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**ADMINISTRATIVE MANAGEMENT REVIEW**  
**OF THE**  
**SOIL MANAGEMENT COLLABORATIVE RESEARCH SUPPORT PROGRAM**  
**October 17-21, 1988**

## FOREWORD

The Administrative Management Review of the TropSoils CRSP has been revealing, reassuring and gratifying. The unheralded, enormous potential contributions of the participating universities and their host country collaborators came to the fore with startling impact. Results to date indicate that CRSP-produced knowledge and technologies, current and prospective, offer the potential for changing the course of development in the high-rainfall tropics, improving the odds in the semi-arid tropics, and producing inestimable conservation and environmental benefits. The performance of the CRSP is reassuring, gratifying confirmation of the CRSP concept.

The organization of the report responds to the Statement of Work provided to guide the review. Responses to overlapping, related questions insures a certain amount of repetition, but repetition has redeeming features. Unavoidably, the reviewers got involved in program matters because of the inextricable relationship between administrative management and program.

The Review Team is highly appreciative of the special assistance given by Dr. Charles B. McCants, Director of the Management Entity; program coordinators, Drs. Goro Uehara and Pedro Sanchez; and Dr. John Malcolm, A.I.D. Project Officer, in arranging the review. The Team thanks all of the persons who contributed to the review.

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## ABBREVIATIONS

Abbreviation	Name	Country
AARD	Agency for Agricultural Research and Development	Indonesia
A.I.D./AID	Agency for International Development	USA
BIFAD	Board for International Food and Agricultural Development	USA
BOD	Board of Directors, TropSoils	
CIAT	Centro Internacional de Agricultura Tropical	Colombia
CPAC	Centro de Pesquisa Agropecuaria dos Cerrados	Brazil
CSR	Center for Soils Research	Indonesia
CU	Cornell University	USA
EEP	External Evaluation Panel	
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuaria	Brazil
IADS	Int'l Agr Development Service	USA
IBSRAM	International Board for Soil Research and Management	Thailand
ICARDA	International Center for Agricultural Research in Dry Areas	Syria
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics	India
IER	Institut de Economie Rurale	Mali
IFDC	International Fertilizer Development Center	USA
INIAA	Instituto Nacional de Investigacion Agraria y Agroindustrial	Peru
INRAN	Institut National de Recherches Agronomiques du Niger	Niger
INTSORMIL	Collaborative Research Support Program on Sorghum and Millet	USA
NCRP	Niger Cereals Research Project	Niger
NCSU	North Carolina State University	USA
PC	Program Coordinator TropSoils	USA
PI	Program Investigator TropSoils	
TAES	Texas Agricultural Experiment Station	USA
TC	Technical Committee TropSoils	USA
TropSoils	Soil Management Collaborative Research Support Program	USA
UH	University of Hawaii	USA
USAID	United States Agency for International Development	USA

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ADMINISTRATIVE MANAGEMENT REVIEW  
OF THE  
SOIL MANAGEMENT COLLABORATIVE RESEARCH SUPPORT PROGRAM

I. EXECUTIVE SUMMARY

The performance of the Management Entity (NCSU) and participating universities (CU, UH, TAMU and NCSU) in conducting the Soil Management CRSP is outstanding, as measured by the CRSP's status and achievements. The CRSP is being conducted in accordance with the overall plan and budget set forth in the Grant Document. Its organization and management follows the BIFAD/AID CRSP Guidelines.

In operation for seven years, the CRSP has established and is following a set of objectives, Global Plan, program strategy, framework for governance and day-to-day operational guidelines. The CRSP is organized and being managed in an efficient manner highly-supportive of its research programs. The CRSP is in compliance with fiscal procedures and reporting as required by the Grant Document.

Once considered by many as the candidate among CRSP's with least possibilities to show success, the Soil Management CRSP has produced knowledge and technologies with enormously beneficial potentials. In the Amazon Basin, the CRSP has developed soil management-cropping systems which could have dramatic effects in reducing slash and burn destruction of tropical forests and associated carbon dioxide pollution of the atmosphere through introduction of stable, continuous field cropping systems (1). Such systems, based on understanding and managing tropic soils for sustained use, are now spreading in the Amazon and providing the bases for new settlements and expanded commerce. The low cost, highly-practical, trash mulching system developed and introduced by the CRSP in Niger has become a cornerstone of reforestation - desert control efforts by that nation. These and other current and prospective socio-economic benefits indicate that the CRSP is a productive, cost-effective investment in development.

Through its participating universities and host country collaborators, the Soil Management CRSP is positioned and ready to help step-up the pace and intensity of development in the tropics, given the availability of resources for

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(1)

The Soil Management CRSP's successes have been based on and due, in large measure, to extension and application of results of long-term A.I.D.-supported soil research projects in South America and elsewhere.

## I. EXECUTIVE SUMMARY (Continued)

refining the technologies and conducting adaptive research in similar agroecological zones, but with different economic and political settings. Through the CRSP and past and current programs, A.I.D.'s long-term investments in tropic soil research have produced technologies that offer potentials for paying handsome dividends. There is need for the CRSP to more clearly articulate its objectives and goals and relate its research to the global problems of destruction of forests by slash and burn agriculture, to management of natural resources, and to sustainable agriculture.

Notwithstanding its impressive status and potentials, the CRSP is not without shortcomings in research and administrative management. These include the lack of complementary/supplementary soci-economic research, slow pace and intensity of research at host country sites, weak unity and cohesion between and among zonal research programs, limited inputs into building/strengthening CRSP counterpart institutions, and restricted participation and/or non-participation by the CRSP's Board of Directors and Technical Committee in setting research priorities and allocating resources. Several of the shortcomings are due primarily to funding limitations.

The CRSP and A.I.D. need to seek USAID mission and other funding sources. Given the magnitude of the problems and the potentials offered by CRSP technologies to date, A.I.D. would be warranted to seek inclusion of this CRSP as the nucleus of a major environmental, natural resource management, sustainable agricultural effort as a basis for securing significant amounts of additional Congressional support.

The administrative management review was made by a review team made up three persons selected by A.I.D. and BIFAD. The review was conducted in accordance with a scope of work provided by the A.I.D. It involved site visits to the campuses of two of the four universities participating in the CRSP -- the University of Hawaii and North Carolina State University. North Carolina State University has a dual role: it is the Management Entity for the CRSP and it is also a participating university.

The report which follows presents the Review Team's findings, discusses the findings and concludes with a set of recommendations, including a strong statement for additional financial resources.

## II. PROJECT IDENTIFICATION

PROJECT TITLE: SOIL MANAGEMENT CRSP  
PROJECT NUMBER: 931-1311  
NAME OF GRANTEE: NORTH CAROLINA STATE UNIVERSITY  
GRANT NUMBER: DAN-1311-G-SS-6018-00  
DIRECTOR OF THE  
MANAGEMENT ENTITY: DR. CHARLES B. MCCANTS  
REVIEW DATES: OCTOBER 17-21, 1988  
TYPE OF REVIEW: ADMINISTRATIVE MANAGEMENT REVIEW  
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### III. PURPOSE, BASIS AND PROCEDURE

#### A. Purpose

To assure that the administrative and management performances of the Management Entity and operating elements of the Soil Management CRSP are appropriate for the achievement of the CRSP's objectives in accordance with the overall plan and budget contained in the Grant Document.

#### B. Basis: Grant Document and Scope of Work

A.I.D. Grant No. DAN-1311-G-SS-6018-00 provides funds to support North Carolina State University as the Management Entity (ME) and Fiscal Agent for the Soil Management CRSP. As the grantee, North Carolina State University is responsible for the performance of the research of the CRSP, is expected to conduct the operations of the CRSP in accordance with the provisions of the Grant Document, and is accountable for the use of grant funds. Along with the Scope of Work (Appendix 1) and the BIFAD/A.I.D. CRSP Guidelines, the Grant document provides the basis and guide for this review and its findings.

#### C. Procedure

The review consisted of discussions (before, during and after) with the Director of the ME and the A.I.D. Project Manager, study of pertinent CRSP program documents (Appendix 2), a site visit to a participating university (University of Hawaii) and a site visit to North Carolina State University, the Management Entity and a participating university in the research program. (Appendix 3, Itinerary and Schedule of Appointments).

## IV. FINDINGS

## A. CRSP Objectives and Global Plan

## 1. General

The general objective of this CRSP is to develop and adopt improved soil management technology that is agronomically, ecologically and economically sound for developing nations in the tropics.

## 2. Specific objective

The specific objective is to enable the Grantee to organize and mobilize financial and human resources necessary for mounting a major, multi-institutional, U.S.-LDC collaborative effort of research and training related to soil management.

## 3. Global Plan

a. To conduct user-oriented research based on established principles of soil science, along with principle-oriented research as needed, to overcome soil constraints to sustained agriculture, and to enhance the natural resource base for developing nations in the tropics.

b. To conduct these studies in collaboration with partner nations and international research centers so as to make the best use of available knowledge and resources, to ensure that the research is adapted to both user and setting, and to link people and institutions into active soil-management networks.

c. To deploy the research efforts according to agroecological zones, which are groupings of tropical regions that share many soil and climatic characteristics, so as to focus the programs and facilitate the extrapolation of results from one area to another.

d. To establish and sustain long-term research at primary sites in each zone and to develop secondary sites as needed to adapt new technologies to achieve the efficiency and continuity necessary for sound soil management programs.

e. To coordinate work at each of these prime sites under the leadership of a U.S. land grant university with proven expertise in its respective zone, so that the projects draw on all the resources and experience of the university, both in the field and on campus..

f. To team these programs, and their respective networks, into a single, unified program, global in scope, assisted and guided by the Technical Committee, the Board of Directors, the External Evaluation Panel, the Management Entity and the primary funding agency, A.I.D.

g. To encourage the broadest exchange among all components of this unified program through publications, site visits, technical conferences and other regular communications.

The Review Team finds that the CRSP has made and continues to make extraordinary progress towards the achievement of its general and specific objectives and its Global Plan. This finding is supported by the record (See TropSoils Administrative Report 1981-1986, TropSoils Triennial Technical Report 1981-84, TropSoils Technical Report 1985-1986, and TropSoils External Evaluations 1981-1984 and 1986-1987). In 1987, the External Evaluation Panel concluded "...that the TropSoils program has been a highly productive and cost effective investment in research; ...." The Review Team concurs fully with that conclusion.

Reduced funding compromises projected time frames for the accomplishment of objectives, even if all other conditions are favorable, which is unlikely in developing country circumstances, particularly in Africa. Thus, the funding cuts have automatically extended projected time frames of this CRSP. To date, this CRSP has made remarkable progress, but it is predictable that the past rate of progress will not be sustained as program priorities shift to more difficult agroecological zones/national environments, and as research activities are reduced by declining budgets and purchasing power.

Under the guidance of the ME, the CRSP has developed and is following a clearly defined, viable Global Plan well-calculated to realize TropSoils' objectives. The Global Plan is realistic and can be carried out, if adequate resources are made available.

## B. CRSP Management Organization and Governace

The ME organization of this CRSP is in accordance with the provisions of the Grant Document and the BIFAD-A.I.D. CRSP Guidelines. TropSoils Administrative Report 1981-1986 provides brief comments on the structure and activities of

the ME, Participating Universities, BOD, TC and the EEP. Also, the ME has prepared and distributed a manual, "Policies and Procedures for the Soil Management CRSP," to guide the day-to-day administrative operations of the CRSP. With several exceptions, BIFAD-CRSP Guidelines have been followed in organizing and operating the TropSoils CRSP.

The achievements of the CRSP would seem to attest to successful functioning of the several components of the CRSP management system. Close review reveals that this has not been the case: the BOD and the TC have not been in adequate and appropriate leadership positions. A TC exists but it appears to be non-operational. The BOD meets periodically but it seems to have a minor role in guidance, policy and budgetary matters. On the other hand, the ME and the EEP have been dominating forces in shaping overall CRSP policies and programs. However, at the operating levels, i.e., at the U.S. and HC sites, the lead universities and HC collaborating institutions are clearly dominant, virtually independent, forces in conceptualizing and conducting their respective research and training programs in their designated agroecological zones. They operate within ME guidelines and their programs are monitored and reviewed by the ME, the EEP and the A.I.D. Notwithstanding, the salient feature is that they determine their respective programs. Through this decentralized format, the lead universities and collaborating institutions have been extraordinarily successful in establishing programs and in achieving significant advances in soil management information and technologies especially suited to their agroecological zones. These results underscore the strong commitments and capabilities of the universities and their counterpart HC institutions.

At the time of this review, the ME and BOD were engaged in intensive study of the roles of the ME and BOD. The ME believes that the organizational and establishment phases of the CRSP, which mandated a strong guiding role for the ME, are over and it is now necessary for the BOD to assume a greater role in policy making and overall guidance. While at NCSU, the members of the Review Team met and exchanged views informally with members of the BOD. Within the CRSP, there appears to be developing consensus that there is a need for change in the governance of the CRSP, with special regard to the roles of the ME and BOD. In conversations with the ME, the Review Team noted that when the CRSP was organized (and subsequently) the ME and lead universities did not see fit to establish "... a charter and set of by-laws ...." for the BOD, TC, and EEP as suggested the Guidelines (page 10, "Guidelines for Collaborative Research Support Programs under Title XII").

Certain issues and opportunities are now coming to the fore which will require greater involvement of the BOD and the TC in the management of the CRSP. The USAID/Indonesia buy-in for an extension-type activity in Sumatra to help accelerate the adoption of CRSP-generated soil management technologies, the prospect for the participating universities to work together with IITA in the Cameroon, and the need for a more unified CRSP-wide program are cases in point. After seven years, the CRSP appears to be well-positioned and poised to contribute importantly to helping achieve sustainable, productive, economic food and pasture systems for the tropics. In order to move from potential to realization, as the urgency of problems demands, the CRSP will require more effective involvement of the BOD and a re-structured, rejuvenated TC in the affairs of the CRSP. In short, the CRSP needs to be better organized, if it wishes to mount and sustain a global program to produce and promote widespread use of its knowledge and technologies.

### C. Research Organization and Arrangements

This CRSP has chosen to develop and pursue a research organizational strategy structured on agroecological zones: the humid tropics, the semiarid tropics, and the acid savannas (planned research for steplands was not initiated because of budget reductions). Arrangements (MOU's and sub-agreements) have been made with five nations -- Peru, Mali, Brazil, Niger and Indonesia -- and with four participating universities to carry out the CRSP's research activities. The match-up of zones, nations and universities is as follows:

Agroecological Zone	Cooperating Nation	US University
Humid Tropics	Peru Indonesia	NC State Univ Univ of Hawaii
Semiarid Tropics	Niger Mali	Texas A&M Univ & TAES
Acid Savannas	Brazil	Cornell Univ

Memoranda of Understanding (MOU's) and collaborative research activities are in operation with the following institutions and nations:

Peru - Instituto Nacional de Investigacion Agraria Agroindustrial (INIAA)

Brazil - Empresa Brasileira de Pesquisa Agropecuaria  
(EMBRAPA)

Niger - Institut National de Recherches Agronomiques  
du Niger (INRAN)

Mali - Institut de Economie Rurale (IER)

Indonesia - Center for Soils Research (CSR)

Memoranda of Understanding are in force and up-to-date in each of the countries. According to the ME, the Soil Management CKSP is a component of USAID Country Mission research programs; thus, there is generally timely review and updating of MOU's. Under the MOU's, US university and host country personnel are working together at all locations and worksites. Research operations are being carried out in a truly collaborative mode as envisioned and intended. Annual work plans are developed jointly. Such plans serve as blueprints for collaborative activities and the bases for preparation of annual budgets.

#### D. Research Status: Progress and Achievements

##### 1. Research in the Humid Tropics/University of Hawaii Sitiung, West Sumatra, Indonesia

The program at the Sitiung site (a transmigration settlement area) is conducted jointly by the Center for Soils Research, AARD, Government of Indonesia and the Department of Agronomy and Soils, College of Tropical Agriculture, University of Hawaii. When the program was established, NCSU was a partner in the program and had a senior scientist at Sitiung; however, A.I.D. budget cuts forced a reduction in the program and NCSU withdrew. Present University of Hawaii staffing in Sitiung consists of a senior scientist and a graduate student. The CSR provides two Indonesian graduate students and regular Indonesian counterpart personnel. There has been a fairly rapid turnover of Indonesian counterparts. Sitiung is a rugged, remote, isolated site that has had difficulty attracting and retaining Indonesian scientists and technicians. With the recent establishment of a major agricultural research station in Sitiung, this situation may improve. Current CRSP staffing is considered adequate for the reduced program now underway, but below the minimum requirement for a program more commensurate with problems and opportunities of the Asian humid tropics.

