

9311166-②
 PD-AG-397-B1

9311166-301-6980414

Unclassified
 CLASSIFICATION

App 5N, Ch 5, HB 3
 (TM 3:26) 8-3-78

PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE Regional Remote Sensing (Eastern Africa)			2. PROJECT NUMBER 698-0414 Formerly project 931-1156 (ii)	3. MISSION/AID/W OFFICE REDSO/EA + AFR/RA
6. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit w/ Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 698-79-02	
A. First PRC-AG or Equivalent FY 77	B. Final Obligation Expected FY 81	C. Final Input Delivery FY 82	5. ESTIMATED PROJECT FUNDING A. Total \$ B. U.S. \$ 3,430	7. PERIOD COVERED BY EVALUATION From (month/yr.) September 1977 To (month/yr.) December 1978 Date of Evaluation 24/10/78

3. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Issue periodic (monthly) progress reports to REDSO Director and AFR/RA project officer.	Merrill Conitz	Starting Jan. 1979
2. Send copies of/existing and future PIO/C's, PSC's, and trip reports to AFR/RA.	Merrill Conitz	Feb. 1979
3. Begin training at Remote Sensing Facility.	Merrill Conitz	February 1979
4. Issue remaining PIO/C's.	Merrill Conitz	March 1979
5. Recruit photo-laboratory technician's replacement.	REDSO/EA	April 1979
6. Conclude interim arrangement with suitable local photo laboratory for temporary staffing and maintenance of Facility's photo laboratory, training, and photo processing.	REDSO/EA	Feb. 1979
7. Expedite procurement and delivery remaining equipment.	REDSO/EA in collaboration with AFR/RA	Sept. 1979
8. Select counterparts for AID contract technicians (Falconner and Hart)	Merrill Conitz	March 1979
9. Encourage Mapping Centre to attract wider African and donor participation, including UNDP and UNEP.	Merrill Conitz	
10. Ensure that copies of all relevant correspondence and documentation are sent to AFR/RA.	Merrill Conitz	
11. Conduct in-depth project evaluation one year hence.	REDSO/EA in collaboration with AFR/RA	Dec. 1979
(ii) REDSO has submitted revised PP to AID/W. Review will be after receipt of this evaluation.		
(iii) FY 1980 CP envisages LOP through FY 1982.		
(iv) Revise ProAg to provide FY 1979 AID funding and to secure more office space and alterations funding from Regional Mapping Centre, to permit completion of photo laboratory installation.		

8. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT		
<input checked="" type="checkbox"/> Project Paper (ii)	<input type="checkbox"/> Implementation Plan sq. CPI Network	<input type="checkbox"/> Other (Specify)	A. <input type="checkbox"/> Continue Project Without Change		
<input checked="" type="checkbox"/> Financial Plan (iii)	<input type="checkbox"/> PIO/T		B. <input type="checkbox"/> Change Project Design and/or		
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input checked="" type="checkbox"/> Change Implementation Plan		
<input checked="" type="checkbox"/> Project Agreement (iv)	<input type="checkbox"/> PIO/P		C. <input type="checkbox"/> Discontinue Project		

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Names and Titles) Merrill Conitz, Project Officer Brian Wickland, AID/AFR/RA Charles Withington, AID/DC/SM	12. Mission, AID/W Office Director Approval Signature: <i>Louis A. Cohen</i> Typed Name: LOUIS A. COHEN
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SUMMARY:

The purpose of the Remote Sensing Facility project (931-1166) is to make satellite data and related resource analysis techniques available to African resource managers, primarily through training. The project began with the arrival of project director Conitz in September 1977. Delays in obtaining personnel and equipment, primarily due to complex administrative procedures in Washington, have put off the start of training until early 1979. Faculty for training arrived in August 1978. Arrival of equipment has been delayed more than a year. The equipment that has been received has come primarily from USG surplus stocks. A photographic processing capability for black and white pictures is available now, but equipment needed for color processing will not arrive for another year, necessitating contracting for these services.

Because the one year delay has set back end of project status until FY 1981, at least an additional year of operational funding will be needed. Other uncertainties in achieving EOPS include the question of the Regional Mapping Centre, the host institution being able to achieve the member-country and external donor country support needed to function properly.

Suggestions for improved efficiency in running the project include closer liaison between REDSO and AFR/RA, contracting in the field by REDSO whenever possible, and periodic (monthly) progress reports to AFR/RA.

