PD-AAG-241

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

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7. PROJECT TITLE (Maximum 40 characters): Soil Management Support Service

8. ESTIMATED FY OF PROJECT COMPLETION: FY 82

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 79; B. QUARTER 4; C. FINAL FY 81 (Enter 1, 2, 3, or 4)

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 -)

A. FUNDING SOURCE	FIRST FY 79 B. FX	C. L/C	D. TOTAL	LIFE OF PROJECT E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	607	-	607	2,127	-	2,127
(GRANT)	(607)	(-)	(607)	(2,127)	(-)	(2,127)
(LOAN)	( )	( )	( )	( )	( )	(
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY						
OTHER DONOR(S)						
TOTALS	607	-	607	2,127	-	2,127

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. 1ST FY 79 F. GRANT	G. LOAN	H. 2ND FY 80 I. GRANT	J. LOAN	K. 3RD FY 81 L. GRANT	M. LOAN
(1) FN	149I	090	-	607	-	720	-	800	-
(2)									
(3)									
(4)									
			TOTALS	607	-	720	-	800	-

A. APPROPRIATION	N. 4TH FY 82 O. GRANT	P. LOAN	Q. 5TH FY 83 R. GRANT	S. LOAN	LIFE OF PROJECT T. GRANT	U. LOAN
(1) FN	0	-	0	-	2,127	-
(2)						
(3)						
(4)						
TOTALS	0	-	0	-	2,127	-

12. IN-DEPTH EVALUATION SCHEDULE: MM 10, YY 81

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 (1 = NO, 2 = YES)

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE

TITLE: Dr. Dean F. Peterson
Director, DS/AGR

Dean F. Peterson

DATE SIGNED: MM 8, DD 14, YY 79

15. DATE DOCUMENT RECEIVED IN AID/W OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM, DD, YY

AID 1330-4 (3-78)

PROJECT STATEMENT

Soil Management Support Services Program

(Project # 931-1229.11)

DS/AGR/TSWM

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ROJECT STATEMENT

I. Project Summary

A. Statistical

Title - Soil Management Support Services Program
(#931-1229.11)

New or Extension:	New
Contractor:	U.S. Department of Agriculture Soil Conservation Service (SCS) Washington, D.C. 20013
Principal Investigators:	Not determined
Duration:	Three Years
Total Estimated Cost	FY 79 - 607 FY 80 - 720 FY 81 - 800
Project Monitor:	Dr. T.S. Gill, DS/AGR/TSWM

B. Descriptive

Less than half of the roughly 2 billion hectares of the potentially arable land in the tropics is currently under cultivation. In view of present trends of population growth, the world soil resources will have to be utilized more intensively and extensively in the future. This will encourage methods of land use that are not only more exploitive but also more destructive than in the past.

To accelerate the wise development of LDC land resources for agriculture and other uses requires detailed knowledge of soils and their potentials. Unfortunately individual LDCs have neither sufficient qualified personnel nor financial resources to acquire this knowledge on their own soils. Compounding this problem is the fact that until recently there has been no common soil classification system used internationally. Different countries have been using numerous and different soil classification systems, thereby preventing the exchange of soil research information (usually acquired at high expense) from one country to another even though their soils may be the same or very similar. A common and universal soil classification system has been in much need to serve as an international language for information exchange and technology transfer between countries, especially the LDCs.

This project will speed up technological transfer of improved crop cultural practices through soil science which will help reverse and reduce the process of depletion and degradation of LDCs land resources of small farmers for increased food production. The project will be focused worldwide. A coordinated technical assistance and basic support service in Soil Taxonomy will catalyze systematically field operation activities for efficient management of soils in LDCs.

Technical assistance will be provided to AID and LDCs on TDY basis. This will include problem identification, program development, evaluation, problem solving etc in the subject areas of soil survey, land use, land use planning, soil conservation and soil fertility maintenance. Equal emphasis will be placed on improving the Soil Taxonomy for use in the tropical areas. This will provide a cost effective means to share knowledge of demonstrated agronomic responses and is needed because technology in disciplines related to food production changes so rapidly and at so many different places it is becoming impractical for all politcal subdivisions to undertake experiments to solve each problem as it arises. The strain on available LDC resources— people, time, land and money— too often overcomes the ability to respond effectively and efficiently to national demands.

Because of extensive resources and competence in the subject area of soil management this project will be implemented by the Soil Conservation Service (SCS) of USDA. SCS has excellent working relationship with national and international agencies and institutions. SCS is the author of Soil Taxonomy and is well equiped to correct the deficiencies of its soil classification system for the tropical regions.

Initially this project will be approved for three years. Future extensions will be conditioned by its usefulness to AID and LDCs.

(.l Management Support Service
Project #931-1229.11

Cooperative Agreement Between AID and SCS-USDA

I. Justification:

A. Background

The world can feed its people and many more. A recent and optimistic estimate of the carrying capacity of the world is 40 billion people (Revelle, 1976). Unfortunately the performance so far has been less than reassuring. Dudal (1978) gives figures to show that in the 20-year period, 1957-1977, the area of arable land in the world increased by 135 million hectares, which is about 10 percent or less of the land still available to be brought into cultivation and an increase of only about 9 percent of land already in agricultural use. The world's population increased by 40 percent during the same period.

Food production from the increased arable land is enough to feed only one-third of the increased population. The food required to feed the other two-thirds has come from more intensive use of existing lands. Most of the increase occured in the developed world and not in the countries where most of the additional people live. "The additional production resulting from extension of cultivated lands in developing countries is lagging far behind that required by the increase in population". (Dudal, 1978).

The need to produce more from existing or new lands means more efficient use of soils. So too does the larger need of economic development within which the production of food must take place. Roads, dams, canals, fertilizer plants, distribution centers, and market towns must all be built, and all these put demands upon the soil. And soils can be destroyed if not wisely used.

Consideration must be give to constraints to the wise use, management and conservation of soils. The recent United Nations Conference on Desertification gave many examples of soil misuse and stressed the need to consider the long-term effects of development upon soil. In this sense, all soil characteristics are potential constraints in that intensified use of soil may lead eventually to deterioration in soil quality.

The Technical Advisory Committee (TAC) to the Consultative Group on International Agricultural Research (CGIAR) recently suggested (TAC 1979) that several aspects of soil science warrant international support and lists the following:

(i) Soil and water management research within the programs of the International Agricultural Research Centers (IARC's) as relevant to the Center's program in crop improvement and farming systems.

(ii) Correlation of national soil inventories to overcome the site-specificity problem of soils research

(iii) Use of benchmark soil sites and the need for soil, plant, and water studies upon them.

(iv) Improving and maintaining the potential of infertile tropical soils with low inputs.

(v) Principles and methods of soil conservation, particularly in semi-arid and arid zones.

(vi) Soils research closely related to improved water management, particularly for major schemes or for irrigating problem soils and

(vii) in Africa south of the Sahara and in much of Latin America where irrigated areas are relatively small, concentration also within the context of farming systems research on rainfed farming in semi-arid and semi-humid savanna areas, where seasonal water-deficit and seasonal waterlogging are both problems.

B. Subject Areas of Attention

1. Soil fertility and plant nutrition.

Intensification of food production in the tropics will need large input of N, P, and K fertilizers and their more efficient use. Much research is needed, but most of it should be done by or through national efforts. Methodologies are well understood, governments are aware of the need, and the fertilizer producers are able and willing to help. Substantial work at the international level is already underway or planned by FAO, IFDC, and the IARCs.

Strengthening of national programs, training of scientists, and improving research quality and methods are the best uses for bilateral assistance.

2. Soil survey and classification.

Survey and classification is the essential basis of for the wise use and management of soils. About one-fifth of the world's soils have been surveyed, with the highest percentage in Europe and the lowest in Africa (Dudal, 1978). There is a substantial need for more surveys, particularly of first and second order, and for the greater use of remote-sensing techniques for higher-order smaller-scale surveys where these do not already exist.

Much of this work can, indeed must, be done through national efforts. Methods are well-known and essentially standardized throughout the developing world through effective assistance by FAO. Governments are generally aware of the needs, and some provide sufficient and substantial resources for the work. Development agencies usually require soil or land surveys as part of area development projects, and are willing to pay for them. International assistance is mainly needed to strengthen national efforts, to train staff, and assist in the improvement of quality.

An adequate international soil classification, "Soil Taxonomy," now exists as a result of an impressive 25-year effort by the United States Soil Conservation Service and cooperators throughout the world. Improvements in soil correlation to ensure accuracy in soil survey and classification require international effort and funding. Studies are needed to improve the usefulness and accuracy of Soil Taxonomy with respect to tropical soils. The research is best done in the tropical countries where the problems exist, but it will need international support. Changes in Soil Taxonomy require international effort and agreement.

3. Soil erosion and conservation.

The tendencies for soils to erode and the need for conservation are obvious constraints to all-out food production. There has been in recent years substantial emphasis on the seriousness of soil erosion in the tropics, but not much sound and useful research has been done (Greenland and Lal, 1977) and the work is expensive, complex, and multidisciplinary in nature. A significant bilateral and internationally funded effort is required to supplement the effort that nations can make for themselves. Furthermore, there are often international implications to soil erosion, i.e., the effects of soil erosion or conservation in one country may have direct effects upon soil productivity in another.

4. Soil management.

The term is used to cover many type of activities aimed at improving soil productivity or increasing crop production on specific soils. It includes the management of special types of soils, such as soils for rice or soils with special problems like waterlogging or salinity.

A substantial research effort is being made by national programs, often with bilateral or multilateral assistance. International effort is needed to devise more efficient multidisciplinary methodologies, to train national research workers, and to devise techniques to decrease the site specificity of the research.

Not enough is being done to relate crop performance to permanent soil characteristics. "The lack of knowledge of soil requirements for specific crops is seriously limiting interpretation of soil surveys" (Dudal, 1978).

5. Soil-survey interpretations and land classification

Although an adequate national input is being or can be made into soil survey and classification, this is not so for soil-survey interpretation and land classification. An understanding of soil potentials and limitations is essential to good land-use planning for food production and economic development and for the wise use of soils. Soil-survey interpretation and land classification, like soil management are approaches towards a holistic understanding of soils.

The requirements for effective soil-survey interpretation for agricultural development are known (Swindale, 1977), but there is hardly any work in the tropics on the methodology and validity of soil-survey interpretation and there is insufficient government awareness of its importance. The soil fertility capability classification by Buol et a. (1975), and the interpretations for rubber penninsular Malaysia by Chan (1978), are noteworthy exceptions. A major international effort is needed and is possible. The Benchmark Soils projects of the Universities of Hawaii and Puerto Rico are pioneering efforts which demonstrate what can and needs to be done. (Contracts: AID/ta-C-1108 and AID/ta-C-1158).

C. Analysis of the Needs:

The analysis of soil related bottleneck problems of previous Sections (A) and (B) suggests that bilateral and international efforts should be placed in the following type of activities: i) strengthening national programs-training, improved quality ii) creating government awareness iii) problem identification iv) developing efficient methodologies that supersede national boundries v) creating conditions for transfer of techuology and developing communication network and vi) coordinating international efforts.

Coordination is needed first, because agricultural studies are costly and the creation of a sufficiently large national effort is often beyond the resources of developing countries, secondly, so that knowledge building can proceed at widely different locations, and thirdly, to help harness the substantial reservoir of talents and facilities for soil studies in developed countries (Kelly, 1974).

More specifically for AID, involvement should target at such points where the program acts as a leading catalyst, keeps a low profile and makes most effiecient use of U.S. resources and investiments. The areas of involvement are identified (under-lined) in previous section (B-1, B-2, B-3, B-4 and B-5). For the sake of simplicity these can be grouped into to components:

(a) Technical assistance and (b) Technology transfer mechanism.

Re(a): Technical Assistance: There is an urgent need to provide technical assistance to LDCs in the various components of mangement of soils of the tropics. The need can be measured both in terms of actual and anticipated. Dozens of instances of request for help to AID/W from LDCs and USAIDs can be mentioned. Fulfilling such requests have been hard and time consuming on the part of AID and LDCs.

Lack in timeliness, quality or amount of available help at any given time has often created serious roadblocks in efficient and effective programming, let alone where these have put donor and recepient relationship in a jeopardy.

During the past decade or so AID has sponsored a dozen of international soil management workshops; a number of soil research projects in Latin America, Asia and Africa; two dozen publications, two quarterly newletters and world wide contacts via U.S. Institutions(211-d). These activities have stimulated

a great deal of awareness in LDCs about the problems and potential of their soils. Expert guidance on the management of these soils for food production remains unfulfilled in many LDCs. The LDCs are convinced that their most pressing need is the adaptation, delivery and utilization of the known technology on soil management.

This feeling has been expressed over and over again by the LDC planners and scientists during various international meetings. This suggest potential need for technical assistance.

The response of USAIDs to Collaborative Research Support Program (CRSP) - soil management planning grant inquiry was highly revealing. About half a dozen of the missions could not even react or respond to the telegram. They indicated lack of LDCs capabilities. Another half a dozen suggested that their countries had insufficient land resources evaluation and soil classification. About a dozen and a half indicated problems of soil fertility, soil erosion, salinity and drainage. The rest indicated that their countries had all the soil management problems one can think of. This revalation suggests a vacuum in leadership in many LDCs in the the area of land use and land use planning as well as in technical and operational assistance for a large number of soil related programs.

Re (b): Technology Transfer Mechanism

Traditionally, soil surveys have been used to provide an inventory and qualitative appraisal of soil resources and are recognized as key elements in land use planning. As a consequence such surveys have been and are conducted in many developing countries at considerable expense. Yet, frequently the practical value of the resulting soil maps is questionable. This may be due to insufficient analytical data for the mapping units, inadequate systems of soil classification, or both. Soil surveys with these inherent deficiencies are of limited agricultural value as they cannot be interpreted for purposes of crop production at a reasonable level or reliability. Conversely, a well-conceived, quantitative system of soil classification appropriately applied in soil surveys can be a powerful tool in agricultural development because it facilitates the evaluation of soil potential, the prediction of soil behavior and the extrapolation of soil management experience.