The TropSoils EEP reports that the project in Indonesia ".... has been widely recognized for its quality and its

potential contribution to agricultural development on upland soils." The EEP also reports that many of the Sitiung research findings -- green manures from cover crops, alley cropping with fruit and nonfruit trees -- are being used to improve technologies available to transmigrants in Sumatra. Of considerable economic and practical importance, green manure cover crops when incorporated in the soils of the area, can substitute for low levels of lime, phosphorus and potassium inputs. And in this connection, TropSoils has found that low levels of these nutrients can produce ".... adequate, if not outstanding levels of production." (TropSoils External Evaluation 1986-87) During the review, UH researchers presented detailed reports of these important, useful findings. In addition, they described their work on the use of crushed limestone for the correction of soil acidity and companion work on the determination of liming requirements.

A computer expert system, ACID4, has been developed to prescribe lime requirements for soils in Sumatra and other locations. This artificial intelligence program is in its fourth iteration and is now being tested in many places in the world. No doubt this program will be modified to quantify the need for other agronomic inputs besides lime. In time, it will probably come to be regarded as a major contribution to soil management. For now its practical use in places such as Sitiung is likely to be quite limited because most low-input farmers seldom use limestone unless provided as a government subsidy. Slash and burn is the traditional method of supplying base cations for annual crops. As alternatives to slash and burn become available, ACID4 may make a significant contribution.

The UH's CRSP program is oriented towards solving major problems in the humid tropics of degradation of resources and of environmental contamination caused by traditional slash and burn, bush fallow, and shifting cultivation of food crops. The aim is to replace this traditional system with a sustainable type of sedentary farming which would conserve natural resources and protect the environment from carbon dioxide contamination resulting from annual burning of forests. While the exact figures can not be ascertained, it is estimated that worldwide at least seven million hectares of tropical forests are cleared annually.

Unfortunately this noble goal of the CRSP in Indonesia is not articulated, although such is implicit in the objectives. The impact goal of the technology may be hidden by the terminology used, such as, correcting acid

soils, application of lime, alley cropping and green manuring, and recording information and data in an "expert computer model" program. These are project objectives and targets.

A non-agricultural audience that will have to review the CRSP is not likely to infer the real impact goal. The CRSP program in Indonesia does appear to offer potential, if successful technically, of making a significant contribution toward replacing traditional slash and burn, subsistence farming in the tropics of Indonesia and other locations around the world.

The CRSP in Indonesia appears to have made very satisfactory progress in its research program; however, doubt or uncertainty is raised about the apparent lack of acceptance of the new technology by farmers in the Sitiung area because of a number of factors. One of these is the unproven economic feasibility of the use of lime, a purchasable input in the area. Another, probably more significant, is the rapidly changing socio-economic situation in the transmigration area, which raises questions about the role and importance of food production versus cash, bush/tree-crop production in the area. Another factor that is unclear relates to the goals and policies of the Indonesian Government as to land use in the area. These appear to have changed, whether through default by lack of budget, or by design. Socio-economic studies need to be made to sort through these factors and define the role of food production in the area.

It is said that the Government is, on the one hand, subsidizing lime use for food-crop production, and on the other of granting land for tree-crop production. However, the extent of development and use of land for these purposes is not certain. It is reported by some project people that farmers frequently sell the lime that is given to them by the Government. Others reported that some farmers have used and are using lime. Also, both farm abandonment and reoccupancy were reported. All reported that there had been increases in the number and types of farms for tree-crop farming, both on small farms and on plantation land granted by the Government for such purposes. Data and information on the number and types appear to be lacking.

In fact, it appears that no up-to-date data and information on socio-economic changes that have taken place in the transmigration area of Sitiung are available. Yet, such information is essential to the CRSP, not only to determine the feasibility of the use of the technology, but

also to determine the need to re-orient its technology to suit the needs of the farmer clients, with special regard to the integration of food and tree crop production.

The CRSP and CSR should urge the Government and the USAID mission to survey the area to provide current information on socio-economic factors that are affecting the course of economic development of the area. Information and data are needed on such factors as: numbers and types of operating food-crop farms, including gardens, and tree-crop farms; numbers and types of plantations; unemployment; markets and marketing of agricultural products; other industries; distribution systems; changes in farm practices; and composition of farm households.

Such information and data should show the relative role and importance and locations of food production farms in the area to the tree-crop economy. The information should also reveal changes in the methods of food-crop farming. These data and information would form the basis for measuring future rates of adoption of technology developed by the CRSP program. This information could also influence a reorientation of the research of the CRSP (e.g., multi-purpose tree/food crop production on small farms).

Making a survey of this type should be considered by the GOI and USAID, perhaps as part of the proposed agricultural extension program being planned for the area. Although the Review Team recognizes the difficulties of obtaining data in an area changing as rapidly as Sitiung, it urges that this matter be afforded top priority.

Recently, USAID/Indonesia and TropSoils have signed an agreement for the UH to assist Indonesia conduct a special, agricultural extension-type program to extend and promote the adoption of TropSoils management technologies developed and/or tested at the Sitiung site. This agreement is supportive evidence of the successful progress and demonstrated value of this component of the TropSoils CRSP.

The TropSoils project at Sitiung has not been without management problems. The EEP has identified and detailed concerns about on-site management, as well as less than desired participation in the project by more UH faculty and staff. The PC, Department Chairman and the College Dean reported to the Review Team that these deficiencies have been corrected (Appendix 4). There was evidence of greater participation in the program by the Head of the Department of Agronomy and his staff, as well as by staff in other

departments. For example, a forestry scientist has visited CRSP sites in Peru and Brazil with the view of adapting promising ideas and approaches for use in Indonesia. A list of current UH faculty participating in the CRSP is given in Appendix 4.

Program and financial reporting have been satisfactory. Although there has not been an audit specific to the project, the project is a numbered research project in the university system which has regular, official audits as required by state regulations.

The use and management of A.I.D. funds have been in accordance with objectives and guidelines of the CRSP, as well as in accordance with the grant document. There is roughly a 75% (Sitiung) - 25% (U of H) split in the use of funds and the University has exceeded the 25% matching requirement. In addition, there is considerable UH input, such as, the participation of department heads and faculty, that is not included in the 25% matching requirement. When the unanticipated budget cuts occurred in 1986/87, personnel in Sitiung demonstrated their dedication and commitment to the TropSoils program by remaining on their assignments at half pay. Subsequently, the UH was able to arrange full payment of their salaries from State of Hawaii funds.

## 2. Research in the Humid Tropics/N.C. State University Yurimaguas, Peru

During the first years of the CRSP, NCSU was engaged in programs at three TropSoils prime sites in the humid tropics: Sitiung, Indonesia; Yurimaguas, Peru; and Manaus, Brazil. The A.I.D. budget reductions forced a retrenchment which led to the withdrawal of NCSU from Brazil and Indonesia; thus, NCSU currently operates only at the Yurimaguas site. The existing collaborative arrangement is a longstanding and mature relationship which antedates the CRSP by a decade or more. The program was in place when TropSoils was established and has continued with appropriate adjustments.

The program in Yurimaguas is governed by a formal agreement with the Government of Peru. A Five-year plan is in effect and there have been annual planning meetings, except in 1987 when INIAA was non-functional due to national problems. At present, NCSU has two senior scientists and three graduate students in Yurimaguas. They are supported by seven to eight Peruvian scientists and staff. The program is backed up by INIAA and by NCSU. The NCSU TropSoils staff at Raleigh consists of the PC, two direct support scientists (50% time) and eight tenured faculty working mainly with graduate students.

This component of the TropSoils CRSP program has benefited considerably from buy-ins and various kinds of support from donors, as well as strong financial and administrative support from NCSU. The salaries of the PC and one support scientist are paid entirely by NCSU.

Organizationally and administratively, the NCSU-INIAA TropSoils is in excellent shape and is functioning in a highly satisfactory manner. Leadership of the program is outstanding. Its major shortcoming is lack of program funds to operate at a higher and broader level of activity.

The TropSoils component in Peru had a head start and has not had to find its way. The program has built on and extended the progress that had been made when it took over, and it has done so in exemplary fashion. It has developed and/or introduced soil management procedures, crops and cropping practices and put them together in production systems (e.g., continuous cropping; low-input; paddy rice; legume-based pastures; and agro-forestry) which provide possible alternatives to prevailing "slash and burn" agriculture in the humid tropics. It has a management package for the whole landscape, i.e., from the lowest terraces along a river up to the highest, surrounding terrain (Appendix 5). The package provides a good balance of enterprises to increase basic food production, generate cash for family needs and conserve and rebuild the soil resource base.

Research results at Yurimaguas and Manaus support the belief that forest land in the humid tropics can be cleared and farmed continuously, if properly managed (TropSoils External Evaluation 1986-87). The PC feels that the program is poised and ready to exploit "a green revolution in the humid tropics" generated by soil management technologies. TropSoils efforts in this regard include networks involving soil scientists/technicians administrators in institutions in Central and South America (10 countries), Africa (16 countries) and Asia. These networks are built and/or strengthened around training workshops (funded in part by the Rockefeller Foundation).

This component of the Soil Management CRSP is most impressive. Its potential returns -- increased food production, effective protection of vital, non-renewable natural resources (soils of the tropics), and reduced pollution of the atmosphere -- could be incredibly rewarding. The excitement of the scientists and others involved in the program is understandable, as is their enthusiasm and

eagerness to promote and accelerate the widespread use of their technologies.

Long-term A.I.D. funding for soils research in South America and Asia involving US universities and cooperating nations has made possible the progress and achievements that have been made in understanding the nature and properties and management of soils in the humid tropics of South America and elsewhere.

### 3. Research in an Acid Savanna Region/Cornell University, Brasilia, Brazil

Cornell University is the lead university for the TropSoils research in the acid savanna agroecological zone. The HC collaborating Institution is EMBRAPA through its CPAC research center at Planaltina on the outskirts of Brasilia. Also, CU has continued the research at Manaus on nitrogen management in humid tropic soils (green manures and crop residues). Before the budget reductions, NCSU and CU shared the research effort at Manaus. The CRSP, through CU, has maintained research in the Brazilian humid tropics, albeit at a much reduced level.

At Brasilia, CU had two senior scientists and several graduate students. Recently, one scientist moved to Manaus. These scientists and students have strong, extensive faculty backup on the CU campus. The Review Team did not visit CU, but discussions with the ME and reports of the EEP indicate excellent management of the program by the PC and outstanding support of the CRSP by CU.

In the early years, this component went through a degree of administrative and operational turmoil. Collaboration with CPAC was less than desired, with deficiencies on both sides related to setting and agreeing on research priorities and the role and use of graduate students in Brazil (TropSoils External Evaluation 1986-1987). These and other deficiencies have been attended to and corrected; however, there is lingering concern for greater integration and use of EMBRAPA personnel at Manaus.

Worldwide, the acid savanna soils cover over 500 million hectares with close to 200 million hectares in Brazil alone (the Cerrado). In most savanna regions, crop production is limited by acidity, toxic aluminum, and infertility of highly-weathered soils. Research and practice have shown that through proper management, i.e., additions of lime, phosphorus and nitrogen, acid savanna soils will produce adequate yields of food crops and pastures. However, there is

concern as to whether serious problems will arise if such soils are intensively cultivated for extended periods. Thus, the thrust of the CU/CPAC program is to investigate this matter with the goal to develop productive, sustainable agricultural systems which protect the soil resource and the environment.

Evaluation reports of the CRSP program and the ME indicate this component is adequately staffed, well-organized and backstopped satisfactorily by CU and its HC collaborator. It is functioning smoothly and making excellent progress towards the achievement of better understanding and managing the soils in the Cerrado and the Amazon basin. Selective achievements include: identification of forage legumes which can fix up to 250 kg/ha of atmospheric nitrogen; determination that such legumes when incorporated in the soil, 60-70% of their nitrogen content will be mineralized and available for use by the succeeding crop; development of a method to evaluate various legumes as nitrogen sources; and an incubation technique to determine the nitrogen mineralization potential for legumes. In the context that available nitrogen is one of the major bottlenecks to the solution of world hunger, especially in the tropics, these inter-related findings are highly important contributions to soil management with significant agricultural, resource use and economic implications.

### 3. Research in the Semi-Arid Tropics/TAMU/TAES, Niamey, Niger and Bamako, Mali

Niger/Mali and the CRSP (TAMU/TAES), as well as other nations and assistance agencies, encounter a most difficult situation in the semi-arid tropics. Engaged in finding food production solutions for areas at the low end of available rainfall -- areas with 500 to 300 millimeters and below -- with increasing population pressure, there is conjecture and concern as to what is possible with regard to sustainable, food production enterprises and systems. Notwithstanding, the reality is that more than 400 million of the "poorest of the poor" live in the semi-arid tropics of Africa and Asia and it is imperative that means be found to improve their circumstances while protecting the soils and halting desertification. The collaborators in this component of the TropSoils program are involved in just that -- a most difficult, challenging endeavor.

Planned and operated by TAMU/TAES and INRAN, the TropSoils program has its headquarters in Niamey, the capital of Niger. Most of the research, however, is being conducted

in an area south and east of Niamey with rainfall in the 500 mm range. In its early years -- it has been in operation about five and a half years -- the program was quite ambitious with multiple research sites representative of a larger portion of the country and the Sahel. In response to concerns of the EEP, ME and others, the program is now focusing and concentrating its limited resources in a more promising region.

At present, TAMU has a senior scientist and a graduate student in Niamey. INRAN provides local staff support, experimental sites and facilities, which are limited and variable in quality and quantity. With meager staff and financial resources, INRAN is hard-pressed to provide the CRSP with the kind and level of support it needs. Reports indicate that INRAN staff are active in planning and decision making, but because of severe staff shortages tend to rely on TAMU scientists in conducting operations. This situation is expected to improve as more INRAN personnel are trained and made available. The program in Mali is essentially a satellite of the program in Niger. No TAMU/TAES personnel are located in Mali. The Institut de Economie Rurale at Bamako is the collaborating institution in Mali.

The TropSoils EEP review report for July 15-23, 1986 documents the early start-up problems experienced by this component in Niger/Mali and in Texas. In spite of this early adversity, several findings have been made which are having unexpected, favorable consequences.

Trash (plant stems and leaves) mulching, researched and developed by an observant TAMU researcher assigned to Niger, has become the cornerstone of current forestation/firewood development programs in the area. It was found that branches of trees and shrubs, left behind by woodcutters, when spread on the soil surface are covered by the blowing sands and eventually regenerate/develop into new stands of trees and shrubs. The resulting vegetation reduces wind erosion and produces a soil base for production of more wood. This is a most important finding because it may help to halt the seemingly inexorable process of deforestation and desertification.

TropSoils' chemical studies of the soils in the Niamey area have revealed a likely cause of the poor performance of improved, high-yielding cultivars of sorghum: high, toxic levels of aluminum in the subsoils which limit root growth and result in shallow-rooted, drought-susceptible, poorly-nourished plants. This finding could have extremely important implications for crop production in the region, if the condition is widespread.

In Niger, TropSoils has productive working relations with ICRISAT scientists located at the ICRISAT center in Niamey. This collaboration, though limited by the level of TropSoils' involvement in Niger, has considerable potential for making program advances. But clearly the situation in Niger requires a level of input of an order and magnitude far beyond TropSoils' limited resources; however, a well-planned, well-financed consortium-approach involving TropSoils, INTSORMIL, ICRISAT, and the USAID Mission in direct support of INRAN could make a difference. CRSP officials should not be resigned to the level of effort forced by the recent budget reductions, but should aggressively seek out ways and means to significantly increase the CRSP's level of research in Niger through the USAID Mission and other sources.

With regard to present administrative operations, this component of the CRSP is reported to be in excellent shape. TAMU/TAES support is close and strong. The recently appointed PC is a scientist of proven competence with considerable experience in international agricultural development. Relationships in Niger with INRAN, USAID/Niger and ICRISAT are also rated excellent. It noted that TropSoils has strong support of the USAID/Niger. As is the case with the other components of the Soil Management CRSP, this component is seriously constrained by lack of financing for carrying out a program that is urgently needed and for which the CRSP has demonstrated capacity.

#### E. Monitoring of the CRSP

##### 1. By A.I.D.

On behalf of the A.I.D., the A.I.D. Project Officer monitors the Soil Management CRSP. The present officer was involved in the planning that led to the CRSP and he has been involved ever since. He visits projects, participates in on-site reviews, he attends BOD, EEP and other regular and special meetings and periodic reviews of the CRSP. He is in regular contact with the ME Director with whom he discusses and seeks solutions to problems. He reviews and comments on reports and acts on procurement and travel requests and other matters as they come to his attention. As the "desk officer," he represents the CRSP within the A.I.D. and the A.I.D. within the CRSP.