EVALUATION METHODOLOGY:

The methods used in this first project evaluation include: (1) examination of project design in relation to the project paper; (2) examination of all relevant files at REDSO/EA; (3) interviews with those most closely associated with the Regional Remote Sensing Facility, both African and expatriate; and (4) development of solutions to problems identified and discussed during this evaluation. Those associated with the project include: Merrill Conitz, the Facility's Director as well as REDSO Project Manager (and hereafter referred to as the Project Manager); Peter Anyumba, Director of the Regional Mapping Centre (to which the Facility is attached); Allan Falconner and Thomas Hart (AID contract remote sensing staff); Ron Senykoff (REDSO PSC remote sensing/photographic laboratory specialist); and members of the REDSO/EA staff who have been most involved with the operation of the Facility - Louis Cohen, Don Reilly, George Rublee, and Steve Norton. Included on the project evaluation team are Don Reilly (REDSO/EA), Clarks F. Withington (remote sensing specialist, AID/DS/ST), and Brian Wickland (project officer, AID/AFR/RA).

EXTERNAL FACTORS:

The extent of African governments' financial commitment to regional cooperation is open to doubt, and this is, unfortunately, exemplified by the lack of member country support for the Regional Mapping Centre, an inter-governmental institution based in Nairobi to which the Regional Remote Sensing Facility is attached. Notwithstanding its five-state membership, Kenya has provided most of the financial support until recently, although Uganda is now reported to be making financial contributions and the prospect is in view of Tanzania paying its arrears. One member state - Malawi - has in recent months not bothered to send representatives to the periodic meetings of the Regional Mapping Centre's Board of Governors and Technical Advisory Committee (which meet twice yearly). Although the Centre's Board of Governors has called for expanding membership, the latter has remained unchanged since the Centre was created in 1975. It is understood that this is more an adverse reflection on the direction and management of the Centre itself than on the will of the member states. While the Remote Sensing Facility's affiliation with the Centre has provided the boon of generous accommodation and some administrative support, this may also carry with it the disadvantage of 'guilt by association' with an institution which does not currently enjoy the full confidence and support of its African membership. This may also adversely affect the willingness of other donors to support the Remote Sensing Facility's program, just as it has already led to interested donors withholding material support to the Regional Mapping Centre. However, based on the courses and seminars organized by

other organizations, there has been no unwillingness on the part of African states to detach students for remote sensing training.

INPUTS:

There have been significant delays in obtaining both staff and U.S. produced equipment for the Facility; so much so that implementation would appear to be at least one year behind schedule. Delays in meeting staffing needs are mainly attributable to procedural considerations in Washington, involving AID/W and the Small Business Administration. These resulted in an insistence on small business 'set-aside' and a second review of responses to the RFP (since the first response by nine small businesses was considered technically inadequate). Further delay ensued from one firm's contesting the findings of the second technical review panel, and two of the three contract personnel envisaged in the PIO/T only arrived in Nairobi in August, 1978 - nearly one year after the Project Manager's arrival at post. The project has not been without its share of bad luck in the efforts by REDSO/EA to engage other technical staff under Personal Services Contracts (hereafter PSCs). A first recruit (Jimmie Weber left the project in December 1977, and a successor (Ron Senykoff) did not arrive until September 1978. Owing to family considerations the latter will be obliged to leave the project in mid-December 1978.)

Equipment procurement and shipment also seem to have been unreasonably delayed, partially attributed to late issuance of some PIO/Cs and partly to poor performance by the Afro-American Purchasing Centre (AAPC). The Facility's Project Manager is to be commended for his initiative in obtaining surplus photographic laboratory equipment from a terminated AID project in Afghanistan and from the U.S. Census Bureau in Washington. Not all the surplus equipment under order has yet arrived (with significant delays incurred by AAPC in effecting Stateside procurement and shipments, and with some questions raised as to the condition of Stateside surplus equipment), but on the basis of deliveries to date his initiative has led to acquisition of many thousand dollars' worth of useful equipment and supplies at nominal cost. At the time of this review (December 1978) an estimated 50 per cent of equipment needs had arrived. In this connection it should be noted that a TDY photographic laboratory technician on PASA to AID from the Defense Mapping Agency briefly visited the project in October 1978, and has since made some useful suggestions as to equipment specifications and laboratory lay-out. After his return to the States in November, he undertook follow-up enquiries with agencies holding surplus laboratory equipment destined for the project. On the basis of information given to him over the telephone, he discovered that some

surplus items had been switched and that some were in dubious condition. Perhaps more significantly, his enquiries revealed serious delays on the part of AAPC in contacting supplies and arranging for shipment to the project site.