As evidenced by a recent bibliography of the soils of the tropics (Orvedal, 1975, 1977 and 1978) and a review of soils research in tropical America (Sanchez, 1972), the aggregate knowledge of tropical soils is substantial. But this knowledge is distributed unequally among tropical countries and often lacking where it is needed most. Unfortunately many LDC's have neither sufficient competent personnel nor financial resources to acquire adequate knowledge about their own soils. On the other hand, as pointed out by FAO (FAO-Unesco, 1974), with the considerable amount of knowledge and experience gained in the management and development of different soils throughout the tropics, the hardship perpetuated in some areas by methods of trial and error is no longer justified. However, the transfer of experience from one area to another has usually been prevented by the seemingly insoluble problem of comparing one soil with another, and of describing it in such a way that people in other countries can recognize it.

With the advent of a new comprehensive system of soil classification developed mainly by the Soil Conservation Service of the USDA, it appears that this obstacle can be effectively removed. After more than twenty-five years of research and preparation, the new system called "Soil Taxonomy" was published in 1975 (Soil Survey Staff, 1975) and disseminated worldwide. Soil Taxonomy is the most detailed, quantitative and comprehensive system of soil classification developed to-date and constitutes a condensed statement of existing knowledge about soils and their potentials. Although scientific in logic, structure and nomenclature, it was conceived to serve practical needs and "at each step the all-important question was asked, Do these grouping permit use to make precise predictions of soil behavior?" (Soil Survey Staff, 1975). Soil Taxonomy is gradually becoming the internationally accepted reference system in which the same soils receive the same names everywhere. Moreover, it is now used in may LDC's of the tropics, particularly in Latin America and Southeast Asisa, either in lieu of, or parallel to, indigenous schemes of soil classification.

Soil Taxonomy, however, was developed primarily for the soil of the United States and therefore has deficiencies with regard to tropical soils. As acknowledged by the authors of the system, the classification of tropical soils is incomplete and the established taxa need more testing at an international scale. These inadequacies must be corrected so that Soil Taxonomy conforms better to tropical conditions and thus will become a yet more effective vehicle for agrotechnology transfer in the tropics.

One of the key objective of DS/AGR's "Soil Management" cluster (#0401) is to find short cuts to speed up the LDC agricultural development process for increased food production on soils now in use for crops as well as on currently unused soils although they are potentially arable. Towards this objective DS/AGR has two major research projects on agro-technology transference, based on Soil Taxonomy, and which involve coordinated crop/soil experiments in Asia, Africa and Latin America.

In June 1977, a two-week International Soil Classification Workshop was organized in Brazil by the University of Puerto Rico under "Tropical Soils" 211(d) grant #931-0128.11. Twenty-four of the world's foremost soil scientists met in Rio de Janeiro and then conducted field trips throughout the country in order to examine the applicability of, and to change and refine, "Soil Taxonomy" classifications in context of tropical soils of Latin America. During August/September 1978 a second two-week International Soil Classification was organized in Malaysia/Thailand by the University of Puerto Rico under grant AID/DSAN-G-003. Host country and other institutions collaborated with the University of Puerto Rico in the organization and conduct of these two workshops.

Each of the workshop was attended by an exceptional group of renowned soil scientists (pedologists) representing multinational institutions, universities and government agencies from all over the world and enjoyed the active participation of a large number of soil scientists from the host countries. These workshops were considered extremely successful and productive, and as a Malaysian workshop participant explained it, "... provided an excellent opportunity for our young soil scientist to meet and discuss soil classification,

management etc. with some of the greatest soil scientists in the world...". Some of the comments from other participants are noted below:

> ———it is not possible to develop the agricultural potential of the Third World by trial and error, there is not enough time left to do so. Transfer of knowledege——is necessary. ——a wise decision for U.S.-AID——for improving Soil Taxonomy-(Netherland).
>
> ———Soil Taxonomy———a most potent force for accelerating wise development of land resources in LDCs.——know of no other system——see it as a matter of high priority——gratifying to know——agency (AID)——appreciates the value——exciting practical implications-(New Zealand)
>
> ———was able to work out proposals for cooperative efforts between EMBRAPA (Brazil) and IITA based on taxonomic similarity between the soils-(Nigeria)
>
> ———Soil Taxonomy is the most significant development in Soil Science to occur in the last half century——an American product we can sell with pride on an international scale.(Hawaii, USA)

International Agricultural Research Centers are becoming very much interested in Soil Taxonomy as a vehicle to transfer crops technology to and within LDCs. IRRI and ICRISAT have made public statements in support of establishing international benchmark sites based on Soil Taxonomy.

Indonesia, the Philippines, Thailand Malaysia and Brazil have indicated using Soil Taxonomy to guide setting up their experiment stations and development policies.

All this suggests that it is imperative that AID help set-up a mechanism to make necessary improvements in Soil Taxonomy to accomodate tropical soil situations. An improved Soil Taxonomy will lay foundation for cooperative agricultural program among nations and institutions. It will provide a common language to communicate information - avoiding duplication of efforts site-specific studies and thus expediting development in LDCs.

II. Project Description

A. Goal:

Increased food production and conservation of soil resources in LDCs.

B. Purpose:

To provide (a) field support assistance to AID and LDCs on soil management programs and (b) a mechanism to improve Soil Taxonomy for the tropical and subtropical regions.

C. Objectives

(a) Technical Assistance

Provide technical assistance personnel to AID and LDCs to assist national staffs in problem identification, evaluation of opportunites and development of new ideas in the subject area of soil survey, land use, land use planning and soil conservation.

(b) Technology Transfer

1. Improve the U.S. system of soil classification, the Soil Taxonomy, to make it more applicable and acceptable to tropical and subtropical countries, thus enhancing its value as a vehicle for effective agrotechnology transference.

2. Encourage and motivate the use of the Soil Taxonomy in tropical and subtropical LDC's for the benefit of international communication and knowledge transfer, and

3. Document the philosophy and key concepts of the Soil Taxonomy in order to provide its users with a rational basis for comprehending its logic.

D. Scope of Work

(a) Technical Assistance

To provide "at request", TDY assistance upto six weeks for AID and LDCs in the subject areas that are directly related to the field of soil management technology and the agrotechnology transfer methodology. There is no limit to this request at any given time. At this time this project will provide a total of 24 person months for these services. If experience suggests a need for additional services, DS/AGR will attempt to obtain increased assistance by amending the contract.

The tasks to be undertaken under this agreement include the following:

1. Provide professional expertise to AID in formulating appropriate broad policies and programs relating to problems in land use, and land use planning for food production in the LDC's.

2. Give professional technical assistance to countries on matters concerning soil surveys and soil conservation.

3. Participate in reviews or evaluations of proposed or ongoing projects in soil survey and soil conservation.

4. Organize seminars and training programs in LDC's to meet program needs.

5. Provide specific analytical and/or field testing services to the field.

6. Prepare publications on selected aspects of soil management as they affect land use and land use planning in LDC's.

(b) Technology Transfer

The Soil Taxonomy has several deficiences relative to tropical soils. Moisture regimes in tropical areas are different from those in most of the United States and are in need of modifications. Low cation activity of Alfisols and Ultisols is another property of many tropical soils that need to be given consideration in the classification of soils. The soil requirements of many tropical crops have not yet been fully considered in some of the criteria used for classifying soils in the Soil Taxonomy.

Much of this information is however, available in records of universities and experiment stations and through the knowledge of the many soil scientists that are or have been working in these countries. This proposal will collect this information, organize it within the frame work of the Soil Taxonomy, develop concepts of classes and criteria for separating classes and through consultation with soil scientists in tropical countries test these concepts and criteria before they are finally made a part of the Soil Taxonomy. This is essentially the same way through which the Soil Taxonomy has evolved in U.S.A.

Formal procedures for updating the Soil Taxonomy (SCS, National Soils Handbook, 1977, (Attachment 1) provide for international committees to update the Soil Taxonomy. Presently 4 such committees (Attachment 2) involving about 200 leading soil scientists from more than 20 countries are interested in this work. A typical committee report is shown in Attachment 3. Committees will be dissolved as their objective are reached and new committees will be formed as new problems are identified.

The project proposed here will evaluate, coordinate the work of these committees, as well as minor proposals for amending the Soil Taxonomy proposed by individuals or national committees, finalize proposals and make the proposal an integral part of the Soil Taxonomy.

This work will be carried out through the following 3 activities:

1. <u>International Soil Classification and Correlation Staff</u> - The staff will work closely with the Director, Soil Survey Classification and Correlation Division, SCS. The function of this staff will be to coordinate revisions to the Soil Taxonomy with the goal of making it more applicable and more acceptable to tropical and subtropical countries. Highly competent soil scientists with broad experience will encourage the use of the Soil Taxonomy and will document revisions and prepare them for publication in a suitable mode. Specific functions include:

c. Establish and give guidance to international committees dealing with certain facets of the Soil Taxonomy.

d. Provide limited onsite assistance in the use of the Soil Taxonomy. Provide technical support in soil classification to scientist who are involved in the soil survey projects.

e. Organize and coordinate international workshops for improving the Soil Taxonomy.

f. Publish News Letters to inform committee members of any activit for improving the Soil Taxonomy.

g. Maintain a comprehensive file of proposals for updating the Soil Taxonomy and of supporting documentation.

2. Research Soil Scientist and the National Soil Survey Laboratory, SCS.

The soil scientist will work closely with the International Soil Correlation staff and the staff of the National Soil Survey Laboratory to pro vide for coordination and quality control in the uniform application of soil classification standards. The staff of the NSSL is available to develop methods and to assist in sampling and characterization of soils in inter-tropical areas. Specific functions include:

a. Verify analytical procedures and analytical results established by cooperating laboratories for use in soil classification.

b. Develop methods needed for characterizing soils in intertropical arears.

c. Perform analyses needed to define new taxa if sophisticated laboratory facilities are not available in the countries where these soils occur.

d. Maintain a data bank of representative samples of taxa from intertropical areas.

3. Framework for International Workshops on Soil Classification.

The objective of these workshops is to bring soil scientists together to solve deficiencies in the Soil Taxonomy. Usually, the workshops are scheduled at a critical period in the deliberation of an international committee as described before.

The format of the workshops will be three to four days of conference sessions and a maximum of ten days of field trips. The papers to be presented during the conference sessions will relate to the topic mentioned above. Key soil profiles exemplifying the issues under study will be inspected in the field.

Participation in the workshop will be by invitation only. A total of about twenty-five participatns will receive travel and per diem expenses from funds of the proposed grant. These participants will include internationally recognized experts in the classification of tropical and subtropical soils. Other participants, not supported with grant funds, will include local LDC soil scientists and interested officials.

In support of this activity, the International Soil Correlation and Classification staff will:

a. Organize meetings of international leaders in soil classification.
b. Evaluate results of these meetings.
c. Publish proceedings of meetings.
d. Incorporate results into the Soil Taxonomy.

E. Expertise Required

(a) Technical Assistance

Short-term experts will be provided as required, to meet specialized requests from overseas Missions, AID/W, Regional Bureaus and the TSWM Division. The Senior Program Monitor of the TSWM Division will notify contractor of the nature of TDY requirements. Areas of expertise for the short-term experts will include the following:

1. Soil Survey Quality Control: Evaluations of the need for and project design of soil surveys in countries. Evaluate ongoing soil surveys in countries. Evaluate existing soil surveys to determine their usefulness as data bases for various projects.

2. Soil Conservation: Evaluate major conservation needs for developing countries.

3. Soil Survey Investigations: Assist LDC's in setting up soil survey laboratories. Evaluate laboratory procedures. Participate in soil sampling activities. Perform analyses as requested by countries.

4. Soil Erosion Control and Water Management: Evaluate erosion problems in each country. Provide guidelines for planning soil erosion control based on soil survey data. Create an awareness of the need for such planning. Design pilot programs for LDC decision makers and small farmers.

5. Soil Taxonomy: This speciality area includes field workshops and training sessions in the use of Soil Taxonomy in LDC's for agro-technology transference.

6. Soil Fertility: This speciality area includes helping create soil fertility awareness, soil testing laboratories, soil fertility interpretation and farmer oriented extension services.

7. Soil Resource Inventory: This area includes appraisal, use and standardization of soil resources inventory. Design statistical studies to provide data on distribution and extent of prime farmland, potential cropland, wetlands, etc.

8. Land Use Planning: Create an awareness of the need to use soils according to their potential and limitations. Evaluate land use patterns and recommend shifts where needed in each country.

9. Training: Develop training packages in seminars by involving LDC personnel. Packages developed by 20 persons, for example, can be used to train 200 persons in each LDC.

10. Project Evaluation: Statistical methods and mathematical models can be used to evaluate projects for LDC's.

(b) Technology Transfer

Provide a Director of International Soil Classification and a secretary located in Washington, D.C., a research soil scientist located at the National Soil Survey Laboratory, Lincoln, Nebraska, and 1 1/4 of a man-year of TDY personnel to support the project. The soil scientists assigned to this project will be highly competent professionals with broad experience. Their areas of expertise will include:

1. Soil Classification and Correlation. This area includes the application of the Soil Taxonomy to the design of map units.

2. Soil Survey Interpretations. This area includes relating crop requirments to soil properties in order to develop criteria for classes in Soil Taxonomy.

3. Soil Survey Investigations. This area include an understanding of the relationship between laboratory data and physical and chemical properties of taxonomic classes.

The Director of International Soil Classification should be of sufficient professional stature to command respect and work at peer levels with scientists in other countries. He should have demonstrated ability to evaluate scientific proposals to amend the Soil Taxonomy.

The Director will remain permanently with the project and will provide continuity in the management of the Soil Taxonomy.

The equivalent of 1 1/4 Scientific Person Years will be used to support soil scientists with special qualifications in certain aspects of soil science

or with special knowledge of certain kinds of soils. These soil scientists will be assigned specific and rather narrowly defined problems which they will be expected to solve. Their area of expertise may be narrow and normally deeper than that of the Director.

The scientists may be housed with the Director, International Soil Classification or may be located at the National Soil Survey Laboratory, or in exceptional cases, at another facility that has needed expertise or equipment.

(c) Special Attributes

These experts and scientist in section (a) and (b) above should possess a composite of the following attributes, qualifications and/or experiences:

(i). Professional and scientific stature to command respect and to work at peer levels with scientists in all areas of responsibility.

(ii). Professional experience as soil management specialists including organizational responsibility for planning and developing programs and projects in the specialized area.

(iii). Demonstrated ability to assess the soundness and economic feasibility of proposals for economic development in relation to conditions existing in specific countries.

(iv). Ability to deal successfully with senior government officials or scientists in recipient countries, as well as with representatives of other sponsoring agencis on policy issues of major importance to the development of soil mangement programs.