The present officer is a recognized soil scientist/soil chemist/fertilizer specialist with life-long

domestic and international experience in soils and fertilizer matters. Within the CRSP he is a highly regarded, helpful, knowledgeable scientist. He enjoys the relationship of a professional colleague. He is both a friend and a critic of the CRSP and is not reticent to extoll its accomplishments and point to its flaws and failures. His monitoring of the CRSP has been close, continuous, adequate and in the best interests of the A.I.D.

## 2. By the Management Entity

The ME has installed and is following a regular system of reports (program and financial), site visits and meetings of CRSP principals (PC's, BOD, EEP and others) which has provided adequate, highly satisfactory oversight of CRSP activities/programs at all domestic and HC sites and assured compliance with the Grant Document and BIFAD/A.I.D. guidelines. In the early years of operation, authority and decision-making were highly centralized. As the CRSP has progressed and difficulties have been ironed out, a more collegial, integrated relationship has evolved.

As far as could be ascertained, there is no overlap and redundancy in monitoring and oversight of the CRSP.

## F. Program Reporting Requirements

Reports to be submitted to A.I.D. and BIFAD by the ME are outlined in the Grant Document and BIFAD/AID CRSP Guidelines. TropSoils is meeting these requirements. Within the several components of TropSoils, there are reporting requirements set by the universities and the HC collaborating institutions. For example, CSR requires its staff at Sitiung in Sumatra to submit monthly reports. The UH staff at Sitiung submit these and other program and fiscal reports to the UH as instructed by the PC. Very similar reporting procedures can be cited for the other lead universities and HC collaborating institutions.

Reports to A.I.D. required by the Grant Document are surprising few and limited to fiscal reports required by U.S. laws/regulations, an annual budget presentation, a quarterly training report, and copies of meetings of the BOD, TC and EEP. There is no requirement for an "annual report." There is, however, a requirement for annual program evaluations by the EEP and there can hardly be satisfactory evaluations without annual program reports. Such reports, though not officially required, are current through 1986.

It is probably advisable to establish some means to keep the A.I.D. abreast of the status of the CRSP in the period between annual program evaluations. This could be done by providing for a short summary section in the Quarterly Report (now a training report) on recent and coming events, achievements and problems.

#### G. Financial Management and Audits

Tremendous improvements have been made in financial management during the last three years. Improvements have evolved from experience, introduction of improved accounting procedures, and improvements in management (Appendixes 6, 7 and 8).

A.I.D. grants all CRSP funds to NCSU and NCSU is legally accountable for such funds and is responsible to A.I.D. for the program. This is irrespective of the organizational structure authorized by A.I.D. and BIFAD and recommended by the CRSP Guidelines and accepted by the participating universities.

Through sub-grant agreements with participating universities, NCSU established the framework for the CRSP program and through such agreements holds each of the universities accountable for its funds and responsible for their components of the program. Each university used its respective accounting system and was initially slow in its paper work and in setting up a system of accounting for the use of CRSP funds. While the business office of each university did the official accounting, the PC's were given the duty of handling vouchers. Being new in such function, they, in the early stages, often failed to pay accounts promptly. This resulted in the accumulation of unpaid bills and substantial amounts of committed but unspent money in pipelines which gave false signals to A.I.D. as to the use of funds.

The situation reached a crisis in 1985 which was the peak year of unpaid bills before the budget cuts. Large commitments had been made by TAMU and HU which were far ahead of actual expenditures. The ensuing reduction by A.I.D. in 1986 and 1987 (17 to 18% each year), resulted in exposure of over-commitments considerably in excess of reported expenditures.

In rectifying the situation, the ME found it necessary to take some funds scheduled for UH and allot them to TAMU to cover its shortfall; however, this action did not cover all the commitments. This over-commitment and under-payment

resulted in draw-downs from each university to cover commitments. While each university was out of pocket and sustained losses, UH suffered the most.

This difficult situation was brought to a head by the drastic budget reductions and prompted the universities to get their accounting and financial houses in order. This was done in part by shifting responsibility for voucher purchases and payments to their corporate research foundations. An additional key improvement was made by the universities' acceptance of A.I.D.'s suggestion that those who were not doing so should use A.I.D.'s accrual system of accounting along with their cash accounting systems.

Adoption of the accrual system shortens the pipeline and brings expenditures more up-to-date. Instead of six months to one year gaps between commitments and expenditures, the accrual system has reduced the gaps to a few weeks to two or three months at most. The current gaps are due to the lag time in reporting of commitments and expenditures by overseas personnel and host country institutions.

At this point, TropSoils has its financial management in order. The ME reported that each institution is now in control of its finances, and has receipts and payment vouchers accounting for each commitment and expenditure. NCSU has assumed audit responsibility for the CRSP and works with participating US universities in fulfilling audit responsibilities.

Each university uses regular audit schedules and procedures which conform to state regulations and are acceptable to the Defense Department (these universities fall under the Defense Department grants and contracts criteria for audits). While no university has made an external audit of the CRSP, each institution has made spot internal audits. Also, the ME practices "pre-audit approval" of expenditure requests, which amounts to establishing a paper trail of authorization and approval for each transaction. No small part of the improvement is due to the interest and oversight of the Director of Contracts and Grants at NCSU and counterpart department directors in the other universities.

#### H. Training

TropSoils Administrative Report 1981-1986 provides a summary of degree training supported by TropSoils and its

collaborators. The summary gives participating universities, sources of support, degree programs, names of students and countries of citizenship.

A total of 80 individuals with support from many sources are listed in the report. The breakdown by universities shows that 13 were enrolled at Cornell University, 13 at the University of Hawaii, 39 at North Carolina State University and 15 at Texas A & M University. Of these, 38 were supported by the CRSP and the remainder, 42, by a rather large number of assistance donors and governments. The students came from 29 countries. Those supported by the CRSP are given in the following table.

Table 1

## TropSoils Supported Training September 1981-December 1986

Country of Citizenship	Degree Program		Total Number
	Ph.D	MS	
Belgium		1	1
Brazil		1	1
Burkina Faso		1	1
Cameroon	1		1
Colombia	2		2
Germany	2		2
Kenya	2		2
Mali	1		1
Nicaragua	1		1
Peru	2		2
USA	16	8	24
Totals	27	11	38

The distribution of CRSP-supported trainees as shown in the table does not appear to have special focus or concentration with respect to collaborating nations or agroecological zones. Niger and Indonesia, two TropSoils host countries, are conspicuous by their absence from the list, probably because of lack of candidates for training. In the case of Indonesia, five Indonesians received Ph.D. training --three at UH and two at NCSU --through funding by MUCIA (1), USDA (1), USAID (1) and IADS (2). Niger received two awards (one Ph.D. and one M.S.) from NCRP. The large

number of US graduate trainees can be explained by the need for graduate students to assist with research programs in the US and at HC sites, given a lack of host country graduate students.

As to the 42 TropSoils trainees supported by non-CRSP funds (data not shown), four were from West African countries: Niger -2, Cameroon -1 and Senegal -1; Seven were from South Asian countries: Indonesia - 5, Fiji -1 and New Zealand -1; 18 were from Central/South America and Caribbean countries: Brazil -6, Peru -3, Colombia -2, Dominican Republic -2, Haiti -2, Venezuela -1, Costa Rica -1 and Argentina -1; and 13 were from North America, Western Europe and China.

An update of persons in degree training as of October 1988 (Appendix 9) shows that ten new scholars entered training after December 1986. Of the ten, five are being funded fully or in part by the CRSP and five had non-CRSP sources of support. Of the five being supported by the CRSP, two are from Brazil and three are U.S. citizens.

The data for both CRSP and non-CRSP supported training are quite revealing and should prove useful to CRSP authorities in reviewing and adjusting the CRSP's training priorities. From the data, the CRSP has not had much of an impact in expanding its counterpart base in Niger and Indonesia, where the need for trained counterparts is greatest. This is a major shortcoming. In the case of Peru and Brazil, expanding the counterpart base is not a matter of concern.

While training is not the central thrust of TropSoils, the availability of trained persons is central to successful achievement of CRSP objectives. At a minimum, it would seem that the CRSP should have and be following, as best it can, a training plan for its HC institutions based on an assessment of personnel requirements. Such a training plan, which would delineate training inputs from all sources, would provide guidance to the CRSP in determining the nature and magnitude of its inputs into training. In the absence of such a training assessment and plan it is not possible to determine whether it would be judicious to reduce training in response to budget reductions. It is noted that one of the objectives of TropSoils is to provide advanced training to developing country personnel. There should be a clear statement as to the details of this objective and how it will be achieved. Such a statement/plan should be an integral part of the Extension Proposal & Program Plan 1987-1992 and should include formal and nonformal training plans.

In regard to nonformal training, TropSoils is providing highly-regarded training workshops through its tropical soils research networks for Latin America and Africa. These well-attended workshops have been structured around practical applications of improved management of soils and related cropping practices. Such workshops hold great promise for upgrading and improving the capacities of individuals and institutions, especially in Africa, to accelerate adoption and use of improved soil management practices.

## I. Communications

In 1985, TropSoils took actions to improve its communications. Recognizing that the CRSP needed professional skills to reach and influence diverse, non-technical audiences, it appointed a tenured member of the Department of Agricultural Communications, NCSU, as Editor of TropSoils. Then, it moved to establish a well-defined, discrete communications program. Objectives were set and a course of action was designed to transmit its research results and message to technical and non-technical audiences. Specifically targeted are policy makers, assistance donors, environmentalists, and officials and users in developing nations.

The program as explained by the Editor to the Review Team certainly seems attractive and adequate to the task of reaching and influencing intended audiences. There is serious question as to how to finance the operation at the level and diversity of effort envisioned. The program is currently operating at about maximum capacity with present funding. Any expansion will likely be at the expense of research and training, which are already hard-pressed for funds. Nevertheless, the BOD and ME have afforded this newly structured initiative highest priority along with research.

The first products of the Editor -- TropSoils Technical Report 1985-1986, TropSoils Administrative Report 1981-1986, TropSoils External Evaluation 1986-1987, and TropSoils Extension Proposal & Program 1987-1992 -- are attractive, easily read and understood documents. However, they seem to be "catch-up" publications to comply with CRSP - A.I.D. reporting requirements. Non-technical publications are still in the preparation stage. A series of user-oriented manuals and summary reports for LDC users is being prepared.

The CRSP's technical and scientific publications are highly satisfactory. Research results are being published

regularly and extensively in refereed international and domestic journals and in special reports, research briefs and abstracts. The CRSP gets very high marks with regard to the number and quality of its scientific publications.

#### J. Strengthening Host Country Institutions

The Review Team did not visit any of the four HC sites and have an opportunity to assess firsthand the research capacities of collaborating HC institutions.

The long associations of CU and NCSU in Brazil and in Peru, and the records of growth and development by EMBRAPA/CPAC and INIAA suggest there have been substantial contributions to strengthening these institutions through training and direct technical assistance over the years. TropSoils has continued training Brazilian and Peruvian scientists. In terms of counterpart strength to conduct collaborative research, the HC institutions in Brazil and Peru are considered to be fully satisfactory.

The impact of the CRSP on the institutional capacity of CSR/AARD at Sitiung is difficult to determine because of the frequent turnover of counterpart personnel. UH and NCSU have provided "inservice" training for CSR personnel at Sitiung. At the degree training level, the input of the CRSP has been minimal and unimpressive; however, given the turnover of personnel it is hard to state that a greater degree-training input would make a difference. How to build up and stabilize the counterpart situation at Sitiung is a matter which should be discussed with CSR/AARD officials.

The Review Team is not in a position to pass judgement on the counterpart/institutional capacity situation at Niamey, Niger, other than to state it does not appear to be fully satisfactory for conducting collaborative research, in fact, it may be unsatisfactory. For whatever reason, TropSoils does not seem to have done very much in the way of strengthening INRAN and helping it get in position to participate more effectively in collaborative research. Over the five-year period, 1981-86, only two persons have received training at TropSoils universities and they were not funded by the CRSP.

The inability of TropSoils to build up the counterpart base in Niger may be due to the very limited availability of prospective candidates for degree training, rather than the failure of the CRSP to offer/provide training opportunities. Nevertheless, the matter of building strong capacity to

conduct soils research within INRAN is critical to Niger's ability to deal with urgent national problems of food and desertification. This is a matter which should be given appropriate attention by TAMU/TAES, the ME and A.I.D.

#### K. Relations with International Agricultural Research Centers and Other International Institutions

TropSoils, through its participating universities and HC institutions, has an outstanding record of cooperation with the IARC's -- ICRISAT, IITA, CIAT, ICARDA and CIP -- and other international organizations, such as, IFDC, IBSRAM, and IBSNAT. For example, TAMU has an operating arrangement with ICRISAT at its center in Niamey. And cooperation with IITA has reached the stage of possible joint operations with the Government of the Cameroon. At UH, TropSoils and IBSNAT are mutually supportive programs. In South America there has been a continuing close relationship between TropSoils and CIAT. Thus, the record is replete with examples of cooperation with the IARC's.

The relationships with IARC's, though extensive, have been selective and in support of mutual interests. Such relationships should not be diminished but increased in joint training programs and in collaborative research activities to extend improved soil management technologies to users. The needs of most users in the humid and low rainfall tropics are overwhelmingly urgent and require that available resources should be mobilized and utilized in their support as rapidly as possible.

#### L. Relations with Other CRSP's.

TropSoils has recognized that there may be opportunities and good reasons for two or more CRSP's to conduct interdisciplinary research. For example, In Niger, where TropSoils and INTSORMIL operate, there may be such an opportunity. Excess soil aluminum in the subsoils in the Niamey area may be responsible for the poor performance of sorghum cultivars. Such a problem is a matter of concern for both CRSP's and could be a basis for joint research.

In the Cameroon, there may be an opportunity for three CRSPS -- TropSoils, INTSORMIL and Bean/Cowpea -- to join forces. Together, they may be able to create a critical mass of effort greater and more effective than that of single CRSP working alone. In a period of diminishing financial resources, such arrangements could be means to sustain operations at productive levels. It is very likely that HC's

would find joint CRSP activities more desirable than divided, single operations.

Moving into a multiple CRSP mode of operations is probably easier said than done. Given the predictable difficulties of establishing formal relations, it may be more rewarding at present to encourage and promote informal collaboration at HC sites where two or more CRSP's are currently operating and where working together would be mutually advantageous. Such informal arrangements could be expected to surface the beneficial and the not so beneficial effects and set the stage for closer, more formal relationships at a later date.

#### M. Impact of the CRSP on U.S. Agriculture

The TropSoils Technical Report 1985-86 details at some length the views of the PC's with regard to the contributions of their components of TropSoils to agriculture in their states: Hawaii, Texas, North Carolina and New York.

Texas and Hawaii have agroecological zones much similar to their collaborators in Niger and Sumatra. In the case of Texas and Niger, they have so much in common that much of the research carried out is directly useful in Niger and Texas. The opportunities for such direct transfer of knowledge and technologies to New York and North Carolina from their overseas sites are much less than in the cases of Hawaii and Texas.

The record indicates that there is increasing U.S. use of TropSoils produced procedures, tests, models and expert systems. One excellent example of an important CRSP contribution to the U.S. is the Fertility Capability Classification (FCC) system which is being used with soil surveys. The FCC is a technical system to identify soil constraints to crop production through interpretation of soil taxonomy. The system is being included in new soil surveys in North Carolina and other states.

The UH is engaged in research on decision-support systems for farmers. In Hawaii, the PC has made TropSoils a part of a larger, integrated program to develop reliable, decision-support systems. This program uses system analysis and crop simulation models to combine state, federal and international projects/data into a complete computer program, IBSNAT (International Benchmark Sites Network for Agrotechnology Transfer), that can produce useful information for local, national and international clients. ACID4, the TropSoils expert system for determining

lime requirement, is a supporting element of IBSNAT. When perfected, these interrelated, decision-support systems are likely to have great influence on managing and conducting agricultural production enterprises, as well as on the nature and extent of supportive agricultural research.

#### N. Impact on Host Country and U.S. Institutional Research and Government Policies

In the areas of Peru where shifting, slash and burn agriculture is common practice, an estimated 5,000 hectares are now being devoted to continuous cropping. And in the Amazon basin, paddy rice is now grown in continuous cultivation on about 50,000 hectares. These changes in cropping patterns have come about in no small part from research of the TropSoils program and are no doubt having an impact on government policies and actions with regard to settlements, infrastructure development, production inputs and markets. Over the longterm, the impact on improvement of natural resource preservation and related government policies and actions could be quite significant.

