

Institut Pertanian Bogor * University of Wisconsin

GRADUATE EDUCATION PROJECT



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KIEFER

IPB/UW GRADUATE EDUCATION PROGRAM

REMOTE SENSING PROJECT

by

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ACTIVITIES

My activities during my visit were many and varied, and included:

- * meetings with various IPB staff interested in remote sensing;
- * attendance at a two-day Curriculum Workshop for Remote Sensing at which I presented a paper dealing with Digital Image Processing using the Apple II microcomputer;
- * working with the joint IPB-UW team to develop a report on the Curriculum Workshop and to develop plans for the future of the project;
- * visiting BAKOSURTANAL, the LAPAN Landsat ground receiving station, and the Indonesian Department of Public Works (Jakarta);
- * taking a two-day field trip to the Citarum watershed (the watershed that will be the site of future remote sensing research projects); and
- * demonstrating the use of the Apple II microcomputer for digital image processing.

ASSESSMENT OF NEED FOR REMOTE SENSING
INSTRUCTION AND RESEARCH PROGRAM AT IPB

The need for a program of instruction and research in remote sensing at IPB was expressed by speakers at the Curriculum Workshop from BAKOSURTANAL, LAPAN, Public Works, and Statistics. In addition to hearing these speakers, I personally visited BAKOSURTANAL, LAPAN, and Public Works. From these, I conclude that there is a need for instruction and research in remote sensing, in general, and digital image processing, specifically, at the IPB to support the missions of these Federal agencies. As a specific example: BAKOSURTANAL has just installed a large digital image processing facility. It is a production-oriented facility and BAKOSURTANAL doesn't have the time to pursue many research topics of great interest. Prof. Kardono of BAKOSURTANAL expressed a strong need for instruction in remote sensing and digital image processing to support BAKOSURTANAL's new digital image processing facility and expressed his desire to have IPB assist in both instructional and research aspects of remote sensing and digital image processing.

OVERVIEW OF IPB-UW REMOTE SENSING PROJECT

There are four interrelated components of the joint remote sensing project: curriculum development, personnel exchange, development of a remote sensing image interpretation laboratory, and research projects.

Most of the information related to these items is detailed in the, "Report on Workshops in Remote Sensing Curriculum Development at IPB". Details of the digital image processing system to be installed at IPB during 1984 can be found in the paper, "Proposed Image Processing Lab Institut Pertanian Bogor (IPB) and the University of Wisconsin" by Ahearn, Rambe, and Raimadoya. Although a detailed plan for curriculum development has been developed, a plan still needs to be developed for the actual graduate degree program in remote sensing.

Potential research projects were not discussed in detail. However, the selection of the Citarum watershed as the site of future cooperative remote sensing research was confirmed.

SUMMARY - CONCLUSIONS - RECOMMENDATIONS

Based on my involvement with the project to date, I have the following conclusions and recommendations:

- (1) A need exists for a program of remote sensing instruction and research at IPB to help fulfill national objectives for remote sensing training and research as expressed by various federal agencies in Indonesia. The emphasis at IPB should be agricultural applications such as: natural resource mapping, soil mapping, crop studies, forestry studies, land use suitability evaluation, environmental science, etc.

- (2) There is a large enough group of interested faculty at IPB to have a successful graduate program of instruction and research in remote sensing.
- (3) Although some expertise in remote sensing exists at IPB, there is a need for faculty training with the goal of being able to teach specific remote sensing courses. The mechanisms for accomplishing this would be principally faculty visits from IPB to the University of Wisconsin-Madison (sometimes elsewhere) with a typical duration of 9-12 months.
- (4) A realistic plan for curriculum development has been prepared (Workshop Report). Plans still need to be prepared for the development of the actual graduate degree program in remote sensing. I recommend the establishment of an interdisciplinary program that can draw on faculty from several related departments. This would be along the lines of the University of Wisconsin's Environmental Monitoring Program, an interdisciplinary program in environmental remote sensing.
- (5) There is a need for remote sensing laboratory equipment to support the instructional and research activities in remote sensing. This should include equipment for digital image processing, human (visual) image interpretation, and photogrammetric measurements. Sufficient money has been provided in 1983 to set up a complete image processing facility. Beginning in 1984, the purchase of visual interpretation and photogrammetric equipment should begin. Some funds should also be provided each year, beginning in 1985, for updating the equipment in the digital image processing laboratory.

- (6) One faculty person from both IPB and UW should be designated as the contact person between the respective remote sensing programs. At the University of Wisconsin, this should be Dr. Ralph W. Kiefer. At IPB this should be Dr. U. S. Wiradisastra.

Submitted by:

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