III. Implementation

This project will be implemented with an agreement between AID and the Soil Conservation Service (SCS) of USDA. SCS carries out broad programs of soil management (survey, land use, land use planning, conservation, fertility etc.) and related functions on a continuing basis and maintains an extensive staff of professionals in all aspects of land resource allocation The services of the SCS intramural and extramural soil management experts and scientists will strengthen, supplement and add to the existing technical skills of the professional staff in the Tropical Soil and Water Management (TSWM) Division, Office of Agriculture, Bureau for Development Support, A.I.D. These services are urgently needed to adequately support the soil management programs planned and implemented in the LDC's by the Missions, Regional Bureaus and DS/AGR/TSWM Division.

A. Contractor Competence

The Soil Conservation Service (SCS) of USDA has a long and distinguished history of involvement in the area of soil management both in the

U.S. and overseas. SCS has an exceptional range of physical resources and manpower expertise. It has served AID and LDCs on numerous occasions. SCS has worked very closely with all land grant colleges in U.S. and is able to tap appropriate expertise from these institutions. Most of their expertise have a high level of practical experience. Their work has a direct bearing on the farmers

SCS has mapped more than 575 million hectates (about 65% of the total area) of the United States in detail sufficient for present day needs. The present rate of survey progress is 20-25 million hectares annually. This requires about 1,500 man years of effort each year, and an outlay of more than $50 million.

SCS is in a favorable position to assist developing countries develop their own capabilities to organize and carry out soil survey, soil management and soil conservation activities. SCS's top administration is willing to assist the LDCs on a systematic fashion. SCS has good track record in LDCs. Their people are well respected. Many LDCs prefer to use U.S. methodologies. SCS has ecellent working relationship with FAO, International Agricultural Research Centers, U.S. institutions and developed and developing nations.

SCS is the author of U.S. Soil Taxonomy. It is the only organization in the world which can help remove Soil Taxonomy deficiencies for the tropical soils. International soil correlation is critical to the success of agro-technology transference from oone tropical region to another tropical region. SCS is willing to establish an Office of International Soil Classification and Correlation. National Soil Survey Laboratory, along with a number of State University/Experiment Station Soil Survey laboratories can provide consulting services to laboratories in LDCs.

In summary, SCS is willing and capable of helping LDCs in an efficient and effective way. It can help LDCs to use Soil Taxonomy as tool in agro-technology transference and as a mechanism for soil survey quality control.

B. Duration of Service

Initially the project will be approved for a period of three years. Funding may be yearly or for a longer period depending on its availability.

Scope of work for the technical assistance will be reviewed yearly. A total of twenty four (24) person months will be made available to AID and LDCs during the first twelve (12) months. Adjustments in services for subsequent years will be requested as desired. These services will last for a minimum of five years or as long as needed.

The technology transfer component will also last for a minimum of five (5) years. It is recognized that improvement of the Soil Taxonomy is a long term effort and it could take 10 to 15 years to do the job required. It could even mean placing a permanent international staff in SCS. On the other hand it has been speculated within SCS that SCS may get congressional

approval for slots and budget to support an international staff sometimes during the next 3 to 5 years.

C. Coordination

A "Soil Management Support Service" - (SMSS) Committee will serve in an informal capacity, to provide advisory direction to the project and to facilitate coordination among agencies and institutions which will be directly or indirectly involved in the SMSS project. The committee will be composed of the Regional Bureaus (Agri. tech. offices) (2), DS/AGR (1) SCS (2), FAO (1), IARC (2), LDCs (2), Consortium on Soils of the Tropics-CST (2) and Developed Countries (2). It will be open to any other interested institution. SMSS project will provide coordination linkages to other complimentary projects within AID and outside AID. DS/AGR project monitor (PM) will coordinate the activities of the committee. There will be a continous dialogue between the members of the committee. DS/AGR-PM will update the names of coordinating committee as required. The committee will decide its modus operandi.

D. Administration and Evaluation

The SMSS experts will receive adminstrative supervision and guidance from the Program Monitor of the Tropical Soil and Water Management Division and other AID professional staff. AID will provide for periodic reviews of the overall program to determine if broad program objectives and national foreign assistance goals are bing met. This review will be carried out by an ad hoc committee consisting of staff from Regional Bureaus SCS and DS/AGR. The Senior Program Monitor of TSWM will coordinate the review function.

Technical and operational supervision of the expert soil management specialists will be provided by SCS.

Each short-term technical assistance activity will be evaluated in terms of the results produced as compared with the implementing instructions. This evaluation will be conducted by AID. (Regional burea, USAIDs and DS/AGR).

The project will be reviewed at the end of the first year if deemed necessary. AID will organize the review in consultation with SCS. The evaluation process will consist of comparing results produced with planned outputs and measures of success.

E. Reports

The SMSS experts will prepare detailed memoranda from time to time as requried on issues arising in the course of their duties. They will also prepare documents relating to technical assistance project in which they participate, and they are to report on the results of such projects.

An annual substantive report covering the status of the work, indicating progress made during the year, and outlining plans for the ensuing period will be submitted to the AID project moniter.

Scientific reports and manuscripts may be prepared and presented at various symposia, conferences and professional meetings. In addition to departmental reviews of publications, the investigators will allow a prepublication review by AID. Therefore, each of the proposed publications will be submitted to the DS/AGR Project Monitor (one copy) and to the Contracting officer (one copy) no later than the date of their submission to the publisher.

Trip reports (3 copies) are to be submitted to the AID Program Monitor DS/AGR/TSWM.

F. Travel

Clearances: Prior to travel overseas by contractor personnel, DS/AGR will acquire clearances from AID Missions/representatives in the developing countries and the AID Regional Bureaus concerned. All travel, domestic and international under the contract must be approved by the AID project manager. (DS/AGR/TSWM)

G. Special Provisions

Any residual funds remaining from one year are to be carried forward into the next one in support of this project.

H. Logistic Support

Use of AID facilities is authorized as it is essential for the performances of the SCS personnel.

IV. Environmental Impact

Initial Environment Examination—The activities of this project fall into the area described in Environmental procedure regulations, Para 216.2 (c) "Analyses, Studies, Academic or Investigative Research. Workshops and Meetings". These classes of activities will not normally require the filing of an Environmental Impact Statement or the preparation of an Environmental Assessment. It is possible that an output of this project will be set of procedures, guidelines or research results which when used would require such assessment. However, the project itself only proposes research and directly supportive activities. Under these guidelines this activity clearly qualifies for a negative determination at the time when a threshold decision is determined.

V. Effect of Project on Role of Women

Traditionally women in developing countries have played a major role in agriculture. They are expected to continue to play an important role in country

efforts associated with this project's inputs. However, this project by itself will have no effect on that role.

VI. Budget (Proposed)

Soil Management Support Service
Project. #931-1229.11
AID and SCS-USDA

September 15, 1979 through September 30, 1980

(a) Technical Assistance	Cost ($,000)
Item	
. Personnel Compensation (24 p.m.) (including benefits)	90
. International Travel (16 trips, 4-6 wk each) (including per diem)	60
. Domestic Travel 6 trips, 1 week each	4
. Seminar, workshop etc (one) (to develop training package - held in LDC)	40
. Laboratory analysis (200 samples)	10
. Publications (four)	6
. Overhead	42
Total	252

* p.m. - person months

(b) Technology Transfer

Item	Cost ($,000)
Professional Staff	
Soil Scientist, Director (12 p.m.)	44
Soil Scientist Research (12 p.m.)	38
Temporary (High Level Specialists); (16 p.m.)	76
Support Staff (16 p.m.	18
Travel - international (8)	17
Travel - domestic (4)	3
Workshop - international ( )	75
Laboratory Analysis (150)	15
Publications (2)	10
Overhead	59
Total	355

(c) Projection for five (5) years ($ thous.)

	F.Y. 79	80	81	82	83
(a) Tech. Assistance	252	365	400	500	550
(b) Tech. Transfer	355	355	400	450	500
Total	607	720	800	950	1050

931122911 5801

VII. References

Buol, S.W., P.A. Sanchez, R.B. Cate, Jr., and M.A. Granger. 1975. Soil fertility capability classification. pp 126-144 in E. Bornemisza and A. Alvarado, eds. Soil Management in Tropical America. N. Carolina State Univ., Raleigh, N.C.

Chan, H.Y. 1978. Soil-survey interpretations for improved rubber production in peninsular Malaysia. pp 41-66 in L.D. Swindale, ed. Soil-resources data for agricultural development. Hawaii Agr. Exp Sta., Honolulu, HI.

Dudal, R. 1978. Land resources for agricultural development. Intn'l Soc Soil Sci, 11th Congress, Edmonton, Canada. 1978 2:314-340.

FAO-Unesco, 1974. Soil Map of the World. Volume I. Legend. Unesco, Paris.

Greenland, D.J., and R. Lal. 1972. Soil erosion in the humid tropics: the need for action and the need for research. pp 261-268 in D.J. Greenland and R. Lal, eds. Soil conservation and management in the humid tropics. J. Wiley and Sons, New York, N.Y.

Kelley, O.J. 1974. A need for an international network on tropical soils. pp 544-558 in E. Bornemisza and A. Alvarado, eds. Soil management in tropical America. N. Carolina State Univ., Raleigh, N.C.

Orvedal, C. 1975, 77 and 78. Bibliography of the Soils of the Tropics. Volume I, II and III, Agency for International Development (DS/AGR) Washington, D.C.

Revelle, R. 1976. The resources available for agriculture. Sci Amer 235(3): 164-178.

Sanchez, P.A. 1972. A review of soils research in tropical Latin America. N.C. State Agri. Expt. Sta., Raleigh, N.C.

Soil Survey Staff. 1975. Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys. Agriculture Handbook No. 436. U.S. Government Printing Office, Washington, D.C.

Swindale, L.D. 1977. The role of soil science in planning agricultural development. J. Indian Soc. Soil Sci. 25:201-206.

TAC Secretariate. 1979. TAC review of priorities for international support to agricultural research. (TAC document No AGD/TAC: 1AR/79/1 Re 1). (also CGM 79/3).

PROJECT: Soil Management Support Service
PROJECT No: 931-1229.11
RSSA/PASA No: To be determined

Category	1st Year Funding FR:09-24-79 TO:09-29-80	2nd Year Funding FR:09-29-80 TO:09-29-81	3rd Year Funding FR:09-30-81 TO:09-29-82	TOTAL FR:09-24-79 TO:09-29-82
Salaries and Wages (Including Fringe Benefits)	$266,000	$283,000	$342,000	$ 891,000
Overhead	101,000	118,000	136,000	355,000
International Travel	77,000	107,000	110,000	294,000
Domestic Travel	7,000	9,000	9,000	25,000
Workshops/Seminars	115,000	135,000	140,000	390,000
Laboratory Analysis	25,000	30,000	25,000	80,000
Publications	16,000	38,000	38,000	92,000
GRAND TOTAL	$607,000	$720,000	$800,000	$2,127,000

NOTE: The budget outlined above is the total for all services and budget categories for this 3 year project. These figures are broken down into two components ("A" - Technical Services and "B" - Soil Taxonomy Improvement) on the next page(pg. #2).

PROJECT: Soil Management Support Service
PROJECT No: 931-1229.11
RSSA/PASA No: To be determined

Category	1st Year Funding FR: 09-24-79 TO: 09-29-80	2nd Year Funding FR: 09-30-80 TO: 09-20-81	3rd Year Funding FR: 09-30-81 TO: 09-29-82	TOTAL FR: 09-24-79 TO: 09-29-82
(a) Component "A" Technical Service				
Salaries and Wages (Including Fringe Benefits)	$ 90,000	$107,000	$145,000	$ 342,000
Overhead	42,000	59,000	66,000	167,000
International Travel	60,000	90,000	90,000	240,000
Domestic Travel	4,000	6,000	6,000	16,000
Workshop/Seminars	40,000	60,000	65,000	165,000
Laboratory Analysis	10,000	15,000	10,000	35,000
Publications	6,000	28,000	18,000	52,000
Subtotal-Component "A"	$252,000	$365,000	$400,000	$1,017,000
(b) Component "B" Soil Taxonomy Improvement				
Salaries and Wages (Including Fringe Benefits)	$176,000	$176,000	$197,000	$ 549,000
Overhead	59,000	59,000	70,000	188,000
International Travel	17,000	17,000	20,000	54,000
Domestic Travel	3,000	3,000	3,000	9,000
Workshop	75,000	75,000	75,000	225,000
Laboratory Analysis	15,000	15,000	15,000	45,000
Publications	10,000	10,000	20,000	40,000
Subtotal-Component "B"	$355,000	$355,000	$400,000	$1,110,000
GRAND TOTAL (Components "A" & "B")	$607,000	$720,000	$800,000	$2,127,000

PROJECT: Soil Management Support Service
PROJECT No: 931-1229.11
RSSA/PASA No: To be determined

Technician type	No. of Technicians	Worker Months Required per Technician per year	Total No. worker months for 3 years for all Technicians	Anticipated Average Salary per Technician	Total Paid by AID for 3 Yrs. for all Technician
(a) Component "A" Technical Assistance					
Soil Scientists					
- Soil Survey & Classification	6	1-3	32	$36,000	$111,000
- Soil Conservation	4	1-3	24	36,000	85,000
- Soil Fertility	3	1-3	16	36,000	58,000
- Soil Resource Inventory	2	1-3	13	36,000	47,000
- Land Use Planning	2	1-3	11	36,000	41,000
(b) Component "B" Soil Taxonomy Improvement					
Soil Scientists					
- Director	1	12	36	$45,000	$150,000
- Research	1	12	36	36,000	120,000
- Specialists	10	1-2	48	47,000	208,000
- Support	2	4-12	48	16,000	71,000

From

National Soils Handbook

USDA - SCS

(d) Amendments To The National Soil Classification System In Categories Above The Series. The national soil classification system is dynamic and as new knowledge is gained and soils are examined and described in new places, amendments to the system are required to accommodate the new information. Soil Taxonomy expresses in print knowledge of the system and understanding of soil science up to the time it was published.

(1) Kinds of Amendments. The kinds of amendments that may be expected are as follows:

301.1(d)(2)

- Addition of taxa.
- Deletion of taxa.
- Changes in definitions of taxa.
- Changes in definitions of diagnostic criteria.
- Additions of diagnostic criteria.
- Clarification of the text not related to any of the above.