In Indonesia, the decision of AARD and USAID to locate a major agricultural research center in the Sitiung area has been influenced to a degree by the results of TropSoils research in the area.

In Niger, there is no doubt that trash mulching developed by TAMU/TAES and INRAN has changed the nature and extent of the Government's reforestation program.

The achievements of the CRSP and its HC collaborators highlight the potential returns from soil management research, and recognition of such achievements may lead to shifts in institutional research priorities. At this time it is too soon to tell.

As far as ascertained, there has been limited impact by the CRSP on U.S. institutional research priorities, but there has been some. For example, there is a soil-climate research project in a vegetable growing area of Hawaii -- State of Hawaii funded -- that is based on principles and concepts of farming systems designed for the TropSoils program in Indonesia. And TropSoils research in Peru and Brazil on managing acid soils and screening cultivars for use on such soils has led to similar research with regard to managing and cropping the acid soils of North Carolina. NCSU plant breeders now screen peanut varieties for soil acidity tolerance, as well as other desirable traits.

The Team could find no evidence of an impact on U.S. Government policies by the Soil Management CRSP.

#### O. Cost Effectiveness

At this point in the life of the Soil Management CRSP, the benefits are promising but their socio-economic value is still to be proven. The changes in farming practices and increases in production that are occurring in Peru and Brazil are thought to be producing significant benefits, but the extent and socio-economic potential of the benefits need to be studied and documented. Similarly, the socio-economic benefits accruing from other TropSoils research findings, i.e., trash mulching for reforestation control of desertification and the production of firewood and the use of green manures and lime for increased food and pasture production, need to be determined and reported. These circumstances emphasize the need for socio-economic analysis.

The Review Team believes that it not possible to calculate a meaningful, useful cost-benefit ratio for the CRSP at this point. There are just too many confounding factors, e.g., an open-ended time period producing direct and indirect socio-economic benefits influenced by unmeasured inputs from diverse sources; inestimable benefits from training and strengthened institutions; ill-defined contributions to soil conservation and protection of the environment; and the opportunity costs to labor related to economic factors that compete with food production in the use of natural resources and labor. The literature of development is replete with references to the high returns to societies from investments in agricultural research, training and institution building. TropSoils shows much the same promise by contributing to a more extensive and productive soils base for producing plants and animals in the harsh environments of the high rainfall and semi-arid tropics.

NCSU, UH, TAMU/TAES, CU are recognized centers of excellence in soil science. They include on their faculties and staffs world leaders and authorities experienced in international agricultural development. The distinguished PC's that lead the programs are backed by excellent research facilities and support staffs, and they have their pick of promising young graduate scholars and researchers from all over the world. Thus, these institutions bring great strengths to the CRSP. On the down side, the least reassuring aspect of services provided by the universities is that personnel posted to field sites in HC's are generally untenured, specially-hired scientists. Despite this fact, so

far, this CRSP has been able to field highly competent, experienced persons to conduct overseas operations.

It is improbable that A.I.D. could secure the kind, quality and extent of services provided by the participating universities elsewhere at lower cost. In fact, such services may not be available in institutional, readily accessible form elsewhere in the United States, except in the university community. In terms of present and prospective socio-economic benefits, TropSoils appears to be a cost-effective investment in development. Confronted with great problems, the program has made tremendous progress toward proving the hypothesis that research can find solutions to the problems of managing tropic soils for sustained food production.

#### P. NCSU University Administrative Oversight of the CRSP

Leadership and organization and management of international programs at NCSU are most impressive. There is University-wide participation in and support for international programs. NCSU administrators see the Soil Management CRSP as an integral part of the university's programs and have moved to ensure that the CRSP receives the support it needs to make it successful.

The TropSoils Management Entity office is able to get by with minimal administrative staff -- two persons, the Director and an Administrative Assistant -- because of close, extensive and effective back-up by various offices of the University. As currently structured and staffed, the Management Office of the ME is cost effective; however, within the University, organizational and operational changes are being considered to enable the ME to carry out its functions in ways to improve its operations.

The Director of the Management Entity has done a fine job of administering the Soil Management CRSP in accordance with the provisions of the Grant Document and BIFAD-A.I.D CRSP Guidelines and regulations of NCSU. In the early days of the CRSP, he had to depart somewhat from the guidelines in order to resolve institutional differences and get research going. Results to date indicate that he has been prudent, even-handed and firm in directing the CRSP. A soil scientist and former Head of the Department of Crops and Soils, NCSU, he has brought specialized knowledge, administrative skills and years of experience to the CRSP. The achievements that have been made in developing and directing a global program in association with several universities and HC institutions testify to his leadership.

He has been a strong guiding, perhaps dominating, force in the Soil Management CRSP. His performance as Director has been outstanding.

NCSU has had substantial involvement in international development programs with A.I.D. and its predecessor agencies over the past three decades. The enthusiastic, supportive attitudes of university officials are especially noteworthy. NCSU back-up support and oversight of the CRSP are judged outstanding.

#### Q. Additional Research and Technical Assistance

This administrative management review unavoidably touches on programmatic factors and considerations.

In looking at TropSoils from the standpoint of the need for additional research and technical assistance, several important considerations stand out.

One is the magnitude of the problems. The CRSP is concerned with soil management problems of the humid tropics, acid savanna regions and the low rainfall tropics. These areas cover major portions of the earth's surface involving hundreds of millions of hectares of land and hundreds of millions of people. The magnitude and complexity of the problems of using and protecting the lands and the environment and serving the people are enormous. For example, the consequences of slash and burn agriculture in the humid tropics are of great consequence with worldwide impact. It is estimated that 15 to 25% of the warming of the earth's atmosphere (the highly publicized greenhouse effect) is due to clearing of tropical forests. The annual rate of such clearings is put at seven million hectares with the release of one billion tons of carbon into the atmosphere each year (2).

Another is the extent of TropSoils research achievements to date and their importance. The CRSP has made very significant, technological contributions to developing sustainable agricultural systems for the humid tropics and acid savanna regions and to the protection of natural resources and the environment.

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(2)

Sanchez, Pedro, "Deforestation Reduction Initiative: An Imperative for World Sustainability in the Twenty-first Century," a paper presented to the Bureau of Science and Technology, A.I.D., July 22, 1988.

Another consideration is the paucity of resources devoted to research in relation to the magnitude of the problems. While the CRSP has done well with the resources that have been available, the fact is that only a few U.S. scientists, graduate students and HC scientists and specialists are directly engaged in research at HC sites. It is almost quixotic to imagine that so few scientists could undertake to solve global soil/agroecological/environmental problems that affect a good portion of the earth's surface.

Then there is the magnitude of the task of filling the needs for continued applied research and technology transfer. The resources now available to the CRSP can do little more than continue the applied testing of new technology in different areas in countries where the CRSP is now working. Extending and gaining acceptance of the technology locally will require socio-economic studies not programmed, or feasible, with existing resources. Some help now appears to be available from USAID/Indonesia for the work there. Other USAID missions will need to be tapped. Once socio-economic data are available, transfer of technology will become more feasible, but still a formidable task, when one considers the areas and numbers of countries, peoples, cultures and political situations around the world where shifting cultivation is practiced.

A massive, global program involving many countries, USAID missions, and donors will be required to set the stage and effectively transfer the technology to the many countries where needs are relevant. The CRSP should become the nucleus of a much broader program to address the environmental, natural resources, sustainable agricultural problems, in order to attract additional resources from other donors. Such additional resources would permit a multi-disciplinary approach to cover socio-economic and other scientific needs for successful transfer of technology.

While possibilities for other funding sources and broadening the effort need to be explored by the A.I.D., the CRSP needs to set its own priorities carefully in the use of its resources. It seems quite clear that a higher order of effort and intensity should be afforded the humid tropics of Asia and Africa and the semi-arid and savanna regions of Africa. This is not to discount important needs in the Americas or to suggest that TropSoils programs in the Americas be diminished or terminated, but to encourage appropriate attention to and greater effort in areas where the needs are judged most urgent, where the circumstances

and prospects are less clear and where research is required to chart the way (Appendix 10). While there remain unresolved issues and problems in the Americas, TropSoils and others have opened the door and pointed the way for research and development to proceed. By contrast, this has not been done for Africa. In the Sahel and savanna areas south of the Sahara, the circumstances and course ahead are not clear. Unless and until the soils in these regions are better understood and managed, it is predictable that agricultural development will be difficult and slow. To give an example of such uncertain conditions and prospects, TropSoils has found in a recent survey that subsoils in the Niamey region of Niger may be high in aluminum. If this unfavorable condition is widespread, a much greater research effort will be required by TropSoils and others.

## V. DISCUSSION AND SUMMARY OF FINDINGS

The ME has followed the Grant Document and BIFAD-AID CRSP Guidelines in organizing and operating the Soil Management CRSP through subgrants to four participating universities -- NCSU, CU, UH and TAMU. With the universities, it has established objectives, a Global Plan, a program strategy and a framework for governance. The CRSP has been in operation for seven years.

The objectives are appropriate and clear. The Global Plan is a comprehensive, realistic, program blueprint well-designed to achieve objectives. The Global Plan is being followed in detail and highly satisfactory progress is being made towards achievement of objectives.

The CRSP has elected to follow a program operational strategy based on conducting research at prime sites -- Peru, Brazil, Indonesia and Niger -- located in three major agroecological zones: the humid tropics of Brazil and Indonesia, the acid savanna region of Brazil and the semi-arid tropics of Central/West Africa. Plans for research on soil management problems of steepplands in the tropics were not undertaken because of funding limitations. Research programs are underway at the chosen prime sites; however, except for Mali-Niger relationship, there are no secondary sites connected to prime sites.

The match-up of universities with agroecological zones and HC's is excellent and has been productive. MOU's provide the bases for collaborative research programs with INIAA, Yuramaguas, Peru; EMBRAPA/CPAC, Brasilia and Manaus, Brazil; CSR/AARD, Sitiung, Sumatra, Indonesia; INRAN, Niamey, Niger; and IER, Bamako, Mali. U.S. and HC counterparts conduct joint research projects at prime sites in fully collaborative modes in Peru and Brazil, but less so in Indonesia and Niger. Research projects at the HC locations are guided by jointly prepared five-year and/or annual work plans. Accompanying, supportive socio-economic research is not being conducted at the prime sites. From a research management standpoint, this is a major deficiency and should be corrected. Otherwise, the research programs appear well-designed, managed and executed.

Research projects at U.S. university sites are varied and supportive/complementary of the research at HC sites. However, the magnitude and intensity of effort at HC sites require attention to see what can be done with current

resources to step-up the pace and intensity of effort. The costs of maintaining university personnel abroad are quite substantial and it may very well be that increases in the number of expatriate scientists abroad can not be made within current budgets. In Brazil and Peru, the number of university scientists at prime sites may not be a limiting factor, given the availability counterparts, but in Indonesia and Niger, this is probably not the case. The magnitude and intensity of effort at prime sites in these two nations appear to be directly related to the numbers of US university scientists at the sites. If this is true, then the urgent nature of the situation demands that an all-out effort be made to increase the number of senior scientists at prime sites in these nations.

With regard to governance, the ME has been the major force in overall administration and financial operations of the CRSP, as would be expected, given the ME's legal responsibilities. The TC has not been operational. The EEP has been active and quite influential. In some respects, the EEP appears to have substituted for the TC. The BOD has been operational but seems to have a limited role in CRSP affairs. At the initiative of the ME, this situation is changing: the BOD is becoming more involved in policy matters, and it is expected that the TC will be used in the role prescribed in the CRSP Guidelines.

Procedures for administrative operations of the CRSP have been published and are in use by participating universities and the ME. Several of the universities had start-up difficulties in the early years, especially with their financial accounts. Such difficulties were highlighted and exacerbated by forced budget reductions and were not without adverse effects on the level of operations and on morale. The shift to accrual accounting appears to have solved the major financial management problem. Financial procedures, including audits, are currently satisfactory. With the worse behind and financial affairs in order, the CRSP is now operating smoothly with supportive oversight by NCSU. The universities are meeting or exceeding the 25% matching requirement. With regard to the matching requirement, there are many unrecorded inputs to the CRSP made by the universities which are over and above those which are listed for matching purposes, e.g., contributions to the CRSP in diverse and substantive ways by deans, heads of departments and other faculty and other staff.

TropSoils has moved to improve its communications with the world outside. It has appointed an editor, a professional

in agricultural communications, to upgrade and improve reporting to non-technical audiences, particularly donors, policy makers and farmers/users.

The Soil Management CRSP, once considered by many as the candidate with the least possibilities among the several CRSP's to show success, now offers potential for possible breakthrough which could have dramatic effects in reducing destruction of forests through slash and burn agriculture and providing stable, continuous field cropping systems in the humid tropics. This potential breakthrough is indicative of the key role that soils have in the fragile environments of the wet-dry tropics.

Of special development and environment protection significance, the Soil Management CRSP is one of the few, perhaps the only, global operating program with an achievement record in areas of marginal lands and fragile environments of the high and low rainfall tropics. The Soil Management CRSP could form the nucleus of an extensive, worldwide research and development effort for such areas. Development of such tropical areas, now being overwhelmed by burgeoning populations, is one of the major issues facing development assistance agencies. It should be noted that the universities participating in the CRSP have the capacity to double, perhaps treble, their efforts. Augmented by the extensive resources in the U.S. university community, the CRSP has the capacity to deliver needed support for whatever level of effort that may be required.

Operating a world-wide research program -- continents apart -- is not an easy task. Considering the variety of actors, institutions, languages, customs, cultures, and problems that confound progress, it seems a miracle that such a program could possibly be successful. Interest, determination, perseverance, and improved management have been major contributing factors to progress. Operating such a global program has been a learning experience for everyone. With only a guide book, i.e., the BIFAD-AID CRSP Guidelines, almost everything has been learned from experience.

TropSoils has grown from four, isolated and unconnected projects on three continents into a global, coordinated, collaborative program as envisioned in its design. Moreover, the program is incorporating the experience of related research programs, and it is exchanging useful scientific information with them. The isolation which previously existed is being replaced by collaboration. It was exciting, for example, to find investigators operating in Indonesia talking

about alley cropping (a phrase that may have originated at IITA/Nigeria) and comparing results in Indonesia with those in Peru and Nigeria.

While there is collaboration at the project level, the TropSoils Extension Proposal and Program Plan 1987-1992 comes up short in presenting zonal projects as individual activities without tying them together and presenting them as a cohesive global program, and in articulating the ultimate goal.

In presenting a proposal involving a global program, the nature of the global objective/goal should be articulated and the role of each project in achieving that objective/goal should be clearly stated. Furthermore, at the project level, each objective must be stated in terms of its contribution to the conservation and management of natural resources, protection of the environment, and to sustainable, productive agriculture. These are circumstances and problems upon which the CRSP can make an impact, but they are not being articulated. The details of liming acid soils, applying green manures, and developing expert computer systems are important soil management activities, but they should not be expressed as program objectives. If the CRSP does this, it sells itself short. Such presentations tend to hide the real importance and role of the CRSP. These observations were presented to project scientists and to the ME during the course of the review. The ME expressed intention to improve their presentations.

The final measure of the effectiveness of administration, i.e., "the bottom line," is success or failure in achieving stated objectives. In terms of progress to date and prospects/potentials, the performance of the ME and participating universities has been outstanding.

## VI. RECOMMENDATIONS

The Review Team is highly impressed with the Soil Management CRSP, its operations, management, accomplishments and potentials. It is a success and reflects great credit to all concerned -- the scientists, U.S. and HC; the U.S. and HC collaborating institutions; the ME; the EEP; the A.I.D.; and the planners and funders who made the CRSP possible. The CRSP has demonstrated its capacities and potentials and has secured an important role in international development affairs and circles.

Notwithstanding its accomplishments, the CRSP is not without shortcomings. Toward improvement of the shortcomings, the Review Team recommends that the CRSP should:

1. Arrange for and carryout complementary socio-economic research at each TropSoils prime site, with suggested priorities as follows: Niger, Indonesia, Peru and Brazil.

2. Arrange for an increased order and magnitude of research effort for the semi-arid and savanna regions of Africa and high-rainfall tropics of Asia.

3. Take steps to upgrade and improve the governance and operational roles of the BOD and the TC. The CRSP should consider appointments of scientists to the TC from foreign and domestic institutions outside of the CRSP.

4. Find ways to increase the level and pace of CRSP-supported research at prime sites, with special regard to increasing the number of senior scientists.

5. Revise the proposed TropSoils five-year plan proposal to show clearly the unified, interrelated, mutually-supportive nature of its globally-dispersed projects and their relevance to important global problems. The five-year plan should include a training plan.

6. Identify and implement means to strengthen the institutional capacities of INRAN/Niamey and CSR/Sitiung to conduct soil management research.

