AID/1a-C-1253

Sponsoring Agency: United States Agency for International Development

1.0 PERSONNEL

Level of Effort as of 6/16/78:

|          |       |          |
|----------|-------|----------|
| Craib    | 9.25  | Man-days |
| Cannon   | 88.00 | Man-days |
| Campbell | 26.75 | Man-days |
| Ellefsen | 24.00 | Man-days |
| Meyers   | 1.00  | Man-day  |
| Raburn   | 5.625 | Man-days |
| Sader    | 77.25 | Man-days |

Billed to date are: \$38,004.56 in salary, wages, and overhead,  
 5,487.11 for travel, and,  
 1,908.00 for allowances.

Other direct costs billed to date:

5,000.00 for pilot, navigation, and  
 photographic training;  
 10,764.85 participant training costs, and  
 8,055.22 other direct.

2.0 ACTIVITIES

During the current reporting period, the project design was finalized in preliminary planning by the resources team.

The majority of the aerial photography needed for the project was acquired by the IGN; however, the coverage of the mountain passes in the central corridor and of the Atlantic side around Limon was not fully obtained. The quality of the imagery that was acquired was generally excellent and at sufficient scales to allow easy interpretation and transfer of information. Recent imagery was acquired by Landsat 2; however, due to formatting problems within NASA and EROS, the Landsat coverage has not yet been received by RDA.

A sampling design that will provide ancillary data and accuracy estimates for the land resources cover typing is being finalized. Film calibration tests have been run and received for the film that was imaged in Costa Rica. Analysis of this data is in progress. Preparation of base maps and scribe coats for resources mapping has been initiated with the present plan being to map at 1:200,000 for the San Jose and Limon quad sheets, mapping six 1:50,000 quad sheets on the Pacific side of the corridor and parts of two more on the Atlantic side. It appears at this time that only partial coverage at 1:50,000 will be possible on the Atlantic side due to limited air-photo coverage. Mapping for these areas will be increased if more imagery is acquired in these areas. Chronopaque copies of the necessary maps have been ordered from IGN in Costa Rica. These maps will form the final base on which the thematic mapping will be overlaid.

A major portion of the team's time and effort to date was spent on the conduction of a 4-week training course for five Costa Rican professionals, commencing on May 29 and running through June 23. The training course consisted of a week of preliminary instruction at the EROS Applications Assistance Facility at the National Space Technology Laboratories in Bay St. Louis, Mississippi. The final three weeks of the course were conducted in San Jose, California, on the campus of San Jose State University in conjunction with San Jose State's Geography Department. Real-time training in digital data analysis

and Landsat image processing was provided at Electro-magnetic Systems Laboratories (ESL) facility in Sunnyvale, California.

While the first two weeks concentrated on teaching established techniques of remote sensing using aerial photographic and satellite data, the final two weeks concentrated on actual use and familiarization training with Costa Rican data that has been obtained and developed on this project. The students assisted the personnel of the project and the other instructors in formalization of land-cover/land-use classification systems, usefull at different levels of intensity and with different sensor formats for the Costa Rican project. The input provided by these students, who are professionals in their own fields in Costa Rica, was invaluable. The classification systems were then tested on IGN aerial photography and on 1975 Landsat satellite imagery. Imagery was taken by the Costa Rican Students returning to Costa Rica with imagery samples for use in their own testing of the system and inspection of ground sites to verify classification.

In addition to classroom experience, a variety of exposures to other aspects of the field of remote sensing and resource assessment and management were provided. These included trips to forest nurseries, the AMES Research Center, where U-2 (high altitude) imagery, conventional aircraft imagery, and satellite processing were viewed, and International Imaging Systems labs in Sunnyvale. The training course also coincided with other functions that were attended, such as the Conference of Latin American Geographers, and a Graphics Display Conference.

Toward the end of the training course, the contractor's facilities were visited by Gale Rozell, of the Costa Rican AID Mission. A very fruitful discussion with Dr. Rozell resulted in the clarification of several thrusts of work. At that time, Dr. Rozell suggested that our team examine the problem of integrating area frame sampling data into our resource data system, as well as aiding the area frame sampling work through the provision of our services and imagery.

### 3.0 PROBLEMS ENCOUNTERED DURING WORK PERIOD

No major problems were encountered during this work period, other than the failure to be able to acquire the Landsat data from NASA and EROS as early as we had hoped, and the lack of imagery over the Atlantic side of Costa Rica. Both of these problems may be resolved in the next few months through additional image acquisition.

### 4.0 ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

During the next three months, it is anticipated that ground sampling will be initiated beginning with a trip to Costa Rica, by the RDA team on July 21. At this time, team members will join with Costa Rican counterparts in verification of ground data. At the same time, the film calibration report should be completed along with continuing efforts to acquire the Landsat data from EROS that has been imaged. Air-photo acquisition probably will be minimal during this season of the year; however, it is hoped that the IGN will continue to try to acquire whatever aerial photography is possible during this time. The RDA team plans to begin the monitoring system design as well as the final photographic analysis for the report.

A mid-project presentation in Costa Rica has been tentatively planned for the middle of September, near the end of the next progress report period.

SIGNED: TIMOTHY K CANNON,  
Project Manager

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