(2) Origin of Suggestions for Amendments. Suggestions for amendments to the soil classification system may originate from any individual or group participating in the National Cooperative Soil Survey or from outside the United States. Others must obtain a sponsor from within the National Cooperative Soil Survey.

(3) Supporting Evidence for Amendments. The amount and kind of evidence required to accompany recommendations for amendments to the soil classification system varies, depending on the nature of the proposed changes. For example, a description of a proposed soil series with interpretations and laboratory data is acceptable evidence to support a new class in the family category.

Definitions of some taxa may need to be revised to provide more suitable groupings For these, as a minimum, the supporting evidence must describe the impact of each proposed change on definitions of all taxa that will be affected.

(4) Amendments That Originate Within the National Cooperative Soil Survey (NCSS)

(i) Regional Soil Taxonomy Committees. Four Soil Taxonomy committees, one for each of the group of states seved by a technical service center consider proposed amendments to the soil classification system. Members are:

- The principal soil correlator, serving as chairman.

- Six additional members, three from state agencies and three from federal agencies.

- Members from federal and state agencies are selected by the federal and state members respectively of the Regional Work Planning Conference of the National Cooperative Soil Survey.

- Members serve three-year terms except for the initial period, one state and one federal member retiring each year.

- Additional soil scientists, depending on the nature of the recommended changes and the expertise needed may be asked to consult with the committee at the discretion of the chairman.

(ii) National Ad Hoc Work Groups. Such work groups are appointed by the Assistant Administrator for Soil Survey as needed. These ad hoc work groups review reports from regional soil taxonomy committees and recommend additional study or implementation of proposed amendments. Membership includes representatives of state and federal agencies, and may include international representatives. They are composed of:

- A chairman, usually a member of the Washington office Soil Survey staff,

Additional members depending upon the nature of the recommended changes and the expertise needed.

(iii) Procedures For Amendments--Lower Categories.

(A) Soil Series. Soil series is the most common taxonomic reference for naming soil mapping units in the United States. Changes in the classification of soil series are made through the correlation process. When about 800 ha (2,000 acres) of a unique new kind of soil are recognized, using descriptions obtained for at least 10 pedons, necessary laboratory data obtained, and interpretations developed, a new series can be proposed and established as outlined in Section 301.1(c)(5).

(B) Adding New Families. Proposals to classify soils in families that previously lacked any soil series but are listed in the soil classification system, are submitted to the principal soil correlator for concurrence. When the added series meets the requirements given in (A) above, the soil series description is reviewed in the normal manner. Proposals to add new family criteria and new families to the system of soil classification follow the procedure for changes in the system outlined in Sections 301.1(d)(4)(iii)(D), 301.1(d)(4)(iv), and 301.1(d)(5)

(C) Dropping Families. Families are not dropped automatically from the approved list maintained by the Director, Soil Survey Classification and Correlation Division, because no soil series is listed in the family. Some variants, taxadjuncts, and unnamed (at the series level) soils may be classified in these families. A soil family is dropped by the Director, Soil Survey Classification and Correlation, upon recommendation of the principal soil correlator from the list of soil families of the USA only after it is determined that the family does not represent a significant [less than 800 ha (2,000 acres)] area of soils.

(D) Implied Subgroups and Families. The classification of some soils at the subgroup level was not provided in the soil classification system because of limited knowledge or small extent. These soils can be classified in a great group, but by definition are excluded from all recognized subgroups. For example, some soils, such as Grossarenic Hapludults, are excluded from the typic and other subgroup definitions of the great group. They are excluded because they have not been located and studied, but are "implied" because there is reasonable assumption that they occur. The following procedure is used for soils that are outside the range of any defined subgroup, but meet all the requirements for recognition as a new soil series:

- Determine if an existing subgroup can be modified to accommodate the new series without changing the intent or value for reasonable grouping of similar soils. If this cannot be done then:

--Define a new subgroup and provide documentation as to why it is needed.

301.1(d)(4)(iv)

--The proposal and supporting documentation, including the series description is sent to the Director, Soil Survey Classification and Correlation Division (DC&C). The DC&C reviews the proposal, determines if additional action is necessary and notifies the proposing individual within 30 days.

Families other than those listed in Soil Series of the United States, Puerto Rico and the Virgin Islands will be recognized when at least one series in the family has been approved in the correlation process.

(iv) Procedures for Amendments--Higher Categories. For proposed amendments that originate within the National Cooperative Soil Survey the steps are as follows:

(A) Proposals that originate within a state either from SCS staff or from cooperators are submitted to the state soil scientist. The state soil scientist reviews and comments on the proposal and supporting evidence and forwards all to the principal soil correlator (PSC) within one month of the receipt of the proposal.

(B) The PSC examines the proposal and the supporting evidence, requests additional evidence from the originating state if necessary, and within two months of the receipt of the proposal, submits the proposal to all members of the soil taxonomy committee of the Regional Work Planning Conference, NCSS.

(C) The soil taxonomy committee may choose to set up work groups to study proposals and to submit their recommendations to the committee, to seek advice from individuals with special knowledge of the subject matter of the proposal, or submit it to one or more of the other regional soil taxonomy committees for their consideration. Approval of the proposal requires a favorable vote by the majority of the committee (4 of the 7 members) serving the area where the original proposal was made. Minority reports may be submitted by dissenting members. If the proposal is disapproved, the originator of the proposal is notified of that action. If approved, the proposal and supporting evidence are submitted to the other three regional soil taxonomy committees through their chairmen and to the DC&C.

(D) The reports of the remaining three committees which must be approved by the majority of their members, are returned to the originating committee which prepares a consolidated report and forwards it to the DC&C.

(E) The DC&C evaluates the consolidated report and submits recommendations to the Assistant Administrator for Soil Survey.

(F) The Assistant Administrator for Soil Survey may:

- Approve the proposal, or

- Refer it to an ad hoc committee for additional study. The report of the ad hoc committee is returned to the four regional soil taxonomy committees for additional comments. The comments from the four committees are returned to the DC&C who, after consultation with the ad hoc committee, recommends

to the Assistant Administrator for Soil Survey whether the proposal should be approved or rejected.

(G) If approved by the Assistant Administrator for Soil Survey, an edited copy is prepared and submitted to the Administrator, SCS, for signature.

(H) Proposals that originate outside the area of responsibility of the state or technical service center are sent to the DC&C who, within two months submits the proposal to a national ad hoc work group or an appropriate soil taxonomy committee for approval. If approved by the majority of the work group or committee, the proposal is forwarded to all the soil taxonomy committees. Procedures given in Section 301.1(d)(4)(iv)(D) through (G) are subsequently followed.

(5) Amendments That Originate Outside The United States.

(i) Implied Subgroups and Families. Procedure is the same as that for amendments that originate within the National Cooperative Soil Survey. See Section 301.1(d)(4)(iii)(D).

(ii) Subgroups and Higher Categories and Diagnostic Properties.

(A) All such proposals for amendments are submitted to the Assistant Administrator for Soil Survey, Soil Conservation Service, U. S. Department of Agriculture, Washington, D. C. 20250, who refers the proposal to the Director, Soil Survey Classification and Correlation Division.

(B) The Director, Soil Survey Classification and Correlation Division (DC&C), evaluates the proposals and refers them to an appropriately constituted international work group and to those regional soil taxonomy committees affected by the recommendations for consideration. This work group submits its report to the DC&C. The regional committees affected by the proposals submit their comments to the DC&C.

(C) The DC&C prepares a consolidated report. If responses of all reviewers are favorable, the report is submitted to the Assistant Administrator for Soil Survey.

(D) If the consolidated report is controversial, the Assistant Administrator for Soil Survey constitutes an ad hoc work group. See Section 301.1(d)(4)(ii). The group makes recommendations for approval or disapproval.

(6) Notification of Amendments.

(i) Decisions on proposed amendments will be sent by the Director, Soil Survey Classification and Correlation Division, to the originators and reviewers of the proposed amendments as soon as the review procedure is completed.

(ii) Amendments are issued to the soil classification system in National Soils Handbook notices at least once each year.

301.2

(iii) Amendments are filed in Part II, Section 301.1 of the National Soils Handbook of the Soil Conservation Service. Amendments can be transferred to working copies of Soil Taxonomy by individual soil scientists.

(iv) Each amendment will be printed on a separate sheet so that it can be properly filed. Exceptions are changes which involve only correction of spelling or punctuation, several of which can be printed on a single sheet.

(v) Copies of the amendments will be sent to all soil scientists of the NCSS, and to other interested soil scientists. They will also be sent to domestic and some international journals of soil science, and to libraries known to hold copies of Soil Taxonomy.

301.2 Soil Survey Manual (USDA Handbook No. 18, 1951)

(a) Use and Application of the Manual. The purpose of the Soil Survey Manual is to provide in one place the major principles and concepts for making and using soil surveys and the standards and conventions for describing soils. The Manual is intended primarily for use by soil scientists engaged in making and interpreting of soil surveys. It is also the basic reference for soil survey users who desire to learn the scientific methods that form the basis for soil surveys. General procedures are discussed to illustrate and explain the principles and concepts, but current operational procedures are covered in more detail in this handbook.

(b) Amendments to the Manual. The Soil Survey Manual and approved supplements to it contain the current standards for making, interpreting and publishing soil surveys and related activities. Increased knowledge and changes in needs will require amendments to the Manual. The amendments may be issued either as supplements to the Manual or as National Soils Handbook notices.

(1) Origin of Amendments to the Manual. Suggestions for amendments to the Manual may originate from any individual or group. This includes members of field parties, state office staffs, laboratory staffs, principal soil correlators and their staffs and members of the Washington office staff. All cooperators may propose amendments. Sugggestions from staffs of foreign soil survey organizations are welcomed.

(2) Procedures for Making Amendments.

(i) Amendments That Originate Within A State. Amendments that originate within a state use the following procedure:

- The originating author or group in a given state forwards the proposed amendment and the supporting documents to the state soil scientist for review and comments. The state soil scientist forwards the amendment, supporting documents, and comments to the principal soil correlator within one month of the receipt of the proposal.

- The principal soil correlator reviews the proposed amendment, prepares comments and sends it with the complete case file to the Assistant Administrator for Soil Survey.

ICOMAND - International Committee on Andisols

Chmn., Dr. M. L. Leamy, Soil Bureau, DSIR, Private Bag, Lower Hutt, New Zealand

ICOMMORT - International Committee on Moisture Regimes in the Tropics.

Chmn., Dr. A. H. Van Wambeke, Dept. of Agronomy, Cornell University, Ithaca, New York

Dr. C. O. Scoppa, Argentina

Dr. G. D. Smith, Belgium

Dr. R. Tavernier, Belgium

Dr. R. S. Murthy, India

Dr. R. Fauck, France

Dr. D. L. Swindale, India

Dr. P. K. Jacomine, Brazil

Dr. W. G. Espinoza, Brazil

Dr. L. Moncharoen, Thailand

Mr. Frank Newhall, United States

ICOMLAC International Committee on Low Activity Clays

Chmn., Dr. Frank Moormann, Soils Dept., State Univ. Utrecht, Princetonplein 5, 3508TA Utrecht, The Netherlands

ICOMMOX - International Committee on Oxisols

Chmn., Dr. H. Eswaran, Univ. of Ghent, Krijgslaan 271, 9000 Ghent, Belgium

Attachment 3

INTERNATIONAL COMMITTEE ON THE CLASSIFICATION OF ANDISOLS (ICOMAND)

Circular letter No.1 3 April 1979

To: [illegible]

From: M.L. Leamy, Soil Bureau, DSIR, Private Bag, Lower Hutt, New Zealand

A. Introduction

Most recipients of this circular will have some knowledge of the background to this committee and will have a copy of Guy Smith's Preliminary Proposal for Reclassification of Andepts and some Andic Subgroups. The letter of authorisation from Soil Conservation Service, U.S. Dept. Agriculture states that this is "an international committee to consider the proposal for providing the order of Andisols for at least those soils that are now Andepts. Related definitions such as domination of the exchange complex by amorphous material and some modifiers that replace names of particle-size classes may need revisions. Most committee work may consist of testing the proposal dated April 10 1978 and outlined by Guy D. Smith while he was in New Zealand.

As with its illustrious precursors ICOMLAC (Alfisols and Ultisols with low activity clays) and ICOMOX (Oxisols) this committee will communicate predominantly by correspondence. This means that response to topics raised in the circulars, and the initiation of fresh topics by committee members will be the life-blood of the operation. There are some committee guidelines which should be spelled out now:

1. There is no restriction on membership. Anyone with a real interest in and knowledge of soils formed from volcanic materials is very welcome to take part in committee discussions. Logistics and lack of knowledge of all workers in this field prevent the circulars being sent to all who fall into this category. I will need to rely on those who do receive the circular to spread it more widely where they think appropriate. A main objective of the committee is to achieve as full an international testing of the Andisol proposal as is possible.

2. Proposals for change, addition or deletion must be accompanied by soil data supporting the amendment. Soil Taxonomy has introduced a factual discipline to pedology which, in my view, is welcome and worthy of perpetuation. In this circular, data supporting specific proposed modifications are listed by numbered items in Appendix 1.

3. If the experience of the existing committees is repeated, it will not be possible for me to answer every letter individually. Responses will be made through the circular system.

4. We are working towards an Andisol proposal which is acceptable to a majority of pedologists. When this point is reached, I suspect some years hence, the proposal will be submitted to Soil Conservation Service as a firm recommendation for change.

5. In 1981 the New Zealand Society of Soil Science is hosting an Internationa Conference on Soils with Variable Charge I enclose the first circular for those of you who may not know about this. There will be an opportunity in the programme for International Committees to meet.

B. Synopsis

Considerable reaction to the 10 April 1978 proposal has accumulated over 12 months. This circular will be quite lengthy. Contents will include:

- some specific revisions suggested by Guy Smith since he wrote the proposal
- comments and queries arising from the original proposal
- an assessment of the proposed redefinition for ECDAM which was written by Les Blakemore and circulated with the original proposal
- matters arising from a discussion with Japanese pedologists from the National Institute for Agricultural Sciences in Tokyo in September 1978, and comments from other Japanese workers
- submissions from New Zealand
- submissions from the U.S.A.
- other comments and suggestions

Two points about Andisols are worth emphasising. First the spelling is by design different from Andosols to avoid any confusion with existing definitions, and second the suggested position in the Key to Soil Orders (Soil Taxonomy p.93) is immediately before Inceptisols.