7. Develop and carryout a strategy to secure additional resources to fund expanded research, training and communications activities.

The Review Team reminds and emphasizes to A.I.D. that its investment in long-term research on the nature, properties and use of tropic soils through the CRSP and other regional and global projects, past and present, now has the potential of paying handsome dividends. It is to the credit of A.I.D. that it had the foresight and will to finance such long-term research.

TropSoils through its participating universities and HC collaborators is now positioned, poised and ready to help step-up the pace of development in the tropics. Currently constrained by lack of adequate resources for expansion of programs, serious consideration should be given to seeking funds from the Congress and other sources to support a much broader program to address the massive needs of the environment, natural resources and sustainable agriculture. Means are needed to create greater, more intense efforts at prime sites and to initiate activities at connected, secondary sites, so as to accelerate the generation and spread of knowledge and technologies. The matter is urgent. For many clients and situations, tomorrow may be too late.

**APPENDIXES**

## APPENDIX 1

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### F. STATEMENT OF WORK.

The following specific items should be considered by the team:

1. TropSoils is now in its seventh year. Has A.I.D. and Management Entity (ME) monitoring of activities in the U.S. and abroad been adequate? Have the CRSP Guidelines been followed? Considering the reduced funding now available, are all of the monitoring functions justifiable or is there overlap or redundancy which could be eliminated? Have the institutions made the prescribed 25 percent contribution from non-federal funds? Has the change to accrual accounting assisted TropSoils management, made no difference or simply added an administrative burden? Does this innovation provide A.I.D. with a clearer picture of the actual funds available to carry out the objectives of TropSoils?
2. Is the CRSP meeting current A.I.D. reporting requirements? What topics should be covered in the quarterly reports?
3. Has the work to date contributed significantly toward achieving the grant objectives? Have new benchmarks been established to adjust to the reduced funding? Are there any distinctly new activities which should be considered by A.I.D. and BIFAD as part of the process of extension approval. Can project goals and objectives be obtained in programmed time frame?
4. Has the ME produced a viable global plan for the research which indicates cooperation among the participating U.S. institutions, their hosts abroad and other A.I.D. funded projects? Are the memoranda of understanding with host institutions in force and up to date? Is there a program for timely review and updating of the MOUs?
5. What evidence is available that TropSoils has contributed to strengthening of host country institutions? Are adequately trained counterparts available in the host countries? What training has been provided to expand the counterpart base? In view of budget reductions should the training focus and quantity be reduced further? What effort is being made to train technical assistants to support host country scientists? Have host country and U.S. institutional collaborators both been involved at the worksites?
6. Has this CRSP had an impact on host country and U.S. institutional research activity priorities and government policies?
7. Is the communication program being developed adequate? Can the effort be materially increased without seriously competing with the basic research of the grant? Is there a plan for information and technology dissemination and implementation to users? Are technical results published in refereed journals? Are concise summary reports issued for LDC users? Are plans being made to summarize findings for future reference and application?

-6-

8. Are there specific interdisciplinary research areas where cooperative efforts by two or more CRSPs could increase their effectiveness?
9. Describe potential contribution of this CRSP to attaining objectives of S&T/AGR guidance message and the new focus statement for the 103 account.
10. What is the relationship between TropSoils and the IARCs? Should this cooperation be maintained at the present level, augmented or reduced?
11. Is TropSoils equipped to take on additional research and technical assistance assignments when the Basic Ordering Agreement is issued?
12. Have standardized guidelines for financial reporting by subgrantees been developed? Are expenditures of funds reported on a timely basis by the subgrantees and the ME? Has the ME assumed audit responsibilities and proposed guidelines and assistance to U.S. institutions for auditing of pass through funds?
13. How cost effective is this CRSP? Can a cost benefit ratio be calculated? What evidence is there - anecdotal or analytical - to support the cost effectiveness? What is the actual or potential impact of this CRSP on U.S. Agriculture?
14. Is the present ME structure the most cost effective and efficient arrangement? Can administrative funds be reduced? Is there sufficient oversight by NCSU administrators?

#### G. BACKGROUND MATERIAL FOR TEAM

The evaluation team will be furnished the following reports and documentation prior to their site visit to Raleigh:

1. Grant Document
2. Project descriptions
3. Budgets approved for each institution or function
4. External Evaluation Panel Reports
5. Sample trip reports
6. Sample TropSoils publications
7. Sample reprints
8. The Triennial Technical Report 1981-1984
9. Technical Report 1985-1986
10. Administrative Report, 1981 - 1986
11. External Evaluation, 1986 - 1987
12. Extension Proposal and Program Plan, 1987 - 1992.
13. S&T Guidance Message and focus statement.

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## APPENDIX 1

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### H. FINAL REPORT

The Evaluation Team report which addresses the items in Section F but which may also include comments, observations and recommendations of the team members shall be submitted by November 4, 1988. If there is a substantial disagreement between the team members on any issue, each should state his personal assessment rather than seek a compromise which does not represent the true judgement of either member.

S&T/AGR/RNR:JMalcolm:5/12/88:Rev.7/22/88:Rev.10/3/88:W-9 SOWEVAL2.

## APPENDIX 2

### DOCUMENTS REVIEWED RELATING TO THE SOIL MANAGEMENT CRSP

Grant Document (A.I.D. Grant No. DAN-1311-G-SS-6018-00)

Groundworks 1 - Soil Acidity and Liming

Guidelines for Collaborative Research Support Programs Under Title XII of the International Development and Food Assistance Act of 1975, BIFAD and A.I.D., June 21, 1985

Indonesia TropSoils Plan of Work, October 1987-September 1990

ME/C. B. McCants Memoranda:

Allocation of Funds From Grant DAN-1311-G-SS-6018-00,  
11/6/86

Recommendations Related to Extension of the Soil  
Management CRSP, 2/5/88

Management Entity Response to Questions Submitted for  
Management Review of the Soil Management CRSP, 10/6/88

Process and Procedures for Responding to CRSP Funding  
Situations, 10/18/88

Background Information on Financial Reporting in  
TropSoils, 10/18/88

Student Training Under TropSoils Program, 10/19/88

TropSoils Administrative Report 1981-1986

TropSoils External Evaluation 1981-1984

TropSoils Triennial Technical Report 1981-1984

TropSoils - The First Three Years

TropSoils Administrative Report 1981-1986

TropSoils External Evaluation 1986-1987

TropSoils Extension Proposal & Program Plan 1987-1992

TropSoils Technical Report 1985-1986

TropSoils Financial Report, July 1988

TropSoils - The Potential Selective Expansion of TropSoils  
in Africa

TropSoils - Soil Management CRSP Humid Tropics/Indonesia  
TropSoils Project, 10/17/88

## APPENDIX 2

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### DOCUMENTS REVIEWED (Continued)

RISTROP Bulletin, Volume 1, Number 1, August 1988

Soil Survey of the ICRISAT Sahelian Center, Niger,  
West Africa, 1984

"Low Input Cropping for Acid Soils," (reprint from Science,  
11 Dec 1987, Vol. 238, pp. 1521-1527)

"A Strategic Plan to Address Concerns and Implement  
Recommendations of External Evaluation Panel on  
Review of TropSoils Component in Indonesia"

"Deforestation Reduction Initiative: An Imperative for World  
Sustainability in the Twenty-First Century." A paper  
presented by Professor Pedro Sanchez, NCSU, at the Bureau of  
Science & Technology, USAID, Washington, D.C., July 22, 1988.

APPENDIX 3

ITINERARY

ADMINISTRATIVE MANAGEMENT REVIEW  
OF THE  
SOIL MANAGEMENT CRSP

October 1988

16	Travel to Honolulu, Hawaii from Washington, D.C.
17-18	At the College of Agriculture and Human Resources, University of Hawaii
18	Travel to Raleigh, N.C. in late pm
19	Arrival Raleigh, N.C.
20-21	At College of Agriculture and Life Sciences, North Carolina State University
21	Return to Washington, D.C. in the late pm

Note: See attachments A & B for the schedule of  
appointments at the University of Hawaii and North  
Carolina State University.

### APPENDIX 3

## TROPISOILS ADMINISTRATIVE MANAGEMENT REVIEW UNIVERSITY OF HAWAII

(Sherman Laboratories, Conference Room 3)

Sunday, October 16: Review Panel Arrives. Accommodations  
at the Outrigger Prince Kuhio

Monday, October 17: Project Administration and Management  
AM

9:00 - 9:10 Welcome-Dean N.P. Kefford  
9:10 -10:00 Purpose of the Review-Review Panel  
10:00 -10:15 Refreshment  
10:15 -11:00 Impressions and overview of the  
TropSoils Project:  
University - Kefford  
College - M.R. Smith

11:00 -12:00 Fiscal Administration of the  
TropSoils Project  
Office of Research Administration -  
Contracts and Grants  
College of Topical Agriculture and  
Human Resources  
Research Corporation of the UH

12:00 - 1:30 LUNCH  
PM

1:30 - 3:00 Perspectives of the TropSoils Project  
Department: S.A. El-Swaify  
Project: G. Uehara

3:00 - 3:15 Refreshment  
3:15 - 4:30 Discussion session

4:30 ADJOURN

Tuesday, October 18: Project Accomplishments and Plans  
AM

8:30 - 8:45 Overview: Uehara  
8:45 -12:00 Topics to include:  
Farming Systems  
Soil Organic matter  
Agroforestry  
Soil Acidity  
Spatial Variability  
Geographical Information System  
(Refreshments available from 10 to 10:30)

12:00 -12:30 LUNCH  
PM

1:30 - 4:00 Continue discussions of  
Accomplishments and Plan of Work

4:00 ADJOURN/Departure for Raleigh, N.C.

APPENDIX 2

SCHEDULE  
FOR  
ADMINISTRATIVE REVIEW TEAM FOR TROPISOILS  
(Revised 10/17/88)

Review Team : Dr. Clarence Gray  
Dr. John Malcolm  
Dr. Fred Johnson  
Dr. John Ragland

October 19, 1988

Arrival RDU from Hawaii

Lodging: Brownstone Hotel  
1707 Hillsborough Street  
Phone 919/828-0811

October 20, 1988

- 8:00 a.m. - Pick up at hotel by Dr. C. B. McCants
- 8:30 a.m. - Dr. Durward F. Bateman, Dean, College of  
Agriculture and Life Sciences,  
112 Patterson Hall
- 9:15 a.m. - Dr. C. B. McCants, Director, Management  
Entity, 3402 Williams Hall
- 12:15 p.m. - Lunch (accompanied by Dr. C. B. McCants)
- 1:30 p.m. - Dr. J. L. Apple, Coordinator, University  
International Programs, 209 Daniels Hall
- 3:00 p.m. - Open, 3402 Williams Hall
- 4:00 p.m. - Mr. Neil Caudle, Coordinator, TropSoils  
Communication Program, 3402 Williams Hall
- 6:30 p.m. - Social and Dinner with TropSoils Board of  
Directors and others, NCSU Faculty Club

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Administrative Review Team for TropSoils  
Page 2

October 21, 1988

- 8:00 a.m. - Pick up at hotel by Dr. J. L. Apple
- 8:30 a.m. - Dr. Pedro Sanchez, Coordinator, N. C. State TropSoils Program, 3402 Williams Hall
- 11:00 a.m. - Mr. Earl Pulliam, Director of Contracts and Grants, 3402 Williams Hall
- 12:00 noon - Lunch
- 1:30 p.m. - Open

**A Strategic Plan to Address Concerns  
and Implement Recommendations of  
External Evaluation Panel Based on Review of  
TropSoils Component in Indonesia**

At the conclusion of the External Evaluation Panel review in Indonesia, and based on the panel's oral presentation of its fundamental conclusions and recommendations, steps were immediately initiated to implement a coordinated plan of action designed to correct and relieve the major concerns of the review team. This plan included steps to alleviate identified problems and to significantly improve the management of project activities in both technical and financial aspects. In addition, the plan establishes the framework for the development of a revised program design and plan of work based on previous activities in Indonesia and Hawaii. The following outline presents the various tasks involved in this plan to strategically address and monitor critical aspects of the program.

**A. Improve and expand University of Hawaii on-campus support of TropSoils activities in Indonesia.**

**Purpose:** To enhance both the quality and quantity of project management and supporting research activities at the University of Hawaii, and to implement a process for monitoring progress in both the technical and financial aspects of the program.

- Actions:**
1. Define and improve coordination of financial management activities between on-campus project management and the University fiscal management unit (RCUH).
  2. Facilitate increased and more timely communication between RCUH and the M.E. regarding fiscal management concerns.
  3. Improve programmatic support of field staff in areas of procurement, transport, inventory, travel, personnel matters, and reporting.
  4. Involve Department Chairman of Department of Agronomy and Soil Science and department staff more directly in role of program and budget design, monitoring accounts, and reporting of fiscal management information.
  5. Increase the number of University of Hawaii faculty for direct involvement in supporting research activities and project design related to TropSoils work in Indonesia (see attachment listing potential UH faculty support).
  6. Designate University of Hawaii administrator (Assistant Director, CTAHR) as responsible person for monitoring activities and progress in providing expanded on-campus support of TropSoils activities in both the technical and financial aspects.

## APPENDIX 4

### B. Strengthen the TropSoils team in Indonesia.

**Purpose:** To enhance the capability of the research team in Indonesia for collaboration with other personnel and agencies of the Government of Indonesia, Universities, and the USAID Mission, and to strengthen the team's capacity to plan, manage, and conduct research within the context of the agronomic and socioeconomic program at the site.

- Actions:**
1. Establish intensive training program to improve language proficiency of on-site team and provide means of assessing their ability to communicate in Indonesian, with non-English speaking research technicians, scientists, and farmers.
  2. Initiate field activities that provide needed team building exercises and experiences that improve the team's capability for living and working among transmigrants in the villages, and to employ a farming systems approach to soil management research.
  3. Expand efforts to collaborate with Indonesian Government research and extension staff in order to provide the critical mass of trained personnel needed to develop a broad, well-functioning team effort.
  4. Develop a detailed work plan for the TropSoils project specifying the role of all participants, including biological, physical and social scientists, an agroeconomist, and Indonesian extension staff, and defining overall team objectives and activities involved.
  5. Improve overall team capability and efficiency in communication, timely reporting, on-site fiscal management, and attending to administrative details in Indonesia.

### C. Design of Future Research Program at Sitiung

**Purpose:** To design and develop a research program and its detailed elements for future work that is based on past knowledge and experience; but which also addresses specific gaps in knowledge and expands the contributions by the Government of Indonesia.

- Actions:**
1. Incorporate research activities that assist in overcoming major obstacles to achieving profitable crop farming in upland tropical areas, especially soil infertility, acidity and uneven terrain.
  2. Provide research elements in work plan that build on previous work in Sitiung on liming and fertility, soil and water conservation, organic materials and farming management, and farming systems research.

#### APPENDIX 4

3. Develop plan of research and approach that includes participation of GOI scientists in aspects of agroecconomics, agroforestry and livestock and builds on team strength in soils, crops, and social science.
4. Include research components that involve the conduct of research with farmers in farmer's fields focusing on soils and socioeconomic constraints encountered in cultivating marginal upland soils.
5. Make provision for collecting sufficient in-field research data to permit rules and procedures to be developed so that information can be preserved and organized in expert systems for decision making at other locations in the humid tropics.
6. Insure that the future research program results in soil management packages that are transferable to other farms in other locations in the humid tropics.

5/15/87

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APPENDIX 4

University of Hawaii Faculty Research Supporting TropSoil Work

<u>Name</u>	<u>Nature of Research</u>
H. Ikawa	Soil Resource Inventory/Classification
Y. Kanahiro	Trace Element (Molybdenum)
S. Campbell	Peanut Modeling
R. Caldwell	Root Development in Acid Soil
J. Fownes	Agroforestry
J. Brewbaker	Agroforestry
M. Habte	Mycorrhizae
J. Jones	Soil Mineralogy
S. El-Swaify	Soil Erosion
R. Green	Soil Water/Physics
S. Itoga	Expert Systems
N. Hue	Aluminum-organic Matter Interactions
C.S. Tang	Aluminum-organic Matter Interactions
J. Silva	Phosphorus Modeling
K. Wilson	Farming Systems
H. McArthur	Farming Systems
P. Philipp	Farming Systems
R. Yost	Expert Systems, Project P.I.
G. Uehara	Soils Management Systems, Project P.I.