Thanks to the Kenya Government's financial support of the Regional Mapping Centre, host organization input has generally been adequate. As envisaged in the Project Agreement, the Regional Mapping Centre has contributed a considerable amount of high quality office and laboratory space at its premises in the Nairobi Industrial Area (about five miles from the REDSO office). Mapping Centre funds have covered some alterations to the premises, and its staff have provided a measure of administrative support. The REDSO Project Manager and his technicians are installed in these premises, and project funds have been used to engage African staff for the Facility (a photo-laboratory trainee, and administrative assistant, a driver, and two secretaries), and to effect local procurement of office furniture and a Range-Rover four-wheel-drive vehicle. It is hoped that the Mapping Centre's Director can be persuaded to provide space and funding necessary for accommodation of the photo laboratory's colour operations, and discussions between him and the Project Manager are currently under way.

OUTPUTS:

In the fourteen-month period since the Project Manager's arrival, no training courses have been conducted at the Facility. Plans for convening the first course - initially scheduled for January 1979 - have been postponed. Since the principal project activity is training of Africans in the utilization of satellite data and related resource technologies, it is apparent that the training program is far behind schedule. While significant delays in arrival of U.S. technicians and equipment are major mitigating factors (the REDSO Director doubted whether any training could have been undertaken at the Facility during the first year of the project), the evaluation team felt that at least a training program could have been developed and some training undertaken by the time of the present review. Basic training in remote sensing theory and application did not require prior receipt of all AID-funded project input, and in the interim period greater recourse might possibly have been made to qualified training staff at the University of Nairobi and remote sensing-related photographic equipment at Kenya Government installations (although there were some doubts expressed as to the condition of such equipment).

In discussing this observation with the Project Manager, the latter noted that he had participated (as a lecturer or panelist) in five remote sensing-related training courses for Africans since January 1978. These included an International Development Research Centre (IDRC) workshop, workshops on automated cartography and

gravity, and a National Council of Science and Technology seminar - all held in Nairobi. Plans have also been made for assisting in a UNEP environmental training course later in December 1978. The Project Manager questioned the utility of organizing low level training courses of little practical value (in the absence of supporting U.S. technicians and sophisticated photo laboratory equipment), particularly when the above-mentioned seminars and workshops had reflected a high level of technical competence. To have organized Remote Sensing Facility courses without adequate technical support would have given rise to false expectations on the part of trainees, he felt, and harm to the Facility's prestige. Training courses offered in Nairobi would have to aim for a high level of achievement, and he felt that it was vital for the Facility's laboratory to be on a fully operational footing (to produce imagery, colour composites, etc.) before training could be meaningfully undertaken.

In retrospect, however, he agreed with the evaluation team that the Facility might have offered introductory courses in other member-States not having Nairobi's sophisticated training, resources, or otherwise complemented the highly technical Nairobi-convened seminars and workshops by offering something less technical for African managers and planners. The Project Manager had earlier had teaching experience at the University of Nairobi, and could be supported by TDY U.S. technicians and/or locally-recruited African postgraduates and faculty staff pending arrival of the U.S. long-term contract technicians. A PASA with the U.S. Geological Survey had been signed in April 1978, providing support services for training valued at 75,000 dollars.

To highlight the project's failure to initiate training activities in as timely a fashion as might have been possible is not intended to undervalue the Project Manager's personal contribution to the workshops and seminars organized by the development-related institutions mentioned above. Nor is this intended to undervalue his pursuit of other activities authorized in the Project Paper, including technical services rendered to Botswana, Lesotho, Swaziland, and Tanzania (pursuant to government requests received by the Regional Mapping Centre/Remote Sensing Facility), and drafting of a remote sensing project PID for USAID/Bujumbura. Particularly when delays in contracting and procurement were being experienced, it could be argued that pursuit of these secondary project goals was probably the best that could have been expected. The evaluation team nevertheless concluded that - particularly in recent months more effort should have been devoted to the primary training objective. In future, consideration ought to be given to using the faculty and students of the University of Nairobi for this purpose.