C. Proposal revisions

The following revisions were proposed by Guy Smith in a letter dated 13 February 1979, and while he was in New Zealand:

1. Item 4 of the definition of Andisols on p.7 of the proposal is extended as follows:

   on line 4 after the words "a water retention of undried fine earth at 15-bars pressure of 40% or more," add the words an ustic moisture regime, and a bulk density of the fine earth fraction of less than 0.9; and in addition ...

   The addition of the moisture regime eliminates any problem of confusion with Hydraquents, and the bulk density should eliminate any problems of confusion with Vertisols or Mollisols. These points were raised by Robert Grossman in a letter of 7 June 1978 (see p.15).

2. Another change that seems to be needed is the addition of a great group of Aquands with a duripan. While the soils have an aquic moisture regime and a histic epipedon, they also dry during the summer. The group should come in the Key as AA with the wording "Aquands that have a duripan or a placic horizon that rests on a duripan."

   Because mottles are absent above the pan or are deeper than specified for Aquands, and because a histic epipedon can be transient, it is proposed to add an item C to the definition of Aquands (p.8) as follows: "A placic horizon that rests on a duripan."

3. An amorphic mineralogy class is proposed for use in orders where combinations of mineralogy and particle size are not used.

   Many North Island New Zealand Inceptisols, a number of Ultisols, and some soils of other orders are excluded from Andisols and from andic subgroups

by bulk density requirements, but have enough amorphous materials to have a pH of 11 or more in NaF after 2 minutes and have P retention values comparable to the Andisols 90 to 100%. These soils are presently classified in the same families as soils that lack such properties. Although the series differ, and interpretations are possible for phases of series, some interpretations for phases of families are impossible.

Prior to leaving New Zealand in 1978 Guy Smith proposed to add a new mineralogy class to make distinctions at the family level between these kinds of soil by adding, in the Key to mineralogy classes (p.387, Soil Taxonomy), immediately after the gypsic mineralogy, an amorphic class, defined as follows:

"Enough amorphous materials that release OH to F to have a pH of 9.4 or more if, after any carbonates are removed, 1 g of soil is suspended in 50 ml of 1M NaF for 2 minutes, <u>and</u> have P retention of 80% or more. The determinant size fraction would be the whole soil particles less than 2 mm in diameter.

The use of such a mineralogy class for spodic horizons can be avoided or required. It would seem that most spodic horizons would fit this definition. Until more information on these properties in the various subgroups of Spodosols is available, it might be best not to use this class for Spodosols, just as it would not be used for andic subgroups of other orders, where combinations of mineralogy and particle size are used.

Data for the Judgeford soil illustrating amorphic mineralogy are listed in Item 1 in Appendix 1.

The introduction of an amorphic mineralogy class will allow the distinctive soil properties associated with volcanic ash to be expressed even where the ash is only a minor component of the soil. For instance, the Judgeford soil is some 300 km distant from the volcanic source and has only small amounts of horneblende,epidote augite and volcanic glass in the sand fraction. But we know that a phosphate retention figure in excess of 80% does have practical implications for the use of this soil. It is possible that this soil is derived from tephric loess.

Comments and testing are invited from other regions for instance where Andisols are associated with Oxisols and Aridisols in Hawaii (Ike Ikawa to comment); or with Ultisols in Oregon (Mel Williams to comment); or with Mollisols in Ecuador (Francois Colmet-Daage to comment).

D Comments and queries generated by the Andisol proposal

Guy Smith's proposal deliberately raised a number of questions which require wider comment and, in some cases, testing against appropriate data These are listed below with an indication, or more properly, a guess, at which regions might have applicable experience. My own knowledge of the world spectrum of Andisols is not great at this stage of the exercise. I anticipate a change in this condition.

1. In his covering letter of 10 April 1978 Guy Smith pointed out that no data on P retention or pH in NaF is available for hydric great groups i.e. Hydrotropands and Hydrudands. Such soils probably occur under udic or perudic moisture regimes and thermic or warmer temperature regimes and also under isomesic or warmer iso-temperatures (e.g. Hawaii, West Indies, Philippines, Costa Rica, Ecuador, Mexico, wetter regions of Chile and Japan etc. etc.). It is also noted on p.12 of the proposal that "It is not certain that Hydrudands exist, but they are provided temporarily because the literature suggests that they occur in Chile."

   In a letter dated 13 February 1979 Guy Smith transmits information he has received from Francois Colmet-Daage which indicates that Hydrudands do occur on the Isle de Chiloe. This data is Item 2 of Appendix 1. For these soils it seems as if pH in NaF is high enough for ECDAM requirements but P retention is below 90%.

   Comments please on the occurrence of other Hydrudands.

2. On p.3 of the proposal, the definitions of pumice and pumice-like fragments require an apparent specific gravity (including vesicles) of less than one. There is some indication that in parts of Africa pumice

with S.G. greater than 1 occurs. Does anyone have any firm evidence of this? Perhaps Armand van Wambeke, Pierre Segalen or Wim Sombroek in particular might be able to comment?

3. On p.5 and 6 of the proposal there is discussion on how the 15-bar water limits for ashy and medial were reached. It depends heavily on New Zealand experience and comment on how appropriate the limits are from other regions would be welcome.

4. On p.12 of the proposal Guy Smith comments on the probable, but not verified, existence of Placoborands, and placic horizons in Aquands Alaska and Japan seem likely localities for either or both. Perhaps Sam Rieger and Masanori Mitsuchi could comment and provide data?

5. On p.17 of the proposal it is suggested that 75 cm would be a better thickness limit than 1 m for the pachic subgroup. This is supported by data from the Imaichi series in Tochigi Prefecture, Japan which has value/chroma combinations of 2/1 and organic carbon contents of 5% at 82 cm but below that change to 6.5/7 and 0.58% respectively. Is there any more data for or against a change to a 75 cm limit?

6. On p.19 of the proposal it is suggested that the ustollic subgroup name might better be "mollic" to prevent repetition of the formative element "ust", as in Ustollic Haplustand. Comments please, particularly from the Hawaiians.

7. The value set for bulk density both for ECDAM and in the Andisol definition has been questioned by both Drs Furuhata and Amano, Japan, and by Mel Williams from Oregon. The contention is that 0.85 Mg/m^3 (g/cc) is too low, and also that two decimal places implies more precision than is realistic. Mel Williams would like the requirement for bulk density to be less than 1.0. Guy Smith comments as follows: "I would not be disturbed by such a change, but you may want to examine its effect on New Zealand soils. A change to 0.9 or 1.0 would have considerable appeal to me because 0.85 has one more significant number than can be

measured economically. I would urge that you use only one number to the right of the decimal".

Fletche Thomas, Soil Bureau, New Zealand comments on the bulk density issue as follows:

"Changes in bulk density limit. On grounds of economy of effort I agree that 0.9 Mg/m^3 is a better limit than 0.85 Mg/m^3. Before any decision is made to increase the limit further, to say 1.0 Mg/m^3, soils should be identified which meet all other criteria for exchange complex dominated by amorphous material and which bulk density "wrongfully" excludes. Thought should also be given to those soils which are at present "correctly" excluded from meeting the criteria of ECDAM by bulk density alone. We should be collecting data to clarify this point, at least for N.Z. and nearby soils.

The previous point raises a matter of philosophy, I guess. Bulk density, as such, is not related to domination of the exchange complex by amorphous material. There are soils whose bulk density alone prevents them being described as having their exchange complex dominated by amorphous material. Such soils should be included or excluded from materials having ECDAM by using a parameter or parameters having some meaning in terms of the properties summarised in the name Andisol. Is bulk density suitable for this purpose, or is there another more meaningful property which could be used?"

The main implication of the change might be in terms of andic subgroups where the parameter is currently 0.95 Mg/m^3. Would the proponents of change please advise what they would be about andic subgroup definitions?

E. Redefinition of ECDAM

Attached to Guy Smith's proposal is a proposed redefinition of ECDAM prepared by Les Blakemore, Soil Bureau, New Zealand. He has received a number of comments on this and has done further testing. He has prepared, for comment, the following statement:

"Since the proposal was issued, we have been testing the criteria further and also have been testing several suggestions which we have received.

1) Variable charge ratio: It has become apparent that 0.7 is too low to be useful and that 0.8 ($\frac{\text{Exch. Acidity (8.2) - Al (KCl)}}{\text{CEC 8.2}}$ = >0.8) would be a better critical level; even so, the value does not exclude Oxisols for which we have obtained values up to 1.0. It is interesting to note that neither the variable charge ratio nor the phosphate retention criteria exclude Oxisols and that of the suggested chamical parameters for ECDAM, only the pH NaF is not met by Oxisols.

   Dr Eswaran has suggested the following index:

   $$\frac{\text{CEC 8.2 - (Bases + Al)}}{\text{2.5 x 15 bar water (Air dried soil basis)}} \times 100 > 50$$

   To date, we have only limited data to test this index but it would seem that organic matter can cause this index to be greater than 50 in soils which are not regarded as being dominated by amorphous constituents and as a consequence, it would be necessary to preclude topsoils from the index.

2) pH NaF. Experience so far has been that the requirement of 9.4 (1 g : 50 ml NaF, stirred 2 mins) is useful. There has been a suggestion that as some soils take as much as 5 minutes to come to equilibrium, this time (5 mins) would be preferable, however, the values obtained for New Zealand soils seem to be quite stable and useful. Experience from other regions would be welcomed

3) Phosphate Retention: There has been some criticism of this criterion because some Chilean Andisols failed to meet the 90% requirement. There is the possibility that predominance of imogolite will cause lower P retentions and if imogolitic soils are to be included, it might be necessary to lower this requirement to 80%.

4) SiO_2 to Al_2O_3 Ratio: Dr Eswaran has suggested that an ammonium oxalate (0.2 M - 2 hrs in dark) extraction of silica and alumina could be a useful index and that most Andisols would have:

$$\frac{\%SiO_2}{\%Al_2O_3} \times 1.69 > 0.95$$

Based on several 'amms extraction results which we have for New Zealand soils, this parameter looks quite promising with values up to 1.5 for Andisols being obtained and as low as 0.70 for non-Andisols; however, care would have to be taken when levels are low, as apparent values in excess of 0.75 can be obtained in some soils of crystalline mineralogy.

F. Submissions from Japan

Professor Kato has submitted a number of queries. I have summarised them below together with my own comments. Other comments are welcome.

1. "What is meant by amorphous materials? These are understood to be composed of materials such as imogolite, allophane, allophane-like materials, R_2O_3 materials combining humus etc."

There is considerable current discussion on the nature of amorphous materials. Commenting on Chilean Andisols with high amounts of imogolite and relatively low P retentions (<90%), Guy Smith concludes that the domination by amorphous materials probably needs to be broadened to include imogolite as well as allophane. It is pertinent to note here that the mineral constitution is not used specifically as a parameter for Andisols and in fact the wording in the definition (p.6 of the proposal) is "... with an exchange complex that is dominated by x-ray amorphous compounds of Al, Si and humus ... Thus the specific identification of the amorphous materials is not critical to the definition of Andisols.

A recent paper from Japan has a bearing on this topic. It is "Physical and Chemical Properties and Clay Mineralogy of Andosols from Kitakami, Japan" by Sadao Shoji and Tsuyoshi Ono and published in Soil Science Vol 126 No.5 pp.297-311, 1978. It has aroused considerable interest here at Soil Bureau and comments by Roger Parfitt are included as Appendix 2 of this circular.

2. Professor Kato points out that measurement of bulk density at 1/3 bar tension, water content at 15 bar tension and NaF pH are not so familiar to Japanese soil scientists as phosphorus retention and clay content. This will be a common problem for at least some of the parameters suggested for definition. It has been in New Zealand, but we are fortunate to have sufficient flexibility among analytical personnel so that the required data is now being generated. In fact we have been interested in the high degree of motivation among the analysts when they know that the operation will answer a specific question. Because of dispersion and repeatability problems, we do not have much confidence in traditional methods of determining clay content in Andisols.

Professor Kato also comments that organic matter has the same effect as amorphous mineral constituents in lowering bulk density and raising water holding capacity.

This is correct and is a good reason for requiring other parameters in addition for the definition of ECDAM. Organic matter does not seem to have a parallel effect on NaF pH or P retention, for instance

3. Aquands may have a melanic great group. This point was raised also by Drs Mitsuchi and Amano during discussions at the National Institute for Agricultural Sciences in Tokyo, and again on a field trip in Tochigi Prefecture. It is clear that in some Andisols developing under an aquic moisture regime high organic matter obscures any mottles. Masanori Mitsuchi demonstrated a test for the presence of ferrous iron under such conditions using αα-dipyridyl. Could he please provide details of this test, hopefully English, for inclusion in the next circular? It is suggested that the Aquand definition be expanded to include an item requiring high ferrous iron throughout the upper 50 cm(?) as indicated by the αα-dipyridyl test where organic carbon is 8% or more throughout this thickness. Further, it is suggested that a great group of Melanaquands be defined to follow Vitraquands in the Key. The wording

should be similar to that for Melanudands except that the Japanese pedologists feel that in all melanic great groups the requirement for organic carbon should read "and have 8% or more organic carbon on a weighted average throughout these thicknesses." Could I ask our Japanese colleagues to provide the wording for the Melanaquand definition and the addition to the Aquand definition?

A related topic is the need for melanic subgroups in the Hapludands. The Kanuma series in Tochigi Prefecture, Japan fulfils the colour requirements throughout the top 30 cm but has organic carbon contents of 8.61 0-18 cm and 7.62 18-31 cm and by the present definition would not be a Melanadand. It would be if the definition were amended to require the weighted average organic carbon figure. However it seems likely there will be similar soils with less organic carbon which might require a melanic subgroup. How should this be defined? Comments please.

4. Some Andisols may have hard pans different from duripans, fragipans or placic horizons within 1 m. The pans are composed of more or less weathered coarser tephras such as pumices, lapilli and cinders cemented by free oxides of Si, Al, or Fe which are released by rapid weathering.

During the Tokyo discussions a similar point was made by Drs Iwasa and Yamada when they provided evidence for duripans in Andisols in a udic moisture regime. They say "Andosols with duripans (local name 'Masa') cemented with siliceous materials have been reported to occur near the volcanoes (Mt Fuji, and Mt Yatsugatake)." They also provided data for a profile near Mt Kaimondake in Kagoshima Prefecture (Item 3 Appendix 1), with "Kora" or cemented horizons.