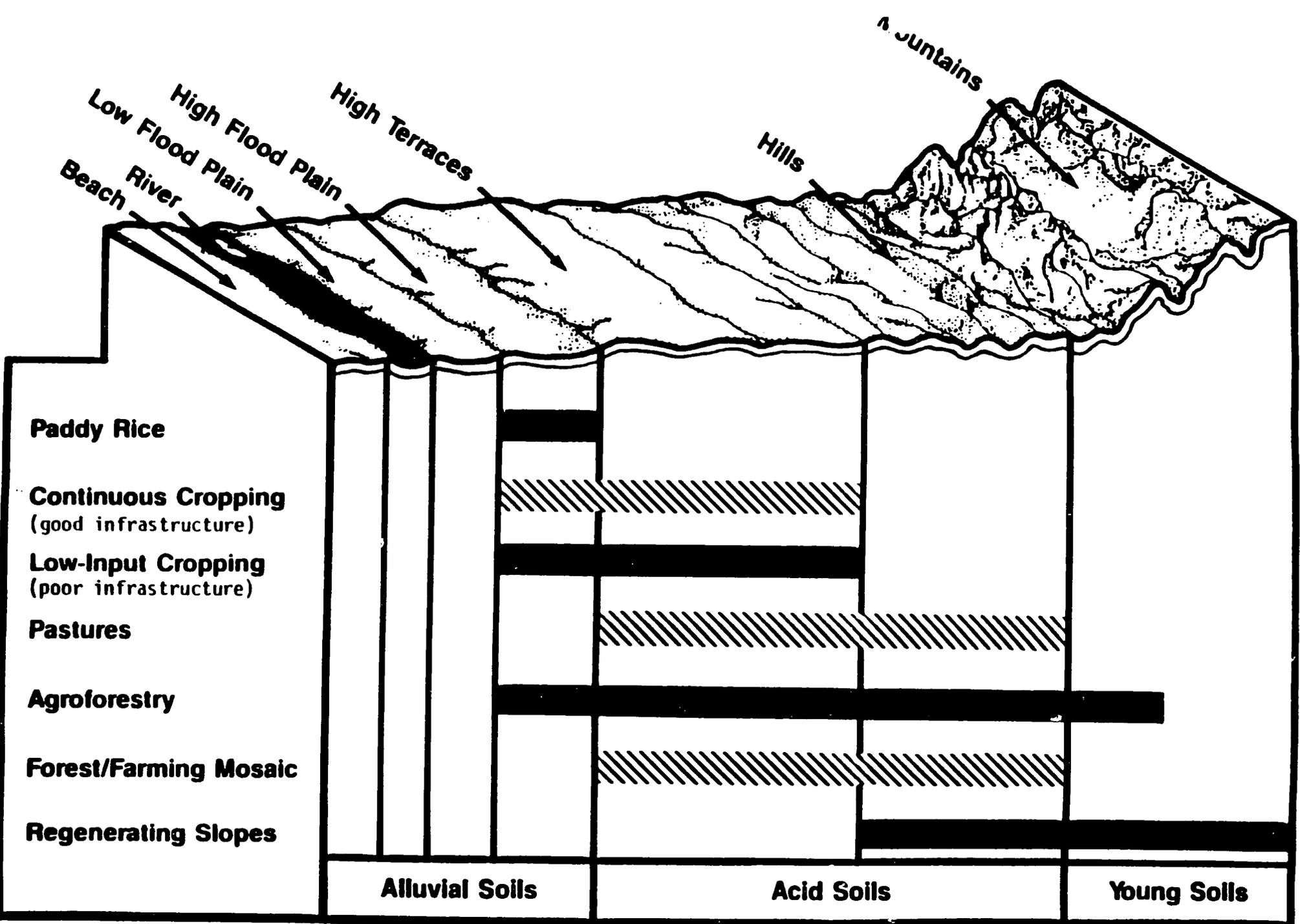


Figure 2. Some soil management options for humid tropical landscapes dominated by Oxisols and Ultisols (3).



# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7113, Raleigh 27695-7113  
(919) 737-3922

MEMORANDUM TO: Dr. E.C.A. Runge

FROM: C. B. McCants  
*C. B. McCants*

DATE: November 6, 1986

SUBJECT: Allocation of Funds From Grant DAN 1311-G-SS-6018

The subject grant provides for an estimated budget of \$3,000,000 per year for three years, (\$250,000/month), beginning September 25, 1986.

Subsequent to issuing the Grant, discussions with AID led to an agreement that permits us to use funds from the previous grant to support all components, except the Management Entity, to December 31, 1986.

Beginning January 1, 1987, obligated funding will be at the rate of \$200,900 per month for approximately four months. Thereafter it will be dependent on AID response to Congressional budget actions.

Program Coordinators need a projection on financial support for their respective programs that can be used for advance planning. Although there will be a high degree of uncertainty associated with any such estimates, a reference financial base should be provided.

Therefore, the Management Entity recommends approval of the following:

1. That a projected budget be developed for each component of the Soil Management CRSP for the period January 1, 1987-September 24, 1989 based on a total budget for that period calculated at the rate of \$200,900 per month.
2. That any deviations from this assumed rate in the allocation of funds by AID to the Management Entity be distributed proportionately among the components.
3. That considerations relative to transfer of funds among components be discussed with the Board of Directors and the External Evaluation Panel prior to any actions.

APPENDIX 6

4. That a contingency budget be provided for use by the Management Entity for program enhancement.

5. That the projected budget given in Table 1 be established.

I suggest that this subject be included on the agenda for the Board meeting on November 20-21.

CBM:ja

Attachment

cc: Dr. J. L. Apple  
Dr. John L. Malcolm  
Program Coordinators

APPENDIX C

Table 1: Projected Budgets for Components of the Soil Management CRSP, January 1, 1987-September 24, 1989

Component	<u>1/1/87-9/30/87<sup>1</sup></u>		<u>1/1/87-9/24/89</u>	
	\$	%	\$	%
	x 1000		x 1000	
Cornell	237	13	1128	17
Hawaii	335	18	1128	17
NCSU	508	28	1724	26
TAMU	380	21	1392	21
ME	348	20	1128	17
Contingent	0	0	130	2
<b>TOTAL</b>	<b>1808<sup>2</sup></b>	<b>100</b>	<b>6630<sup>3</sup></b>	<b>100</b>

=====  
<sup>1</sup>From: "Projects and Budgets for the Soil Management CRSP, 1986-87"

<sup>2</sup>\$200,900/mo x 9 months = \$1,808,000

<sup>3</sup>\$200,900/mo x 33 months = \$6,630,000



# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7117, Raleigh 27695-7117  
(919) 737-3922

October 18, 1988

## MEMORANDUM

To: AID Management Review Team

From: C. B. McCants *C.B. McCants*

Subject: Process and Procedures for Responding  
to CRSP Funding Situations

The manner in which decisions are made on the allocation to participating universities of funds provided by AID to support the Soil Management CRSP is both simple and complex. The Director of the Management Entity submits recommendations to the Board of Directors for a response which is used to make the final decision. The guidelines used by the Management Entity are based on 1) historical precedence, 2) comments from the EEP, 3) comments by individual Program Coordinators, 4) comments by individual Board members, 5) personal knowledge, 6) perceived priorities, and 7) subjective judgement.

The basis and procedure for determining funding allocations have been undergoing a slow transition for the past four years with the ultimate goal of decreasing the responsibility of the Director of the Management Entity in the final decision making actions and shifting more decision-making actions to the Board of Directors.

A summary of major points involved in funding allocations since the beginning of the SM-CRSP follows:

1. The initial grant which funded the program, beginning on September 25, 1981, contained a detailed funding schedule, which is given in Table 1. Key features were:
  - a. Amount for each component was prescribed.
  - b. The percentage of funds to a given institution was variable.
  - c. Highest total funding to NCSU.
  - d. Lowest total funding to Cornell.
  - e. Higher percentage of the funds to NCSU in first two years with a decline thereafter.

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f. Increase in percentage of funds to Hawaii and Texas A&M after about two years and stable thereafter.

2. All funding allocations from 1981 to 1985 were determined by applying the formula in Table 1 to the funds provided by AID.

3. By 1984 it was evident that Hawaii was not using the funds at the rate provided and that Cornell had capacity and personnel available to utilize more funds than was being provided. The situation continued into 1985 as evidenced by the following data:

Component	% of Total	
	Budget <sup>1</sup>	Expenditures <sup>2</sup>
Cornell	6.1	5.8
Hawaii	21.3	15.6
NCSU	40.0	43.5
TAMU	22.5	24.9
Mgt. Office	10.1	10.2
<hr/>		
<sup>1</sup> Total budget:	\$8,706,000	
<sup>2</sup> Total expenditure:	\$8,089,647	

4. For the remainder of the two-year period under the initial grant, funds were provided basically on demonstrated need and available basis. (Later evidence showed that Hawaii had not reported expenditures at the rate incurred, due to internal management factors; actual expenditures were close to the budgeted amount.)

5. Reduction in funding mandated in January, 1986, by the Gramm-Rudman action did not have an immediate effect on the SM-CRSP.

a. We were still in the expanding stage and adjustments could be made without major impact.

b. We had sufficient funds in reserve to serve as an adequate buffer.

6. Program actions were initiated in 1986 to bring the projected budget, starting with the new grant, to the anticipated level of \$200,900 per month.

7. A detailed document "Projects and Budgets for the Soil Management CRSP" was prepared by the Management Entity based on a) Program Coordinators request, b) EEP comments, and c) ME analysis; the document was submitted to the Board for action at its November, 1986 meeting. See attached memo of November 6, 1986; copy of document available on request.

8. During the 1986 Board meeting, we were advised that a further reduction, to \$175,000 per month, would be made.

It was applied by the Management Entity essentially across the board to all the SM-CRSP programs.

9. During 1987, the Management Entity undertook a number of initiatives in search of a non-formula method for allocating funds. The primary approach was based on the development of individual projects, rating the projects and funding decisions based on the priority of the projects in the rating scheme. There was little support for the approach.

10. In a February 5, 1988, memorandum (copy included here), the Management Entity recommended to the Board the funding formula given in the accompanying table. It is the basis for the most recent allocations.

11. Questions have been raised frequently during the current year on the justification for the amount and percentage of the budget that is expended by the Management Entity. "TropSoils Financial Report," July 1988 provides a detailed listing of actual and projected expenditures to 1989 by the various activities in the SM-CRSP. A copy was included in the documents sent to the Panel on October 11.

12. In the July 27, 1988, memorandum to the Board which accompanied the TropSoils Financial Report (copy included here), the following were included:

"I encourage the Board to become more involved in the decision on the allocation of grant funds and particularly in the initial stages of the budgeting process for the next funding period. The historical procedure of limiting its participation to verbal reactions to Management Entity recommendations will not serve the best interest for TropSoils of the future.

I recommend that the next Board meeting include an agenda item on the budgetary process. Particular attention is needed on the kinds of information you need to properly exercise this responsibility and a process for prioritizing research projects. The Management Office can obtain and organize the information for your analysis and recommendations."

CBM:lle

Enclosures

## APPENDIX 7

Table 1. Scheduled Distribution of AID Funds Among Components of TropSoils (from Grant Document).

Component	Funding Period					
	09/25/81 01/24/82	01/25/82 01/24/83	01/25/83 03/24/84	03/25/84 06/24/85	06/25/85 09/24/86	09/25/81 09/24/86
	Dollars x 1000					
Cornell Univ.	50	100	150	200	200	700
Univ. of Hawaii	150	400	790	890	890	3,120
Texas A&M Univ.	150	430	810	960	1,000	3,350
N.C. State Univ.	300	900	950	1,050	1,100	4,300
Management Entity	100	270	300	300	310	1,280
Total	<u>750</u>	<u>2,100</u>	<u>3,000</u>	<u>3,400</u>	<u>3,500</u>	<u>12,750</u>
	Percent					
Cornell Univ.	6.67	4.76	5.00	5.88	5.71	5.49
Univ. of Hawaii	20.00	19.05	26.33	26.18	25.43	24.47
Texas A&M Univ.	20.00	20.47	27.00	28.24	28.57	26.27
N.C. State Univ.	40.00	42.86	31.67	30.88	31.43	33.73
Management Entity	13.33	12.86	10.00	8.82	8.86	10.04
Total	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>



# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7113, Raleigh 27695-7113  
(919) 737-3922

MEMORANDUM TO: Dr. R. H. Miller  
Dr. E.C.A. Runge  
Dr. M. R. Smith  
Dr. R. J. Wagenet

FROM: C. B. McCants  
*C B McCants*

DATE: July 27, 1988

SUBJECT: TropSoils Financial Report

Enclosed is a copy of "TropSoils Financial Report" which covers the period of funding under the second grant, September 25, 1986 - April 17, 1989. Summary and detailed data are included on expenditures and budgets for the Management Office subaccounts and summary data on the subgrantee accounts.

Financial data on expenditures under the first grant, September 24, 1981 - December 31, 1986 are given in "TropSoils Administrative Report, 1981-1986," a copy of which was sent to you recently. If another one is needed, please let me know.

While all components of the Soil Management CRSP have responsibilities for efficient and effective use of the funds provided, the Management Office should be subject to the highest level of accountability. This is so because of its influence on the allocation of grant funds and the impact of its decisions on overall program operations. You're encouraged to review the details of expenditures through the various activities supported from the Management Office account and to ask for additional information and explanations where they can be helpful in your analysis.

I encourage the Board to become more involved in the decision on the allocation of grant funds and particularly in the initial stages of the budgeting process for the next funding period. The historical procedure of limiting its participation to verbal reactions to Management Entity recommendations will not serve the best interest for TropSoils of the future.

I recommend that the next Board meeting include an agenda item on the budgetary process. Particular attention is needed on the kinds of information you need to properly exercise this

APPENDIX 3

responsibility and a process for prioritizing research projects. The Management Office can obtain and organize the information for your analysis and recommendations.

CBM:ja

cc: Dr. J. L. Apple  
Program Coordinators  
Dr. John Malcolm



# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7011, Raleigh 27695-7011  
0919 737-1922

October 19, 1988

## MEMORANDUM

To: AID Management Review Team

From: C. B. McCants

Subject: *C. B. McCants*  
Student Training Under the TropSoils Program

For the period 1981-1986, the following summary of the training under the TropSoils program is applicable:

### A. Personnel in Degree Programs

B.S.	3
M.S.	24
Ph.D.	<u>46</u>
Total	73

### B. Personnel in Post Doctoral Programs

Total	6
-------	---

### C. Countries Represented

Argentina	Kenya
Belgium	Netherlands
Brazil	New Zealand
Cameroon	Nicaragua
Canada	Republic of China
Colombia	Peru
Costa Rica	Senegal
Dominican Republic	South Africa
Fiji	United Kingdom
Finland	United States
Indonesia	Venezuela
	West Germany

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APPENDIX 9

Memorandum to AID Management Review Team  
October 19, 1988  
Page 2

Currently, there are 37 students enrolled in degree related programs. A summary of their identity, programs and sources of funding is included with this memorandum.

Recruitment of new students into the program has decreased to less than half of that which occurred during the peak years of 1985-1986; this action is due entirely to funding reductions. The effect of current policy will be quite apparent in a summary prepared a year from now.