After recruitment under PSC of an exceptionally well-qualified remote sensing specialist/photo laboratory technician (Ron Senykoff) in September 1978, noteworthy strides were made in establishment of the photo laboratory and stocking of the Centre's reference library. The USG surplus equipment was by that time beginning to arrive and was promptly refurbished and made ready for operation; additional equipment was placed on order; structural alterations to the premises were undertaken to transform bank building offices into a photo laboratory capable of conducting black-and-white operations; and an African counterpart for the photo engineer was selected and given initial on-job training. The need for additional space on the ground floor of the Centre's premises, and the need for installing water heating and air filtration/conditioning systems constitute overriding constraints to colour processing. As earlier noted, discussions are currently under way with the Centre's Director so that the requisite space, alteration approvals, and some of the funding might be made available by the Centre for this purpose. It might also be appropriate to address these needs in the forthcoming revised Project Agreement (covering FY 79 AID funding) between REDSO and the Regional Mapping Centre.

An even more limiting factor to placing the photo laboratory on a fully operational footing is the imminent departure of Mr. Senykoff, the photo engineer (for family reasons). Addressing himself to this problem, the Project Manager has proposed that REDSO contract with a local photo laboratory to provide interim staffing for the Facility's laboratory, maintenance of its equipment, assistance in training, and photo processing services. The evaluation panel endorses this proposal, which would require a code 935

waiver, on the understanding that this would be an interim measure, pending recruitment of qualified photo laboratory personnel for the Facility. A justification for such a waiver will be cabled to AID/W for prompt consideration with the project paper.

PURPOSE:

The purpose of this project is to make satellite data and related resource technologies available to African resource managers and development planners, by training Africans in the utilization of these technologies. Expressed in broader terms, this project would transfer remote sensing technology to Eastern and Southern Africa. The End of Project Status (EOPS) would find the Facility staffed by trained Africans and fully self-sustaining through contributions from African member states and revenue from services rendered. There would be a cadre of resource managers in each of the member states trained in the uses of remote sensing in collecting and analysing resource data derived from satellite and aircraft imagery, with resource planning well under way through the use of these techniques.

The Facility would be fully operational in terms of training, data storage and retrieval, and data-user services. In terms of these objectives, it is evident that, until training is well under way, the purpose of this project will be in no way near attainment. The vital role of training is evident, and in view of the previously mentioned delays, the evaluation panel estimates that the project is at least one year behind schedule. The project is only funded through FY 1978 (as DS/ST project 931-1166), with commitments subject to availability of funds through FY 1979 (as AFR/RA project 698-0414). Full End of Project Status will not be obtained until FY 1982 at the earliest, and then only if further project funding of at least two years (FY 1980 and FY 1981) can be obtained. REDSO has submitted a revised Project Paper to AID/Washington where it will be reviewed after receipt of this evaluation.

An extra-project factor which would enhance the effectiveness of this project would be acquisition of a LANDSAT data receiving capability in East Africa. Kenya has announced plans to construct a permanent receiving station, and it is assumed that the Remote Sensing Facility would become an integral part of any such installation.

GOAL:

In its broadest terms the goal envisaged for project 931-1166 was to improve resource exploration and management procedures through assistance in acquisition and use of remote sensing technology and earth resource data. The indicator cited in the Project Paper was utilization of remote sensing technology by (African) resource agencies, as indicated by establishment of permanent organizations for use of remote sensing, reports of remote sensing-related projects in LDCs, and the quantity of LANDSAT data ordered. This is a long-term goal, and little in the first fourteen months of the project under review suggests that attainment is significantly under way in Eastern and Southern Africa.

Nonetheless, an encouraging sign is the Kenya Government's declaration at the African Remote Sensing Council plenipotentiary meeting (Ouagadougou, July 1978) of its intention to construct a permanent receiving station. It is understood that the Government has allocated five million dollars for this purpose and that - if construction were undertaken - the Regional Remote Sensing Facility would be relocated at the permanent station. However this is still subject to the Kenya Government's or external donor's coming forward with an estimated additional several million dollars to meet total construction and equipment costs, and a positive final decision on construction is unlikely to be taken in the near future.

The future of the Regional Mapping Centre appears uncertain, owing partly to the Kenya Government's concern over lack of other

member country participation, and partly to concern on the part of member countries over the inertia manifested in the direction and management of the Centre itself. Should the Kenya Government choose not to renew the Mapping Centre's lease on its current premises (to lapse in two years' time), it is conceivable that the Remote Sensing Facility might have to be re-established as a separate legal entity, in order to avoid foundering in the wake of the Mapping Centre. In such an event, substantial additional donor funding would be required to meet the cost of premises and staffing.

While it has earlier been suggested that African governmental appreciation of remote sensing technology as an effective tool of the development process may have been over-estimated, the best means of attracting the imagination and support of African resource managers and planners would still seem to be the Facility's performance as trainer and supplier of meaningful technical services. Recruitment and procurement delays have caused the Project Manager to give greater weight to the latter at the expense of the training goal, but now that the availability of temporary and long-term technicians seems more assured the balance should be restored and priority returned to establishing and implementing a training program for Africans.