Two questions arise - do these features fit the definition of duripans, or are they geological phenomena. Micromorphology might help. Could Hari Eswaran please comment on possible micromorphological features which could be used to help answer this?

The second question is should there be a duric great group of the Udands. The short answer is that with the current definitions there is no need for such a group. Ustands are defined as "Other Andisols that have an ustic moisture regime or a duripan or both". However there may well be a need for a udic subgroup of Durustands to cover this case.

Comments please, particularly perhaps from Chile?

5. As weathering proceeds, pumice or cinders become more brittle and softer until it is impossible to isolate them from the matrix. How should this condition be distinguished?

On p.5 of the proposal Guy Smith noted that a hydrous-pumiceous particle size/mineralogy class is not presently known to occur but should be recognised if found. In the Kanuma series, Tochigi Prefecture, Japan there is a basal layer of pumiceous ash about 40,000 years old which is a clay loam by field texture and in which the pumice fragments are pseudomorphs which completely disintegrate on disturbance. This material could well be hydrous-pumiceous if it has a water retention of 100% or more at 15-bars. This data was not available when I was in Japan in September. Could our Japanese colleagues provide it please?

6. In the Tokyo discussions Dr Takahiro Inoue mentioned a gley soil (Hachirogata) which has 15-bar water retention >40% and a ratio of 15-bar water to exchangeable bases of <1.5 but which has montmorillonitic mineralogy. It would need to have also a pH NaF of 9.4 or more and, in view of Guy Smith's proposed revision of February 13, 1979, bulk density less than 0.9, to conform to the Andisol definition. If it met these requirements it may well be that to exclude such soils the opening sentence of the Andisol definition on p.7 of the proposal should be expanded to include "and do not have montmorillonitic mineralogy." Could Takahiro Inoue please supply data on bulk density and NaF pH for this soil?

7. At the Tokyo meeting Masanori Mitsuchi raised the question of Aquands cultivated for growing rice. He provided data showing the influence of rice cultivation on freely drained Andisols which is reflected in characteristics associated with wetness in the upper 40-50 cm, underlain by freely drained material. He suggests recognition at subgroup, or even group level as Oryzaquands (Oryza = rice).

Frank Moormann has considerable experience with such soils and has, I believe, proposed an anthraquic subgroup. Could he comment and perhaps supply an anthraquic definition which might suit Andisols? Perhaps there will be comments from the Philippines also?

G. Submissions from New Zealand

Field testing of some aspects of the proposal took place in conjunction with the 26th New Zealand Soil Bureau Conference in September 1978. The following points arose:

(a) In New Zealand, Hapludands and Vitrudands intergrade to Spodosols. There is a population of soils which have incipient spodic horizons which do not meet all the parameters of Item 3a and b for the spodic horizon, p.32 Soil Taxonomy. A technique for identifying spodic characteristics by measuring the density of acid oxalate extracts has been developed at Soil Bureau (B.K. Daly, in prep. Acid oxalate soluble organic matter as an index of podzolisation). A spodic subgroup for Hapludands and Vitrudands using this criterion is proposed. To provide for this subgroup the typic subgroup should be defined:

Has in all subsoil horizons an acid oxalate extract colour less dens than the colour of the acid oxalate extract from the epipedon.

Data for Waiteti sandy loam, a spodic hapludand, are given as Item 4, Appendix 1. This soil grades into an andic haplorthod, and there is a significant land use difference in that pip fruit can be produced on the hapludand but not on the haplorthod. Pre-publication copies of the Daly manuscript can be obtained on request from Brian

(b) Volcanic ash is currently being deposited in New Zealand, and there are many soils with very recent ash overlying older ash. Entisols are formed in the recent ash, and there seems to be a need to recognise the presence of a buried andisol. Consequently, a thapto-andic subgroup for Entisols is proposed. To provide for this subgroup, the typic subgroup should be defined as follows: do not have a buried andisol with an upper boundary within 1 m of the surface.

(c) On p.15 of the proposal the statement is made that entic subgroups are suggested because they are in Soil Taxonomy, but with very serious reservations. Those reservations are reinforced by New Zealand experience. One of the most extensive Vitrudands is Taupo sandy loam which has long been regarded as typical of the yellow-brown pumice soils (Vitrudands). It has 4% organic carbon throughout the upper 25 cm and would thus be entic. Taupo pumice was deposited 2000 years ago. We would like to regard this as typic and see little merit in retaining entic subgroups. Comments please.

(d) In some places in the Taupo pumice there are within 1 m particle size/mineralogy class sequences as follows: ashy/pumiceous/ashy. Guy Smith has suggested that this could be recognised in the family name by the use of the prefix aniso, e.g. Typic Vitrudand aniso ashy pumiceous mesic. Comments?

H. Submissions from the U.S.A.

1. Robert B. Grossman in a letter dated 7 June 1978 makes the following comments

(a) Void Ratio should be substituted for bulk density. The change should be general in the classification system but perhaps we can begin here. The particle density of some volcanic soil materials is appreciably below 2.65 and hence, the porosity is considerably lower than may be calculated on the basis of an assumed particle density of 2.65. The change would be

pertinent both to plant growth considerations and to non-agricultural soil use. Void Ratio is used considerably more in soil mechanics than is bulk density.

(b) There are a number of soils other than those strongly influenced by volcanic ash which show a 15-bar reduction on air drying, and we need to write definitions to exclude them. Hydraquents and relatives with little or no ash commonly show very large decreases in 15-bar water retention on air drying. Even the lower part of Iowa corn soils show a 10 to 25 percent relative decrease on air drying.

(c) We should explore the effect of mechanical disaggregation on water desorption at low tension as a criterion for the degree of thixotropy. I have the suspicion that the water reten ion is reduced at a given tension on disaggregation.

(d) Responses have been received from Fletcher Thomas (N.Z.) and Guy Smith. Fletcher Thomas says:

I can see no significant advantages in substituting voids ratio for bulk density. It would need to be shown that voids ratio has predictive value relating to plant growth that bulk density does not have. Supporting data would be necessary. In addition, the calculation of voids ratio requires particle density (specific gravity) to be measured in addition to the measurements needed for bulk density. It would have to be shown that the additional work produced a worthwhile return.

It is agreed that many other soils than those strongly influenced by volcanic ash show a reduction in water retained at 15-bar tension after air-drying. Data needs to be collected to test the criteria suggested by Guy Smith, in particular to see if some soils which should be excluded are included in the proposed definitions of ashy, medial and hydrous. I have begun collecting data for this purpose.

Dr Grossman's suspicion concerning water retention may be valid, but my instinct does not support it fully. Wells and Furkert (1972) reported results on one sample of

allophane which suggest that there is no difference in the water retained at 15-bar tension between "unworked" and "worked" samples, though there may be some difference at tensions below 15-bar. However, the use of the term "thixotropic" is abandoned in the Andisol proposal and I'm not sure of the relevance of the suggestion. Perhaps the degree of change in water retained may be used to distinguish among the ashy, medial and hydrous materials. A great deal of work would be required to test this, and little more may be learnt about the materials than may be inferred from changes due to air drying.

Reference

Wells, N. and Furkert, R.J. 1972. Bonding of water to allophane. Soil Science 113, 110-5.

(e) Guy Smith has responded as follows:

Dr Grossman proposes changing bulk density to void ratio on the ground that particle density may be less than 2.65. In New Zealand at least particle density has been measured, and bulk density should be related directly to void ratio.

He also is concerned about changes in water retention on drying Hydraquents and Udolls. However, I proposed the change only to subdivide taxa of Andisols. The changes in water retention were not used in the order definition. Hence, changes in other orders should not concern us. Even though we could find a Hydraquent formed from ash, the classification would not be affected because changes on drying were not used to subdivide Aquands except for subgroups. I know of no data showing the effect of drying Hydraquents on the 15-bar water retention.

I explained my reasons for abandoning the use of thixotropy, and see no need to study the effects of disaggregation so that it can be reintroduced.

2. On p.7 of the proposal in the definition preamble, Mel Williams would like to use a colour value, moist, of less than 3.5, as is the case for the mollic epipedon definition.

   Does anybody have any strong feelings about this?

3. In Soil Taxonomy Memorandum 4/78 Lawrence D. Giese suggests amending Item 2 of ECDAM on p.47 of Soil Taxonomy from 20% to less than 12% 15-bar water. In the Blakemore redefinition of ECDAM 15% or more is used. Comments please.

4. In the same Memorandum the Laboratory suggests broadening the definition of medial families to include andic subgroups. On p.20 of Guy Smith's proposal this is recommended for andic subgroups of Spodosols.

I. Other comments and suggestions

Hari Eswaran has made comments on the proposal in a letter to Guy Smith dated 2 May 1978. They are:

1. Andisols have some specific micromorphological properties which distinguish them from other soils and from spodic horizons.

   Could we ask you to document these for the committee if they would be potentially useful diagnostic or supporting criteria please Hari?

2. Could we define the aeric subgroups on the basis of zero or positive delta pH, to conform to recent proposals for Oxisols?

3. It would be preferable to define altic subgroups by using the present definition for oxic subgroups (p.16 of the proposal), and to eliminate the oxic subgroup.

   The effect of 2 and 3 is to eliminate the use of bases plus Al as a criterion for subgroups in Andisols. Any comments?

4. A sulfic subgroup might be required in the Aquands.

   Does anyone have any experience and data to support this?

Thus ends the first ICOMAND circular. I must apologise for its length. I would just note that Soil Taxonomy has many qualities, but brevity is not one of them. For your interest a list of the recipients of this circular is given as Appendix 3.

APPENDIX 1

Item 1. Example of amorphic mineralogy, Zealand

Soil: Judgeford silt loam
Typic Dystrochrept fine loamy amorphic mesic

Location: Whitemans Valley, Hutt County, New Zealand

Lab No	Depth cm	pH NaF	P retention %	B.D.	15-bar H_2O dry	Clay
SB9445A	0-18	8.9	72	0.95	18.2	24
SB9445B	18-28	9.5	84	0.94	14.5	31
SB9445C	28-42	10.1	90	1.03	15.9	31
SB9445D	42-68	9.9	85	1.05	16.9	27
SB9445E	68-97	9.8	87	1.3	14.4	23
SB9445F	97-125	10.0	97	1.07	30.9	20

Item 2. Hydrudand data from Chile

Sample No.	Sum of bases	pH H_2O	pH KCl	pH NaF	15-bar moist H_2O	15-bar A.D. H_2O	%C	P Retention N.Z.	B.D.	CEC (dried) pH4	CEC (dried) pH7	CEC (dried) pH9
312b(40-60cm) Hydrudand	5.8	6.0	6.0	4+	100	about 30 inter-polated	4.6	88	.38	25	34	55
370b(40-50cm) Hydrudand	2.1	4.8	4.9	4+	141	-	7.6	81	.33	27	41	59
369b(40-70cm) Hapludand?	2.3	5.3	5.6	4+	95	29	4.9	80	.41			
371b(50-70cm) Hapludand	1.7			4+	95	21	4.6	85	.41			

Notes: pH (NaF) is the Fieldes and Perrott test. Reaction of 4 is the most rapid and strongest colour. It is described as instant, intense colour within 15 seconds 3+ is described as intense colour within 30 seconds.
CEC is by NH_4OAc buffered at pH 4, 7, and 9.

Bulk density by 100 cc cylinder.

Sample 369b and 371b would be in Hydric subgroups of Hapludands, with about 3 m rain.

Item 3. Duripan in a Udand, Japan

No.29. EI IIItdIIgfnse

1. Location: Kori, Ei-cho, Ibusuki-gun, Kagoshima Prefecture. (Longitude, 130°30' East; Latitude, 31°14' North).
2. Topography: Gently sloping upland; slope 4°; elevation 30 m (100 feet).
3. Climate: Mean annual temperature 16.8°C (62.2°F); annual precipitation 2,337 mm (92.0 inches). (Kagoshima Local Meteorological Observatory).
4. Parent material: Wind blown volcanic ash and sand from Mt Kaimondake.
5. Vegetation (Land use): Common upland field.
6. Profile description:

1. (Ap) 0-12 cm (0 to 5 inches), very dark brown (7.5YR 2/3), dark grayish brown (2.5Y 4/2) when dry, loam, common gravel; fine granular structure, common, very fine pores; loose to slightly compact (7-17 mm), slightly sticky, slightly plastic; semi-moist; many roots; smooth, abrupt boundary.
2. (IIC1) 12-20 cm (5 to 8 inches), brown (7.5YR 4/4), gray (10YR 5/1) when dry, gravel layer (Kora); extremely compact (31 mm), non sticky, non plastic; semi-moist; many roots; smooth, abrupt boundary.
3. (IIIC2) 20-25 cm (8 to 10 inches), grayish brown (10YR 5/2), grayish brown (2.5Y 5/2) when dry, gravel layer (Kora); extremely compact (32 mm), non sticky, non plastic; semi-moist; common roots; smooth. abrupt boundary.
4. (IIIC3) 25-55 cm (10 to 22 inches), dark brown (10YR 3/3), light olive brown (1.25Y 5/3) when dry, gravel layer (Kora); very compact (25 mm), non sticky, non plastic; semi-moist; smooth, clear boundary.
5. (IVC4) 55-65 cm (22 to 25 inches), brown (7.5YR 4/2), grayish brown (10YR 5/2) when dry, gravel layer (Kora); slightly compact

(15 mm) non sticky, non plasti semi-moist; smooth, abrupt boundary.

6. (VA1) 65-95 cm (25 to 37 inches), very dark brown (7.5YR 2/2), dark greyish brown (10YR 3.5/2) when dry, clay loam; massive, many, very fine pores; compact (21 mm), sticky to very sticky, plastic; moist; smooth, abrupt boundary.

7. (VB) More than 95 cm (37 inches), brown (10YR 4/3) clay loam; massive, many, very fine pores; compact (23 mm), sticky, plastic, moist.

Item 4. Example of a spodic subgroup

WAITETI SANDY LOAM

Location:	West of Lake Rotorua, site located in the northern side of Oturoa Road about 4 miles west from its intersection with Ngongotaha-Hamurana Road, New Zealand.
Map Sheet:	N.Z.M.S. 1 N76 Grid reference 626167.
Topography:	Slope: Easy rolling to rolling Landform: Undulating plateau Altitude: 490 m a.s.l.
Soil Drainage:	Well drained
Vegetation:	Present: Improved pasture species - rye grass - white clover (site under browntop and bracken fern). Native: Podocarp forest
Parent Material:	About 15 cm Kaharoa Ash and Taupo Pumice, on 15 cm Rotokawau Ash, on Mamaku Ash, Rotoma Ash, Waiohau Ash, Rotorua Ash and Rerewhakaaitu Ash on ignimbrite.
Climate:	Mean annual rainfall 1800-2000 mm.
Erosion:	Slight wind if cultivated.
Land Use:	Fattening and breeding sheep and cattle, dairying, apple and pear orchards, potatoes.