CBM:lle

Enclosures

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**TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988**

Cornell University

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Cahn, Michael D.	USA	Ph.D.	June 1988	Sept. 1990	Brazil	S-4	CRSP
Carsky, Robert J.	USA	Ph.D.	Sept. 1985	Jan. 1989	Brazil	S-4	CRSP
Costa, Francisco J.	Brazil	Ph.D.	Jan. 1988	Sept. 1990	Brazil	S-4	NSFB 90%; CRSP 10%
McIntyre, Beverly D.	USA	Ph.D.	Sept. 1988	Jan. 1991	Brazil	S-4, A-3	CRSP
Motavalli, Peter P.	USA	Ph.D.	June 1984	Jan. 1989	Brazil	S-4	CRSP
Osmond, Deanna	USA	Ph.D.	Sept. 1987	Sept. 1989	Ithaca, Raleigh	S-4, A-3	CRSP
Rodriguez, Gustavo	Brazil	M.S.	Sept. 1988	Sept. 1990	Ithaca	S-4, A-3	EMBRAPA 90%; CRSP 10%

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

NSFD = National Science Foundation of Brazil

EMBRAPA = Empresa Brasileira de Pesquisa Agropecuaria

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**TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988**

University of Hawaii

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Dierolf, Thomas S.	USA	Ph.D.	Sept. 1986	1991	Indonesia	S-2	CRSP
Evensen, Carl I.	USA	Ph.D.	Jan. 1984	1988	Indonesia	S-4	CRSP 75%; OTHER 25%
Hansen, James W.	USA	M.S.	Feb. 1986	1988	Hawaii	S-3	CRSP 75%; OTHER 25%
Istiqlal, Amien	Indonesia	Ph.D.	Aug. 1985	1989	Indonesia	S-2	OTHER
Kilham, Phoebe	USA	Ph.D.	Feb. 1986	1991	Hawaii	A-2	CRSP
Schultz, Janet	USA	M.S.	Aug. 1986	1988	Hawaii	S-6	OTHER

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

**TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988**

North Carolina State University

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Ara, Miguel A.	Peru	Ph.D.	Sept. 1982	May 1989	Peru	S-4	CRSP
Elsenbeer, Helmut	Germany	Ph.D.	Sept. 1983	Dec. 1988	Peru	S-1	CRSP
Davelouis, Jose	Peru	Ph.D.	Sept. 1984	Dec. 1989	Peru	S-4	USAID/Lima
Subagyo, H.	Indonesia	Ph.D.	Sept. 1984	Dec. 1988	Indonesia	S-5	IADS World Bank
Melgar, Ricardo	Argentina	Ph.D.	Sept. 1985	Dec. 1989	Brazil	S-4	IADS
Uribe, Eduardo	Colombia	Ph.D.	Sept. 1985	Dec. 1990	Peru	S-4	CRSP
Fernandes, Erick	Kenya	Ph.D.	Jan. 1986	Dec. 1990	Peru	S-6	CRSP
Castilla, Carlos	Colombia	Ph.D.	Sept. 1986	Dec. 1990	Peru	S-4	CRSP

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

CONACYT = Consejo Nacional de Ciencia y Tecnologia

URA = University Research Assistantship Minority Grant

NCARS = North Carolina Agricultural Research Service

IADS = Interamerican Development Bank

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**TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988**

North Carolina State University

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Fontes, Marisa	Brazil	Ph.D.	Sept. 1986	Dec. 1990	Raleigh	S-2	CEPLAC
Fahmuddin, Agus	Indonesia	M.S.	Sept. 1986	May 1988	Raleigh	S-1	CRSP
Luna, Pedro	Mexico	Ph.D.	Sept. 1987	Dec. 1991	Peru	S-4	CONACYT
Williams, Marcia	Jamaica	Ph.D.	Sept. 1987	May 1990	Raleigh	S-4	URA
Groshgall, Brett	USA	M.S.	Sept. 1988	May 1991	Raleigh	S-4	NCARS

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

CONACYT = Consejo Nacional de Ciencia y Tecnologia

URA = University Research Assistantship Minority Grant

NCARS = North Carolina Agricultural Research Service

IADS = Interamerican Development Bank

1981

TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988

Texas A&M University

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Davis-Rainey, Jessica	USA	Ph.D.	Jan. 1985	May 1989	Niger	S-4	CRSP
Doumbia, Mamadou	Mali	M.S.	June 1985	Dec. 1988	Mali	S-4	CRSP
Heilman, Justine	USA	M.S.	Sept. 1988	Dec. 1991	Niger	S-4	TAMU
Long, Steve	USA	M.S.	Jan. 1986	May 1989	Niger	S-6	CRSP 80%; TAMU 20%
Ouattara, Mamadou	Niger	Ph.D.	Aug. 1986	Dec. 1989	Niger	S-5, S-6	USAID/Niger 90%; CRSP 10%
Payne, William Albert	USA	Ph.D.	Dec. 1986	Dec. 1989	Lubbock	S-2, S-4	TAES 80%; CRSP 20%
Pfordresher, Anne	USA	M.S.	May 1986	Dec. 1988	C.S./Niger	S-6	CRSP 70%; TAMU 30%

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

TAMU = Texas A&M University

TAES = Texas Agricultural Experiment Station

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**TropSoils Personnel Engaged In Academic Degree-Oriented Programs  
October 1988**

Texas A&M University

Name Last, First, Middle	Country of Citizenship	Degree Program	Initiation Date	Completion Date <sup>1</sup>	Research Location <sup>2</sup>	Research Category <sup>3</sup>	Source(s) of Financial Support <sup>4</sup>
Sow, Abdoul	Mali	M.S.	May 1987	Dec. 1989	Lubbock	S-2, S-4	ICRISAT
Takow, Julius	Cameroon	Ph.D.	Aug. 1987	Dec. 1990	College Station	S-4	USAID/Cameroon
Zaongo, Christophe	Burkina Faso	M.S.	May 1984	Dec. 1988	Niger	S-6	CRSP

<sup>1</sup>Actual or projected.

<sup>2</sup>Site of the major portion of the research for the thesis.

<sup>3</sup>Use SSSA division numbers where possible, e.g., S-1, S-2, S-3 etc. Use other designations where necessary.

<sup>4</sup>Give approximate percent of support from each source.

CRSP = Collaborative Research Support Program

ICRISAT = International Crops Research Institute for the Semi-Arid Tropics

TAMU = Texas A&M University

TAES = Texas Agricultural Experiment Station



# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7113, Raleigh 27695-7113  
(919) 737-3922

MEMORANDUM TO: Dr. E. C. A. Runge  
Dr. R. H. Miller  
Dr. M. R. Smith  
Dr. R. J. Wagenet

FROM: C. B. McCants  
*C. B. McCants*

DATE: February 5, 1988

SUBJECT: Recommendations Related to Extension of the  
Soil Management CRSP

In preparing to develop a draft of the proposal for extension of the Soil Management CRSP, which you requested during the Atlanta meeting, I have met or had discussions with the research faculty, Program Coordinator and Board representative from each participating university. In addition there have been telephone conversations with the External Evaluation Panel and the AID Program Manager, Dr. John Malcolm. These contacts have led to the following conclusions.

1. There is very little support for a project by project anonymous peer review across all programs.
2. The preferred approach is for reviews of individual projects to be conducted by participants within a university's program.
3. Individual or collective opinions regarding the strengths and weaknesses of a given university program should be communicated to the Director of the Management Entity and used by him in discussions with the Program Coordinator.
4. There is widespread concern on the apparent weaknesses of the University of Hawaii program. The absence of the Program Coordinator at the Atlanta review and the paucity of information provided in the presentations had a negative impact on the analysis of the program.
5. There are serious questions on the justification for posting two CRSP-funded senior scientists in Brazil and the merits of giving this level of priority to the use of CRSP funds.

6. The greatest deficiency of technical information within TropSoils is useful methods to improve soil management in the semi arid tropics.

7. A major concern of AID/Washington is the absence of suitable documents to communicate our technical knowledge to its primary user audiences.

8. Texas A & M has solved most of its personnel and administrative problems at the primary research site and has employed a campus-based senior scientist to serve as Program Coordinator.

9. There are some disagreements with the current formula for distributing funds to components in the CRSP, but no agreement on an acceptable alternative.

10. The best estimate is that future funding from AID will remain at the current level, \$173,780 per month.

From this analysis, and other considerations, the following recommendations are made:

1. That we establish an identified and adequately-funded Communications program to serve the CRSP. The current Editor would have responsibilities comparable to those of a Program Coordinator.

2. That the formula used for allocation of funds on April 23, 1987 be used as the quantitative basis for developing formulae for future funding.

3. That each university and the Management Office's relative portion of the budget be reduced one percent, effective April 15, 1988, and these funds added to the Communications budget. (See Table 1)

4. That the Cornell University and University of Hawaii budgets be reduced further by one and two percent respectively, effective January 1, 1989 (See Table 1) and the Management Office budget be reduced one percent effective October 1, 1989. (See Table 1).

5. That the Texas A & M budget be increased three percent effective January, 1989. (See Table 1)

6. That the External Evaluation Panel conduct a comprehensive review of the University of Hawaii program in early 1989 and the proposed funding for that program be evaluated further in light of the report of this review.

7. That the funding levels given in Table 2 be used as the basis for submitting the extension proposal to AID.<sup>1</sup>

8. The funding levels in Table 2 are the sum of the allocation that would be made through amendments to the subgrant, plus "supplementary funding" from the contingency fund. Specific details on the "supplementary funding" are provided to the respective Program Coordinator.

9. That each Program Coordinator be requested to submit to the Management Entity by March 1, a revision of its five-year program plan, which would start in October 1987 and conform to the funding estimates in Table 2.

10. That a draft of the program extension proposal be submitted to the Board for review, comments and recommendations and that a special meeting of the Board, be held, if necessary to resolve major issues.

A written response to the analysis and recommendations is requested.

CBM:ja

Enclosures

cc: Program Coordinators  
Dr. John L. Malcolm  
Dr. J. L. Apple  
External Evaluation Panel

<sup>1</sup>The budget included in the extension proposal submitted to AID must conform to the grant year, which is October thru September. Funding from AID and percent allocation to each component are uneven during the period covered by the proposal. Copies of the detailed budget worksheets are available on request.

North Carolina State University, as the Management Entity, exercised its authorization to charge overhead on subgrants issued to other universities. Dr. Lawrence Apple was successful in negotiations to keep the amount to the minimum, \$10,500 each for Cornell, Hawaii and Texas A & M. The University has already debited each of these subgrants for this amount. The Management Office will add to each subgrant an equivalent amount from the Contingency fund to offset this charge.

Table 1. Recommended Funding Formula for the Soil Management CRSP

January 1, 1987 - September, 1992

Component	Time Period					
	Jan 1987 Apr 1988 <sup>1</sup>	Apr 1988 Dec 1988	Jan 1989 Sept 1989	Oct 1989 <sup>2</sup> Sept 1990	Oct 1990 <sup>2</sup> Sept 1991	Oct 1991 <sup>2</sup> Sept 1992
	Percent of Available Funds					
Cornell	17.2	16.2	15.0	15.0	15.0	15.0
Hawaii	17.2	16.2	14.0	14.0	14.0	14.0
N. C. State	24.8	23.8	23.8	23.8	23.8	23.8
Texas A & M	21.0	20.0	23.8	23.8	23.8	23.8
Communications	2.2	7.2	7.2	7.2	7.2	7.2
Mgmt. Office	15.0	14.0	14.0	13.0	13.0	13.0
Contingency	2.6	2.6	2.2	3.2	3.2	3.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup>Currently in effect

<sup>2</sup>Subject to revision following External Evaluation Panel review

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Table 2. Recommended Funding for the Soil Management CRSP

January 1, 1987 - September, 1992

Component	Time Period					
	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6
	Jan 1987 Sept 1987 <sup>1</sup>	Oct 1987 Sept 1988	Oct 1988 Sept 1989	Oct 1989 <sup>2</sup> Sept 1990	Oct 1990 <sup>2</sup> Sept 1991	Oct 1991 <sup>2</sup> Sept 1992
	Dollars					
Cornell	272,600	351,700	319,100	312,800	312,800	312,800
Hawaii	278,600 <sup>3</sup>	352,500 <sup>4</sup>	303,400	291,900	291,900	291,900
N. C. State	399,800 <sup>5</sup>	522,400 <sup>6</sup>	514,000 <sup>7</sup>	496,300	496,300	496,300
Texas A & M	332,800	431,500	476,500	496,300	496,300	496,300
Communications	34,900	94,000	150,000	150,000	150,000	151,000
Mgmt. Office	237,700	305,500	291,900	271,100	271,100	271,100
Contingency	28,500	42,900 <sup>8</sup>	30,500	67,000	67,000	67,000
<b>Total</b>	<b>1,584,900</b>	<b>2,100,500</b>	<b>2,085,400</b>	<b>2,085,400</b>	<b>2,085,400</b>	<b>2,085,400</b>

<sup>1</sup>Currently in effect

<sup>2</sup>Subject to revision following External Evaluation Panel review

<sup>3</sup>Includes \$5963 of supplementary funding from Contingency

<sup>4</sup>Includes \$818 of supplementary funding from Contingency

<sup>5</sup>Includes \$6711 of supplementary funding from Contingency

<sup>6</sup>Includes \$11,000 of supplementary funding from Contingency

<sup>7</sup>Includes \$17,700 of supplementary funding from Contingency

<sup>8</sup>\$31,500 will be used to pay overhead charges by North Carolina State University (the Management Entity) on subgrants to Cornell, Hawaii and Texas A & M

ACTION  
COPY

UNCLASSIFIED  
Department of State

INCOMING  
TELEGRAM

PAGE 01 BAHAKO 02976 050900Z 4806 054960 AID9981  
ACTION AID-00

BAHAKO 02976 050900Z 4806 054960 AID9981  
MOISTURE MANAGEMENT.

ACTION OFFICE STAG-02  
INFO AFFW-04 AFDP-06 AFTR-05 AAAF-03 SAST-01 ES-01 CIFA-01  
AAPF-01 SEOP-01 SEOS-02 FPA-02 SERP-01 RELO-01  
/031 A1 WFO8

7. WE ARE IN THE PROCESS OF DEVELOPPING AN AGRICULTURAL RESEARCH SUPPORT PROJECT. PID DESIGN WILL BEGIN IN EARLY MAY. WE WILL STRONGLY CONSIDER INVOLVING TROPISOILS IN PROJECT IMPLEMENTATION, PROVIDING PROJECT RESEARCH ACTIVITIES FALL WITHIN THE MANDATE OF TROPISOILS.

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8. FOR AN EFFICIENT PLANNING OF THE RESEARCH ACTIVITIES, WE SUGGEST THAT TRAVEL OF U.S. SCIENTISTS TO MALI BE PLANNED IN JANUARY OR FEBRUARY TO ASSIST THE MALIAN SCIENTISTS IN ANALYZING DATA AND WRITING TECHNICAL REPORTS, AND IN PLANNING FUTURE RESEARCH ACTIVITIES. ALL RESEARCH ACTIVITIES, INCLUDING THE CRSP PROJECTS, ARE REVIEWED AND APPROVED AT THE TECHNICAL COMMISSION. THEREFORE, INPUT FROM U.S. SCIENTISTS ON PROGRAMMING/ PLANNING FOR COMING YEAR WILL HAVE TO BE INCORPORATED INTO THE PLAN PRIOR TO THE TECHNICAL MEETING IN MARCH OR APRIL. ADDITIONAL VISITS DURING THE YEAR SHOULD BE PROGRAMMED WITH EACH MALIAN SCIENTIST DURING THE VISIT IN JANUARY/FEBRUARY.  
PRINGLE

R 050855Z MAY 69  
FM AMEMBASSY BAHAKO  
TO SECSTATE WASHDC 9527

*RNR*

UNCLAS BAHAKO 02976

AIDAC

FOR JOHN MALCOLM, AID/ST/AR/RHR

E.O. 12356: N/A  
SUBJECT: AID/ST/AGR/RNR - TROPISOILS EVALUATION

REF: STATE 116581

1. PER REFTEL, TROPISOILS IS ADDRESSING MAJOR SOIL MANAGEMENT PROBLEMS IN MALI. IT HAS CHARACTERIZED PHYSICALLY AND CHEMICALLY THE DIFFERENT TYPE OF SOILS OF CINZANA RESEARCH STATION. THIS IS IMPORTANT FOR THE MANAGEMENT OF THE RESEARCH STATION. ANOTHER CRITICAL PROBLEM WHICH HAS BEEN IDENTIFIED BY TROPISOILS IS SOIL TOXICITY. RESEARCH IS BEING CONDUCTED TO DETERMINE THE FACTORS CAUSING TOXICITY AT THE CINZANA STATION. IN TERMS OF BROAD SCOPE ACTIVITIES TROPISOILS HAS INITIATED CULTURAL PRACTICE TRIALS FOR WATER/MOISTURE CONSERVATION AND TRIALS TO ESTIMATE THE RUN-OFF WATER QUANTITY AND ITS EFFECT ON THE SOIL.

2. THE TROPISOILS RESEARCH COMPLEMENTS THE USAID PROGRAM IN THAT, IT IS THE ONLY PROGRAM WITHIN BOTH USAID AGRICULTURAL RESEARCH PORTFOLIO AND THE GRM RESEARCH INSTITUTION (IER) INITIATING RESEARCH ON SOIL/WATER MANAGEMENT FOR RAINFED CROPS E.G. MILLET-SORGHUM.

3. WHEN USAID REQUESTS INFORMATION FROM TROPISOILS, IT IS BRIEFED ADEQUATELY BY THE IN-COUNTRY TROPISOILS SCIENTIST.

4. SO FAR, THE MANAGEMENT ENTITY HAS ALWAYS INFORMED USAID/BAHAKO AND IER IN A FULL AND TIMELY MANNER ABOUT TROPISOILS RELATED ACTIVITIES IN MALI.

5. FOR THE SCALE OF TROPISOILS RESEARCH ACTIVITIES IN MALI TO DATE, STAFFING AND PARTICIPATION OF CAMPUS BASED SCIENTISTS ARE SUFFICIENT TO ASSURE GOOD RESEARCH. HOWEVER, FOR TROPISOILS TO EXPAND ITS ACTIVITIES IN MALI, THE MALI TROPISOILS COORDINATOR MAY NEED ADDITIONAL TRAINING AND MORE QUALIFIED STAFF.