BENEFICIARIES:

In the short run, resource personnel of the five (current) member countries plus personnel of other African countries having access to the Facility's training and advisory services will benefit from improved data collection and analysis techniques. The ultimate beneficiaries will include the large majority of Africans within the region whose livelihood derives from agriculture and the exploitation of other natural resources.

UNPLANNED EFFECTS ON THE PROJECT:

Failure of the Regional Mapping Centre to attract widespread support from its membership has adversely affected the willingness of other donor countries to implement their assistance pledges. For example, the Swiss pledge of photogrammetry equipment to the Centre (which would have complemented the Facility's photographic equipment, has been "put on ice." Other external donors have expressed similar reservations, but these are interpreted by REDSO as expressing lack of confidence in the Centre's present direction rather than in the concept of the Regional Mapping Centre itself.

The project evaluation team feels that multi-donor participation should be encouraged and expanded, and suggests that the periodic

meetings of the Centre's Technical Advisory Panel (which also discusses the Remote Sensing Facility), be opened to a wider range of donor and potential donor participation. This would include representation of a wider spectrum of the UN system than merely ECA (whose representative chairs the meetings). At a meeting with AID/W evaluation team members on 1 December 1978, Mr. Robert Kitchen, the UNDP Resident Representative, agreed to send a UNDP representative to such meetings, "if invited." The potential central role of UNEP in UN remote sensing activities should be exploited to the fullest extent possible, in the hope that UNEP and UNDP participation might lead to technical and material assistance. In view of their overlapping interests as well as their close proximity to each other in Nairobi, it is conceivable that the Regional Mapping Centre/Remote Sensing Facility could serve as one of UNEP's executing agencies within the East/Southern African context of UNEP's global interest in remote sensing activities.

LESSONS LEARNED:

In retrospect, the project would be much further along if training at the Facility had actually started, or at least plans for training had been more developed. While framers of the project may have expected results too early, and the lag time for recruitment and procurement were underestimated, training plans could have been developed to permit commencement of training activities at least by the time of this evaluation.

The need for keeping AID/W fully informed as to project developments and difficulties cannot be overstated. Copies of all cables, correspondence, trip reports, PIO/Cs, PIO/Ts, PSCs, etc. should be sent to the appropriate AID/W project officer AFR/RA in timely fashion. To systematize reporting, and in order to highlight difficulties and possible need for AID/W remedial action, the evaluation team endorses the REDSO Director's instruction of October 1978 that a monthly progress report on the Remote Sensing Facility be submitted to him and AFR/RA henceforth. Based on the experience of the Regional Remote Sensing Centre in Ouagadougou, this should enable AID/W to take whatever follow-up action appears necessary in relation to Stateside contractors, procurement agencies, suppliers, etc. As far as contracting is concerned, the experience of this project suggests that greater efficiency can be attained through contracting in the field rather than in Washington.

In a more general sense, project designers should note from the experience of this project the significantly long time required to obtain personnel and equipment. Either more time must be allowed for implementation, or more direct and forceful involvement should be required on the part of AID/W project officers to assist in identifying 'bottlenecks' and surmounting procedural and possibly operational obstacles. Participation of AID/W at the Mapping Centre/Facility's

Technical Advisory meetings should be encouraged, to maintain contact with the problems of the project. Although not of immediate consequence for this project, the uncertainties of host and other member countries' involvement should be recognized, and contingency plans made.

SPECIAL COMMENTS

A primer for similar projects in other countries might include the following advice. Begin plans for training as soon as possible, so that the first course can take place as soon as sufficient personnel and equipment are in place. The first few courses may appear to be failures in the eyes of expatriate project personnel, but valuable experience and insight will be gained. When plans for the first major training project are completed, an announcement should be forwarded to each appropriate ministry, university, and AID mission. A three-month lead time should be allowed for each course, to permit acquisition of data tailored to the needs of each registered student. Training plans should include selection of one or two test sites on the basis of (1) their diverse geology, hydrology, and geomorphology, (2) easy access to the class-room, and (3) other resource characteristics relevant to the students' background and vocational needs (including land use variety, land capability characteristics, and rangeland, agricultural, and forestry features which can be studied from space). Local instructors should be obtained who know the local geology and other natural, agricultural and physical features of the area. These on-site lectures should be organized around LANDSAT imagery.