Soil Classification: N.Z. weakly podzolised yellow-brown loam.

Soil Taxonomy: Vitric Hapludand medial mesic

proposed Spodic Hapludand medial mesic.

Notes: Carrying capacity: Present 12 stock units/ha;

potential: 14 stock units/ha.

Pastures respond to P, K, Mg, S and Ca.

Profile:

0-15 cm: A — very dark brown (10YR 2/2) sandy loam; friable; moderately developed fine nut structure; many roots; few fine Kaharoa and few medium Taupo lapilli; few medium charcoal pieces; distinct worm-mixed boundary,

15-26 cm: II (B) — dark brown (7.5YR 3/4), dark yellowish brown (10YR 4/4) when rubbed; slightly greasy fine sandy loam; friable; moderately developed medium nut and crumb structure; few dark grey (5YR 4/1) medium basalt fragments; many roots; many worm casts of overlying horizon; indistinct boundary,

26-41 cm: (IIIuA) — dark yellowish brown (10YR 4/4) slightly greasy fine sandy loam; friable; moderately developed coarse nut structure; many roots; diffuse irregular boundary,

41-63 cm: (III C) — yellowish brown (10YR 5/6) greasy sandy loam; friable; weakly developed fine blocky structure crushing to weakly developed crumb and single grain structure; few roots; few fine lapilli; few fine black organic matter concentrations; distinct irregular boundary,

63-82 cm: (IV C) — yellowish brown (10YR 5/8) slightly greasy sandy loam; friable; moderately developed coarse blocky structure; distinct thin continuous yellowish red (5YR 5/6) iron coatings on peds; few roots; few black organic matter concentrations; indistinct wavy boundary,

82+ cm	yellowish brown (10YR 5/6) greasy gritty silt loam; slightly
(V C)	firm; strongly developed medium nut structure; few roots;
	few dark brown (7.5YR 3/2) medium and fine carbon concentrations.

WAITETI SANDY LOAM (Taxonomy)

Tax.No.	Horiz	Depth cm	pH H_2O(1:2.5) KCl	pH H_2O(1:2.5) Dry	pH NaF (1:50)	C %	N %	C/N	P(mg%)	P Retn %	Tamms Colours	$CaCO_2$ %	Stones (>2mm) %	Moisture Factor
T30 a	A	0-15	4.5	5.6	10.0	8.3				87	0.86			0.051
b	IIB	15-26	4.8	5.8	10.6	7.1				98	1.02		<1	1.073
c	IIIuA	26-41	5.2	6.1	10.4	3.3				98	0.62			1.060
d	IIIC	41-63	5.4	6.1	9.9	1.6				91	0.34			1.032
e	IVC	63-82	5.6	5.9	9.9	1.2				98	0.23			1.049
f	VC	82-100	5.6	5.8	9.9	1.2				99	0.26			1.060

Tax.No.	Horiz	Depth cm	Cation Exchange (me.%) CEC	Exch Al	Σ bases	%BS	Ca	Mg	K	Na	Exch Acidity	Tamm's Extract (%) Al	Fe	Si	Mn	S (mg%) Total	Adsbd
T30 a	A	0-15	20.2	0.84	3.7	18	2.6	0.46	0.20	0.39	44.2	1.95	0.85	0.58	0.06		
b	IIB	15-26	21.2	0.23	3.1	15	2.5	0.13	0.12	0.34	53.1	3.8	1.51	1.23	0.039		
c	IIIuA	26-41	10.9	0.06	1.6	15	1.3	0.10	0.05	0.14	34.9	3.5	1.64	1.37	0.017		
d	IIIC	41-63	4.8	0.02	1.0	21	0.8	0.08	0.03	0.08	17.3	1.84	0.78	0.78	0.008		
e	IVC	63-82	7.0	0.00	0.7	10	0.4	0.08	0.03	0.22	22.8	3.7	0.66	1.92	0.000		
f	VC	82-100	9.4	0.00	0.9	10	0.6	0.10	0.04	0.17	28.9	4.6	0.83	2.71	0.000		

WAITETI SANDY LOAM (Taxonomy)

Tax. No.		Depth in cm	0.1 M pyro. extractable		Citrate-dithionite extractable		Na Pyrophosphate extractable Fe & Al: Citrate dithionite extractable Fe & Al	Pyrophosphate Fe & Al: Clay	Variable charge CEC 8.2
			% Fe	% Al	% Fe	% Al			
T30	a	0-15							0.91
	b	15-26	0.86	1.37	1.76	2.07	0.58	0.13	0.94
	c	26-41	0.44	0.75	1.92	1.39	0.36	0.03	0.95
	d	41-63	0.19	0.42	0.82	0.57	0.44	0.04	0.94
	e	63-82							0.97
	f	82-100							0.97
7682	C	15-25	1.8	1.6	2.8	1.9	0.72		
7682	D	25-36	0.93	0.64	1.9	1.1	0.52		

WAITETI SANDY LOAM (Physical Analysis: Taxonomy)

Tax. No.	Horiz	Depth (cm)	15 bar water %		Particle size (mm, %) (whole soil)							Δ 15 bar / 15 bar (F.M)	Depth (cm)	As sampled		Cole
			Field moist sample	Air dry sample	Max size (mm)	<2	<0.6	<0.2	<0.06	<0.02	<0.002	%		W.C. %	b.d. Mg/m³	
T30 A	A	0-15	24.5	17.1								30.2	3-6	77.9	0.63	0.04
B	IIB	15-26	45.6	18.5	4	c 100	98	88	67	48	17	59.4	7-10	35.8	0.69	0.02
C	IIIuA	26-41	42.7	13.7								67.9	16-19	48.3	0.70	0.02
D	IIIC	41-63	22.2	6.5								70.7	20-23	42.7	0.75	0.02
E	IVC	63-82	33.6	8.0								76.2	29-32	40.5	0.80	
F	VC	82-100	38.8	11.0								71.6	33-36	40.9	0.81	
													44-47	42.7	0.86	
													48-51	38.9	0.87	
													64-67	60.1	0.81	0.[illegible]
													68-71	62.8	0.76	0.01
T30 B	IIB	15-26											83-86	81.4	0.69	0.03
													87-90	86.9	0.66	0.03

Particle size (mm, %) (fine earth fraction)

	SAND 2-0.5	SILT 0.05-0.002	CLAY <0.002	INT.C.SA 2-0.2	INT.F.SA 0.2-0.02	INT.SILT 0.02-0.002	CLAY <0.002
T30 B IIB 15-26	35	48	17	12	40	31	17

APPENDIX 2

Reactions of amorphous material - Roger Parfitt

The paper by Sadao Shoji and Tsuyoshi Ono in Soil Science 126(5): 297-311 (1978) questions the use of fluoride to determine if "amorphous material" dominates the exchange complex.

We have to ask ourselves what we understand by the term "amorphous material" Is it material which is amorphous to x-rays, is it material with no order or does it have some short range order? Is it soluble in acid oxalate or is it soluble in dithionite? Does it always have a strong fluoride reaction, high P retention and variable charge?

The chemistry of "amorphous material" is dominated by the reactions of large amounts of active Fe and Al. By active, we mean Fe and Al on surfaces; free (Fe)-OH and (Al)-OH groups will be the active groups (Parfitt 1978).

Wherever these groups are present there will be reactions with fluoride and P, and there will be variable charge sites. This means that these reactions will not be specific to Andisols or to allophane which is usually present in Andisols. Indeed crystalline oxides (goethite etc.) also show these properties to some extent.

Fluoride reaction. This reaction is strong with disordered aluminium oxides and aluminium silicates and possibly with disordered $Fe(OH)_3$ (protoferrihydrite?) which has many OH groups. See Perrott et al. 1976, p.351. The reaction is probably correlated with acid oxalate (Tamms) soluble Al and Fe, and soils with high amounts of amorphous iron (Tamms Fe) may also be expected to have a reaction. The reaction is $(Fe, Al)OH + F^- \rightarrow (Fe, Al)F + OH^-$ (High pH).

Phosphate retention. The P retention is very high for disordered $Fe(OH)_3$ if it is present in large amounts, and the retention decreases as minerals become more crystalline. When large amounts of allophane are present the retention is high. The retention is decreased by P fertilisers or organic matter.

Again, it is a reaction with (AlFe) OH groups.

Variable Charge. The ECDAM method gives an estimate of H^+ retained at pH 8.2. It does not differentiate between true exchangeable H^+, which is high when organic matter is high, and H^+ adsorbed on the variable charge sites (Si, Fe, Al-OH groups etc.). This probably explains the high values for topsoil. The variable charge depends on the charge and concentration of the replacing ion (Ba, K, NH_4) and the pH of the point of zero charge so the present method is somewhat empirical.

Allophane and Imogolite. Imogolite has a definite structure and therefore it is not amorphous although it has many properties of "amorphous material". It does react with fluoride (fairly slowly), it has variable charge, it retains P (but less than allophanes), and it dissolves to some extent in acid oxalate. It usually makes up only 5-10% of the clay fraction in volcanic ash soils.

Allophane, from volcanic ash, has a unique spherical structure and cannot be considered to be amorphous (Henmi and Wada 1976). Yet it has all the reactions of "amorphous material" of ECDAM and indeed it is the basic component in so called "amorphous material" in volcanic ash soils. On the basis of recent work it seems that allophanes have disordered imogolite or kaolinite structures. Although chemical composition can vary, the spherical structure is always retained.

Perhaps we should think of using terms like DISORDERED MATERIAL or ACTIVE IRON AND ALUMINUM instead of "amorphous material". The literature suggests that this material is usually dissolved in acid oxalate (0.15 M pH 3.5) and Tamm's Al, Fe and Si would be most useful measurements. Particularly Tamm's Si/Al ratios for allophanic soils.

Sadao Shoji and Tsuyoshi Ono apparently used acid oxalate after using dithionite and this makes interpretation of their data difficult because dithionite dissolves iron oxides (and associated Al) whereas oxalate dissolves

disordered Al and Fe compounds. Dithionite and oxalate should be used on separate samples. Nevertheless their clays do contain high amounts of reactive Fe and Al and possibly are podzolised. They found large amounts of 14Å minerals in their soils and this leads to the tentative suggestion that these soils contain tephric loess. Many New Zealand volcanic ash soils contain loess beds which have been recognised only recently. They often have higher bulk densities and 14Å minerals in the clay fraction. It is a real possibility that sedimentary wind blown material is present in many volcanic ash soils. (The Typic Dystrochrept in Appendix 1 is an example of a soil in New Zealand developed on tephric loess).

I would suggest we continue testing ECDAM but need to bear in mind the doubtful theory behind variable charge measurement. I agree with Hari Eswaran that Tamm's Si/Al ratios could be useful.

References

Henmi (Teruo) and Wada (Koji) 1976. Morphology and composition of allophane. Amer Min. 61: 379-390.

Parfitt, R.L. 1978. Anion adsorption by soils and soil materials. Adv Agron 30: 1-50.

Perrott, K.W., Smith, B.F.L. and Mitchell B.D. 1976. Effect of pH on the reaction of sodium fluoride with hydrous oxides of silicon, aluminium and iron and with poorly ordered alumino silicates. J. Soil Sci. 27 348-356.

Appendix 3: Recipients of ICOMAND 1st circular

N. Ahmad, West Indies
G.N. Alcacid, Philippines
A. Alvarado, Costa Rica
Y. Amano, Japan
F.H. Beinroth, Puerto Rico
L.C. Blakemore, New Zealand
K.S. Birrell, New Zealand
P. Bonfils, France
S.W. Buol, U.S.A.
W.J. Cable, Western Samoa
E.F. Caldas, Canary Islands
F. Colmet-Daage, West Indies
J.B. Dalrymple, England
A.F. Diaz, Mexico
R. Dudal, FAO
H. Eswaran, Belgium
K. Flach, U.S.A.
E. Frei, Switzerland
M.A. Fosberg, U.S.A.
J. and M. Gautheyrou, Guadaloupe
R.A. Gilkeson, U.S.A.
R.B. Grossman, U.S.A.
J. Hetier, France
C.S. Holzhey, U.S.A.
G.L. Huntington, U.S.A.
H. Ikawa, U.S.A.
T. Inoue, Japan
Jae Sung Shin, Korea
Y. Kato, Japan
K. Kawai, Japan
J.H. Kirkman, New Zealand
Ki Tae Um, Korea
L. Lulli, Italy
J.E. McLelland, U.S.A.
M. Mitsuchi, Japan
J. Moinereau, France
F.R. Moormann, Netherlands
D. Muljadi, Indonesia

V.E. Neall, New Zealand

G.A. Neilson, U.S.A.

R. Ortiz, Argentina

M. Otowa, Japan

C.F. Pain, Papua New Guinea

R.L. Parfitt, New Zealand

A.J. Pecrot, FAO

J. Pollok, New Zealand

P. Quantin, France

S. Rieger, U.S.A.

A. Saenz, Costa Rica

M.L. Salguero, Canary Islands

C.O. Scoppa, Argentina

P. Segalen, France

Shin Yong Hwa, Korea

S. Shoji, Japan

G.H. Simonson, U.S.A.

G.D. Smith, The World

M. Soepraptohadjo, Indonesia

W.G. Sombroek, Netherlands

R. Tavernier, Belgium

R.F. Thomas, New Zealand

G. Uehara, U.S.A.

G. van Barneveld, Cameroon

L.P. van Reenwijk, Netherlands

A. van Wambeke, U.S.A.

K. Wada, Japan

J.M. Williams, U.S.A.