6. MALI HAS CRITICAL SOIL MANAGEMENT PROBLEMS WHICH ARE NOT YET ADDRESSED BY TROPISOILS. THE FOLLOWING ARE SOME RESEARCH DOMAINS:

- WATER AND WIND EROSION PREVENTION IN GENERAL. DISCUSSIONS ARE UNDERWAY BETWEEN TROPISOILS AND THE FARMING SYSTEMS RESEARCH/EXTENSION PROJECT (FSR/E) TO CONTRACT WITH A TROPISOILS EROSION SPECIALIST TO SURVEY WATER AND WIND EROSION PROBLEMS IN THE FSR/E ZONES;

- SOIL FERTILITY MANAGEMENT THROUGH AGRO-FORESTRY RESEARCH AND IMPROVED MANURE MANAGEMENT; AND

- THE INTERACTION OF SOIL FERTILITY RECLAMATION AND SOIL

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02 ACTION AID-00

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04 ACTION OFFICE STAG-02

05 INFO AFFW-04 AFPD-04 AFTR-05 AAAF-03 BIFA-01 SAST-01 ES-01

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08 INFO LOG-00 AF-00 /000 W

09 -----137040 061351Z /38

10 R 060905Z JUN 89

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12 TO SECSTATE WASHDC 1846

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14 UNCLAS NIAMEY 04846

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16 AIDAC

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18 FOR JOHN MALCOLM, AID/ST/AGR/RNR

19

20 E.O. 12356: N/A

21 TAGS:

22 SUBJECT: AID/ST/AGR/RNR - TROP SOILS EVALUATION

23

24 REF: A. STATE 174764; B. STATE 116581

25

26 1. USAID/NIGER IS PLEASED TO PROVIDE ANSWERS AS  
27 REQUESTED IN REFTEL, FOLLOWING LETTER FORMAT.

28

29 A. IN NIGER, TROP SOILS IS ADDRESSING MAJOR SOIL  
30 MANAGEMENT PROBLEMS, INCLUDING MICRONUTRIENT  
31 AVAILABILITY, WIND AND WATER EROSION CONTROL AND DOING A  
32 SOILS RESOURCE INVENTORY.

33

34 B. THE THEME OF THE TROP SOILS CENTRAL PROJECT IN NIGER  
35 IS "THE INTEGRATED MANAGEMENT OF AGRICULTURAL WATERSHEDS  
36 (IMAW)". THIS IS AN INTEGRATED APPROACH AIMED AT  
37 ADDRESSING ISSUES OF LAND MANAGEMENT FOR SUSTAINABLE  
38 AGRICULTURAL PRODUCTION. USAID/NIGER IS IMPLEMENTING A  
39 MAJOR NATURAL RESOURCES MANAGEMENT (NRM) INTERVENTION  
40 UNDER THE AGRICULTURE SECTOR DEVELOPMENT GRANT TO BEGIN  
41 IN FY 89. THE TROP SOILS ACTIVITY IS A COMPLEMENT TO  
42 THIS NRM INTERVENTION AND WILL PROVIDE USEFUL DATA FOR  
43 FUTURE USAID/NIGER NRM PROGRAMS. IMAW ALSO COMPLEMENTS  
44 ACTIVITIES SUPPORTED UNDER THE NIGER APPLIED  
45 AGRICULTURAL RESEARCH PROJECT WHICH PROMOTES THE  
46 INSTITUTIONAL DEVELOPMENT OF NIGER'S AGRICULTURAL

47

01 RESEARCH PROGRAM.

02

03 C. THE TROPISOILS SENIOR RESEARCH SCIENTIST KEEPS IN  
04 CONSTANT CONTACT WITH THE PROJECT OFFICER AND THE  
05 SUPERVISOR OF THE AGRICULTURAL DEVELOPMENT OFFICE OF  
06 USAID/NIGER TO DISCUSS TECHNICAL AND ADMINISTRATIVE  
07 ISSUES PERTAINING TO THE PROGRAM.

08

09 D. WITH THE TROPISOILS SENIOR RESEARCH SCIENTIST ACTING  
10 AS THE ADMINISTRATIVE LINK BETWEEN THE MANAGEMENT ENTITY  
11 AND USAID, INFORMATION HAS FREELY FLOWED BETWEEN THE TWO  
12 ENTITIES. THE TROPISOILS COORDINATOR AT TAMU HAS ALSO  
13 ACTED AS CONSTANT LIAISON BETWEEN USAID AND THE  
14 MANAGEMENT ENTITY ON ISSUES SUCH AS PERSONNEL, RESEARCH  
15 THEMES, HOST COUNTRY COLLABORATION AND BUDGETS.

16

17 E. THE IN-COUNTRY TROPISOILS SCIENTISTS ENJOY THE  
18 SUPPORT OF A TECHNICAL BACKSTOPPING TEAM MADE UP OF:

19

20 1. PROGRAM COORDINATOR

21 2. PROGRAM MANAGER

22 3. 4 SENIOR RESEARCH SCIENTISTS

23 4. OTHER SENIOR SCIENTISTS WHO ARE CONSULTED ON PROJECT  
24 - TO PROJECT BASIS.

25

26 ALL THESE SCIENTISTS PARTICIPATE ACTIVELY IN THE  
27 PLANNING, EXECUTION AND EVALUATION OF THE RESEARCH. TO  
28 DATE, NO PROBLEMS HAVE BEEN ENCOUNTERED IN RELATION TO  
29 CAMPUS BASED SCIENTISTS.

30

31 F. TROPISOILS IS WORKING AS AN INTEGRAL PART AND HAS  
32 GOOD RELATIONS WITH THE NIGERIEN AGRICULTURAL RESEARCH  
33 INSTITUTE (INRAN). DUE TO THEIR STRONG WORKING  
34 RELATIONSHIP, THEY ARE ADDRESSING THE CRITICAL SOIL  
35 MANAGEMENT PROBLEMS DIRECTLY. USAID/NIGER WOULD LIKE TO  
36 CONTINUE WITH ASSISTANCE THROUGH THE BASIC ORDERING  
37 AGREEMENT. SALOOM

38

39

40

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FM AMEMBASSY LIMA  
TO SECSTATE WASHDC 8300

UNCLAS LIMA 06919

AIDAC

FOR: JOHN MALCOLM ST/AR/RNR

E.O. 12356: N/A

SUBJECT: AID/ST/AGR/RNR - TROPISOILS EVALUATION.

REF: STATE 116581

1. THE PURPOSE OF THIS CABLE IS TO RESPOND TO THE QUESTIONS OUTLINED IN REF CABLE REGARDING EVALUATION OF THE TROPISOILS CRSP. MISSION DISCUSSED TROPISOILS-CRSP PERFORMANCE AND QUESTIONS WITH STAFF FROM THE GENERAL DIRECTORATE FOR SOIL MANAGEMENT OF THE NATIONAL AGRICULTURE AND AGRO-INDUSTRIAL RESEARCH INSTITUTE (INIAA), THE OVERALL COUNTERPART INSTITUTION FOR TROPISOIL-CRSP ACTIVITIES IN PERU. INIAA IS HIGHLY SUPPORTIVE OF THE PERU TROPISOIL-CRSP ACTIVITIES.

2. FOLLOWING ARE THE RESPONSES KEYED TO CABLE QUESTIONS:

A. THE TROPISOILS PROGRAM IS ADDRESSING MAJOR TROPICAL, ACID AND INFERTILE SOIL MANAGEMENT PROBLEMS. THE TROPISOILS PROGRAM PROVIDES A SERIES OF MANAGEMENT OPTIONS THAT COVER THE MAJOR SOIL GROUPS ENCOUNTERED IN THE HUMID TROPICS, IN RELATION TO THEIR LANDSCAPE POSITIONS AND SOCIO-ECONOMIC CONDITION OF THE FARMERS. THESE OPTIONS ARE; LOW-INPUT CROPPING, CONTINUOUS CULTIVATION, AGROFORESTRY, LEGUME-BASED PASTURES, PADDY-RICE PRODUCTION AND RECLAMATION OF STEEPLANDS.

B. THE TROPISOILS RESEARCH PROGRAM COMPLEMENTS OTHER USAID SUPPORTED AGRICULTURAL PROJECTS. THE TROPISOILS FINDINGS PROVIDE SUPPORT TO USAID AGRICULTURAL PROJECTS IN PERU, PARTICULARLY THE AGRICULTURAL TECHNOLOGY TRANSFORMATION AND CENTRAL SELVA RESOURCE MANAGEMENT II PROJECTS.

C. TROPISOILS SCIENTISTS HAVE KEPT THE MISSION WELL INFORMED OF EXPERIMENTAL RESULTS, TRAINING WORKSHOPS AND OTHER PERTINENT INFORMATION. THIS HAS ALLOWED THE MISSION TO INTEGRATE TROPISOILS INTO OTHER USAID AGRICULTURAL PROJECTS.

D. TROPISOILS MANAGEMENT ENTITY HAS KEPT USAID AND HOST GOVERNMENT WELL INFORMED. THE GOOD COMMUNICATION PERMITTED THE HOST GOVERNMENT TO GENERATE NEW CROP PRODUCTION PROJECTS AND TO IDENTIFY SPECIFIC SOIL AND CROP PRODUCTION PROBLEMS. THE TROPISOILS PROGRAM IS DEVELOPING NEW TECHNOLOGY TO IMPROVE SUSTAINABLE CROP PRODUCTION THROUGH SOIL MANAGEMENT OF TROPICAL REGIONS. THE TROPISOILS PROGRAM ALSO IS INCREASING, THROUGH THE TRAINING OF RESEARCHERS AND COLLABORATIVE RESEARCH ACTIVITIES, THE RESEARCH CAPABILITIES OF INVESTIGATORS IN PERUVIAN RESEARCH INSTITUTIONS AND UNIVERSITIES. TROPISOILS ACTIVITIES ARE ALSO LARGELY RESPONSIBLE FOR THE ESTABLISHMENT OF A SOIL CONSERVATION PROGRAM IN INIAA.

E. FUNDING CUTS HAVE REDUCED PERMANENT FOLLOW UP AND PARTICIPATION OF CAMPUS BASED SCIENTISTS IN COLLATERAL RESEARCH SUBJECTS, HOWEVER THE PRINCIPAL INVESTIGATORS ARE MAKING GREAT EFFORTS TO ASSURE GOOD QUALITY RESEARCH.

F. THE TROPISOILS PROGRAM IS ADDRESSING MOST OF THE CRITICAL SOIL MANAGEMENT PROBLEMS FOR TROPICAL SOILS. THE TROPISOILS PROGRAM RESEARCH FOCUS IS ON LOW-INPUT CROPPING SYSTEMS, CONTINUOUS CROPPING SYSTEMS, AGROFORESTRY SYSTEMS, LEGUME-BASED PASTURES RECLAMATION OF STEEPLANDS, COMPARATIVE SOIL DYNAMICS AND SOIL CHARACTERIZATION AND INTERPRETATION.

THE USAID MISSION/PERU IS VERY MUCH INTERESTED IN RECEIVING ASSISTANCE FROM TROPISOILS COLLABORATORS THROUGH BASIC ORDERING AGREEMENTS, DIRECT CONTRACTS OR GRANTS, BUT NO FUNDS ARE ACTUALLY AVAILABLE.

G. THE MISSION WOULD APPRECIATE COMPLETE INFORMATION FROM WASHINGTON REGARDING FINANCIAL EXPENDITURES OF THE TROPISOILS-CRSP IN PERU ON A SEMI ANNUAL BASIS (APRIL 01 AND SEPTEMBER 30). THIS INFORMATION WILL ASSIST THE MISSION IN MONITORING THE PROJECT AND UNDERSTANDING PL 480 LOCAL CURRENCY REQUIREMENTS. WATSON

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ADM AID FOR JOHN MALCOLM, ST/AGR/RNR

E. O. 12356 : N/A

SUBJECT: AID/ST/AGR/RNR - TROPISOILS EVALUATION

REF.: UNCLAS STATE 116581

RESPONSES TO REFTEL PARA 2 ARE AS FOLLOWS:

A. ACID SOILS ARE A MAJOR SOIL MANAGEMENT PROBLEM IN INDONESIA. TROPISOILS CRSP IS ADDRESSING PROBLEMS OF ONE ACID SOIL TYPOLOGY IN AREA OF SITIUNG, WEST SUMATRA. ADDITIONAL ACID SOILS TYPOLOGY IN OTHER INDONESIAN AREAS NEED TO BE STUDIED.

B. IN ADDRESSING ACID SOILS PROBLEMS TROPISOILS RESEARCH IS SUPPLEMENTING THE USAID PROGRAM FOCUSED ON IMPROVING AGRONOMIC EFFICIENCIES IN UPLAND FOODCROPS PRODUCTION SYSTEMS AND INCREASING FARMERS' INCOME.

C. YES, GENERALLY.

D. YES

E. RESEARCH RESULTS ARE CONSIDERED SATISFACTORY. HOWEVER, MORE FREQUENT VISITS OF CAMPUS BASED SCIENTISTS WOULD ENHANCE RESEARCH ACTIVITIES.

F. OTHER CRITICAL SOIL MANAGEMENT PROBLEMS ARE ACID SOILS OF OTHER TYPOLOGIES, SOIL AND WATER MANAGEMENT OF SEMI-ARID REGIONS OF EASTERN INDONESIA, AND PEAT SOILS FOUND IN TIDAL AND SWAMP AREAS.

G. MISSION GREATLY APPRECIATES THE SELFLESS DEDICATION AND PROFESSIONALISM SHOWN BY THE TROPISOILS SCIENTISTS WHO HAVE BEEN ASSIGNED TO THE REMOTE WEST SUMATRAN RESEARCH SITE OF SITIUNG. THEIR CONSISTENTLY HIGH QUALITY PERFORMANCE UNDER OFTEN CHALLENGING CIRCUMSTANCES IS TO BE COMMENDED.

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DRAFTED BY: AID/ST/AGR: JMALCOLM: DLM: 6853G  
APPROVED BY: AID/ST/AGR: DBATHRICK  
AID/ST/AGR/RNR: T. GILL (DRAFT) AID/AFR/TR/ARD: L WERLIN (PHONE)  
AID/LAC/DR/RO: S. WINGERT (PHONE) AID/LAC/SA: S. OLDS (PHONE)  
AID/AFR/SWA: N. MCKAY (PHONE) AID/ANE/TR/ANR: C. MORGAN (PHONE)  
AID/ANE/EA: K. BROWN (PHONE)

RNR

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R 140850Z APR 89  
FM SECSTATE WASHDC  
TO AMEMBASSY BAHAMA  
AMEMBASSY BRASILIA  
AMEMBASSY JAKARTA  
AMEMBASSY LIMA  
AMEMBASSY NIAMEY

UNCLAS STATE 116581

ADM AID

E. O. 12356: N/A

TAGS:

SUBJECT: AID/ST/AGR/RNR - TROPISOILS EVALUATION

THE SOIL MANAGEMENT - CRSP - TROPISOILS IS DUE FOR AN EXTENSION. MISSION ASSESSMENT IS DESIRED PRIOR TO RENEWAL OF THE GRANT. IT WOULD BE VERY HELPFUL IF EACH HOST MISSION WOULD COMMENT ON THE FOLLOWING POINTS:

- A. IS TROPISOILS ADDRESSING MAJOR SOIL MANAGEMENT PROBLEMS?
- B. DOES THE TROPISOILS RESEARCH COMPLEMENT THE USAID PROGRAM?
- C. HAVE THE INCOUNTRY TROPISOILS SCIENTIST BRIEFED USAID ADEQUATELY?
- D. HAS THE MANAGEMENT ENTITY INFORMED USAID AND HOST GOVERNMENT IN A FULL AND TIMELY MANNER?
- E. RECOGNIZING THAT TROPISOILS HAS BEEN SEVERELY HAMPERED BY FUNDING CUTS, IS STAFFING AND PARTICIPATION OF CAMPUS BASED SCIENTISTS SUFFICIENT TO ASSURE GOOD RESEARCH?
- F. ARE THERE CRITICAL SOIL MANAGEMENT PROBLEMS IN YOUR COUNTRY NOT BEING ADDRESSED BY TROPISOILS? ARE YOU INTERESTED IN ASSISTANCE FROM TROPISOILS COLLABORATORS THROUGH THE BASIC ORDERING AGREEMENT OR THROUGH A DIRECT CONTRACT OR GRANT?
- G. ADDITIONAL OBSERVATIONS OR COMMENTS WILL BE WELCOMED.

PLEASE ADDRESS REPLIES ATTENTION JOHN MALCOLM,  
AID/ST/AR/RNR. BAKER

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