A.W. Wood, Papua New Guinea

A.C.S. Wright, Belize

931 1229

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE: A (A - ADD, C - CHANGE, D - DELETE)

PAF

2. DOCUMENT CODE: 5

3. COUNTRY ENTITY: DS/AGR/TSWM RDA-4
Type c. Field Service

4. DOCUMENT REVISION NUMBER: - original

5. PROJECT NUMBER (7 digits): 931-1229

6. BUREAU/OFFICE: A. SYMBOL: DSB; B. CODE: 10

7. PROJECT TITLE (Maximum 40 characters): Soil Management Support Service

8. PROJECT APPROVAL DECISION — ACTION TAKEN: A - APPROVED, D - DISAPPROVED, DE - DEAUTHORIZED

9. EST. PERIOD OF IMPLEMENTATION: YRS 03 QTRS 0

10. APPROVED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 79 F. GRANT	E. 1ST FY 79 G. LOAN	H. 2ND FY 80 I. GRANT	H. 2ND FY 80 J. LOAN	K. 3RD FY 81 L. GRANT	K. 3RD FY 81 M. LOAN
(1) FN	149I	090	-	607	-	720	-	800	-
(2)									
(3)									
(4)									
			TOTALS	607	-	720	-	800	-

A. APPROPRIATION	N. 4TH FY 82 O. GRANT	N. 4TH FY 82 P. LOAN	Q. 5TH FY 83 R. GRANT	Q. 5TH FY 83 S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1) FN	0	-	0	-	2,127	-
(2)						
(3)						
(4)						
TOTALS	0	-	0	-	2,127	-

11. PROJECT FUNDING AUTHORIZED (ENTER APPROPRIATE CODE(S)) 1 - LIFE OF PROJECT, 2 - INCREMENTAL, LIFE OF PROJECT: A. GRANT 2; B. LOAN -

C. PROJECT FUNDING AUTHORIZED THRU FY 81

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED ($000)

A. APPROPRIATION	B. ALLOTMENT REQUEST NO. C. GRANT	D. LOAN
(1)		
(2)		
(3)		
(4)		
TOTALS		

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (Chief, SER/FM/FSD)

SIGNATURE

DATE

14. SOURCE/ORIGIN OF GOODS AND SERVICES: 000 941 LOCAL OTHER

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE MM DD YY	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE MM DD YY

AID 1330-6 (7-76)

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

ENTITY: Bureau for Development Support

PROJECT: Soil Management Support Service

PROJECT NUMBER: 931-1229.11

I hereby authorize grant funds totaling $2,127,000 for a three year field support project on "Soil Management Support Service" to be implemented by a RSSA/PASA with the Soil Conservation Service of the U.S. Department of Agriculture (USDA/SCS).

This project will be incrementally funded on an annual basis with $607,000 in FY1979, $720,000 in FY1980 and $800,000 in FY1981 depending on the availability of funds.

This project was reviewed by the TPCA Sub-committee for Soils on August 9, 1979 and was reviewed and endorsed by the DSB/TPCA Project Review Committee on August 24, 1979.

The Environmental Threshold Determination for this project was signed on July 28, 1978 by AA/DSB who determined that this project "is not a major federal action which will have a significant effect on the human environment".

Tony Babb
Deputy Assistant Administrator
for Food and Nutrition,
Bureau for Development Support

Date: 8/29/79

References:
- Action Memo from DS/AGR:Peterson to DAA/FN/DSB (attached)
- Project Paper for the subject project dated August 14, 1979 (attached)

Clearances:

DS/AGR/TSWM:TGill		Date 8-24-79
DS/AGR/TSWM:GCorey		Date 8/27/79
DS/AGR:MMozynski		Date 8/28/79
DS/AGR:DPeterson		Date 8-28-79
DS/PO:RSimpson		Date 8/29
PPC/PD:BSidma		Date 8-24-79
ASIA/TR:TArndt		Date 8/24/79
NE/TECH:EKMacManus		Date 8/24/79
AFR/DR:LHeilman		Date 8/28/79
LAC/DR:HLusk		Date 8/29/79

AUG 28 1979

ACTION MEMORANDUM FOR THE DEPUTY ASSISTANT ADMINISTRATOR
FOR FOOD AND NUTRITION, BUREAU FOR DEVELOPMENT SUPPORT

FROM: DS/AGR, Dean F. Peterson Dean F. Peterson

Problem: Your approval is required for a new three-year field support project for "Soil Management Support Service" which will require funds totaling $2,127,000.

Discussion: During the past ten years, A.I.D. has expended over $18 million on centrally funded research and development activities dealing with tropical soils management. These activities have helped to stimulate a demand for an increasing amount of specific soil management assistance by the LDC's and A.I.D. missions. This project for "Soil Management Support Service" is designed to provide a centrally funded mechanism to meet this demand and provide systematic technical assistance which will encourage proper use of LDC land resources. This project is composed of two major components: (a) a technical service component which will provide TDY assistance to the LDC's and A.I.D. missions on soil survey, land use planning and soil conservation; and (b) a soil taxonomy improvement component which will revise the U.S. Soil Taxonomy in order to make it more applicable to tropical and subtropical soils and thereby create a cost effective means of sharing agriculture technologies among the LDC's.

This project was initially reviewed by the TPCA Sub-committee for Soils on August 9, 1979. (the minutes of this meeting are attached). Based upon the Sub-committee's comments, the Project Paper was substantially revised. The project was then reviewed and endorsed for approval by the DS/TPCA Project Review Committee on August 24, 1979. (the minutes are attached). The discussions at this last review focused on USDA's responsibilities for Soil Taxonomy in the LDC's and the relationship of the Soil Taxonomy and technical service components in context of A.I.D. missions' and LDCs' needs.

The Soil Conservation Service (USDA/SCS) does not currently have a Congressional mandate in terms of money or positions for work on Soil Taxonomy beyond the soils of the U.S.A. Although SCS is hoping for such a mandate in the future, it is uncertain whether such a mandate will be given. Even if given,it would not be before 3 to 5 years. As a result of DS/AGR's Benchmark Soils projects and related small activities a momentum has been built up in a number of LDC's for assistance in revising Soil Taxonomy for use on important tropical soils. The USDA/SCS through past

A.I.D. funded activities is eager to get involved now. This project, which USDA/SCS will implement, is therefore very timely. In the meantime DS/AGR will encourage and assist USDA/SCS to acquire the desired mandate in the future.

Improvement in Soil Taxonomy in the LDC environments will be based on inputs from LDC scientists (through project funded workshops) as to the relative importance of particular soils in their countries and their specific needs. Improvement will be made in coordination with the FAO, IARC's and prominent international soil scientists who will provide their own time, free of charge, except for travel expenses under this project.

The technical service component is distinct project element with its own budget and is separate from the Soil Taxonomy component. Both components will be managed under an annual workplan to be developed jointly by the DS/AGR project manager and SCS. The project will also have an Advisory Committee, which will include Regional Bureau representatives, to insure a sharp project focus on LDC problems and to facilitate coordination of activities among other agencies and institutions which will be directly or indirectly involved.

Recommendation: That you approve this new "Soil Management Support Service" project by signing the attached PAF.

Attachments:
A/S

Clearances:
DS/AGR:MMozynski MM Date 8/28/79
DS/PO:RSimpson Date 8/28

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA ACTION FORM

DS/PO OFFICIAL FILE

1. TRANSACTION CODE: A - Add; C - Change; D - Delete

PDAF

2. DOCUMENT CODE: 4

3. COUNTRY/ENTITY: DS/AGR — RDA-4

Type B - Adaptation and Application

4. DOCUMENT REVISION NUMBER: - original

5. PROJECT NUMBER (7 digits): 931-1229

6. BUREAU OFFICE: A. Symbol: DSB; B. Code: 08

7. PROJECT TITLE (maximum 40 characters): Soil Management Support Services

8. RELATED DOCUMENT CODE: 1 — 1 - PID; 2 - PRP

9. PROJECT DOCUMENT ACTION (ENTER COMMENT FOR * ITEMS IN BLOCK 13): -

ACTION TAKEN: A - APPROVED; D - DISAPPROVED*; S - SUSPENDED*; CA - CONDITIONALLY APPROVED*; DO - DECISION DEFERRED*

10. APPROVED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE: GRANT	D. PRIMARY TECH. CODE: LOAN	E. FIRST FY ____: GRANT	F. FIRST FY ____: LOAN	G. LIFE OF PROJECT: GRANT	H. LIFE OF PROJECT: LOAN
(1) FN	149J	090	-	2,000	-	7,300	-
(2)							
(3)							
(4)							
		TOTALS		2,000		7,300	-

11. PROPOSED PLANNING RESOURCES: 1 - APPROVED; 2 - DISAPPROVED; 3 - APPROVED AS MODIFIED

12. PROPOSED NEXT DOCUMENT: A. 3 — 2 - PRP; 3 - PP

D. PROPOSED NEXT DOCUMENT DATE: MM 07 YY 78

13. COMMENTS (MAXIMUM 240 CHARACTERS): N/A

14. ACTION REFERENCE: A. AIRGRAMS: ADDITIONAL; TELEGRAMS: STATE; MEMORANDA:

B. ACTION REFERENCE DATE: MM DD YY

15. CLEARANCES

TYPED NAME	TITLE	DATE	INITIALS
a. Tejpal S. Gill	DS/AGR/SWM Project Manager	7-18-78	[illegible]
b. Dean F. Peterson	DS/AGR/SWM Division Chief	7-18-78	[illegible]
c. Stephen B. Engberg / Mary Mozynski	DS/AGR/SWM / DS/AGR	7-18-78	5/2/78 MSM
d. Leon F. Hesser	Director, DS/AGR	7/18/78	[illegible]
e. Cary Kassebaum	DS/PO	7/25/78	[illegible]
f. Robert Simpson	Director, DS/PO	7/20/78	[illegible]

16. RESPONSIBLE BUREAU SIGNATURE: AA/DSB, Sander M. Levin — JUL 28 1978

17. ACTION DATE: MM DD YY

AID 1330-5 (5-77)

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACT CODE: A (A = Add, C = Change, D = Delete)

PID

2. DOCUMENT CODE: 1

3. COUNTRY/ENTITY: DS/AGR RDA-4
Type B - Adaptation and Application

4. DOCUMENT REVISION NUMBER: - original

5. PROJECT NUMBER (7 DIGITS): 931-1229

6. BUREAU/OFFICE: A. SYMBOL: DSB; B. CODE: 08

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS): Soil Management Support Services

8. PROPOSED NEXT DOCUMENT: A. 3 (2 = PRP, 3 = PP); B. DATE: MM 07, YY 78

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION: a. INITIAL FY 79; b. FINAL FY 82

10. ESTIMATED COSTS ($000 OR EQUIVALENT, $1 =)

FUNDING SOURCE	DOLLARS
A. AID APPROPRIATED	7,300
B. OTHER U.S. 1.	
B. OTHER U.S. 2.	
C. HOST COUNTRY	
D. OTHER DONOR(S)	
TOTAL	7,300

11. PROPOSED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. FIRST FY ____ F. GRANT	G. LOAN	LIFE OF PROJECT H. GRANT	I. LOAN
(1) FN	149J	090	--	2,000	--	7,300	--
(2)							
(3)							
(4)							
			TOTAL	2,000	--	7,300	--

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)

021 | 053 | 066 | | 810 | 970

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH)

BS | TECH | | ENVR | TNG | DEL

14. SECONDARY PURPOSE CODE: 179

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

Expand resource capacity for increased food production in low income countries.

16. PROJECT PURPOSE (MAXIMUM 480 CHARACTERS)

Reverse the process of depletion and degradation of LDCs' land resources of small farmers for food production.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)

Consultant services 40 work days - $10,000

18. ORIGINATING OFFICE CLEARANCE

Signature: Leon F. Hesser

Title: Director, DS/AGR

Date Signed: MM 09, YY 76

19. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENT, DATE OF DISTRIBUTION

MM, DD, YY

SOIL MANAGEMENT SUPPORT SERVICES

1. Project Purpose

The purpose of the project is to: 1) reverse the process of depletion and degradation of LDCs' land resources of small farmers for food production; 2) utilize U.S. institutional capabilities to catalyze activities for efficient management of the aforementioned soil resources.

To accomplish these purposes will require systematic long term focused efforts which:

(a) directs attention to creating awareness of problems and opportunities.

(b) provides Benchmark training, technological packages and implementation strategies.

(c) improves basis of agricultural technology transference mechanism.

(d) helps design projects and programs

(e) reviews and monitors past and present experiences.

2. Problem to be Solved

Next to their people the only resource the developing nations have for food production is their land. But severe abuses of the latter resource is occurring in about every developing country with the result that food production is decreasing. Fate of the future generations and security of these nations cannot escape such abuse too long. It might condemn them to misery, possibly forever.

The most immediate urgent need is a comprehensive and a systematic land use planning in LDCs taking into account their resources, needs and their management capabilities. Problems frequently noted are: soil degradation, loss of water shed, overcutting of trees for fuel, widespread overgrazing, poorly planned agricultural and grazing development, wrongly sited settlements, poorly adapted crops, inadequate agricultural technology and poor linkages among land-use and development planning expertise.

This project will focus on creating appropriate catalytic technology infrastructure for land use management to trigger efficient agriculture developmental activities in the LDCs. It will function within and adapt to the respective existing socio-economic environment of these nations.

3. Beneficiaries

This project will stimulate appropriate land-use activities worldwide. It will promote and directly help develop new programs and projects, as well as considerable investment and effort on the part of LDCs and donor agencies. The sum total of this project as well as those of follow-up activities will help facilitate the well-being of the small farmers on a long term basis. The farmer will learn about the potential of his land as well as how to manage that land for his own benefit and for the benefit of the coming generations.

4. Replicability

What this project is proposing is to promote the utilization in LDCs of the principles that have been noted sound and beneficial in developed countries during the past 70 years. These principles include soil conservation, land resources inventories, and planned agriculture to harvest maximum economical potential from the land. In addition, the project suggests that U.S. expertise in tropical soils management which has been developed, strengthened and supported by the Federal Government become the main resource in extension of those principles to LDCs. A viable network of comradery can be established and maintained between U.S. and LDC developmental personnel. The project will assist in coordinated efforts attuned to economy and efficiency.

Project outputs would be generally applicable across the board in developing countries. There will be minimum of duplicative wasted efforts.

5. End of Project

The project is programmed for ten years, but it will be reviewed comprehensively after fourth and seventh year to note its progress and usefulness. It can end earlier than or be extended beyond the ten year period, if necessary.

In broad terms, the project has three key components to promote appropriate land-use planning and utilization. These are:

Awareness: workshops, seminars, publications, situation analysis studies, resource information base, etc.

Training: selective Benchmark programs, training courses, methodologies and materials, etc.

Technical Support: review and design of programs and projects.

Under the generalized categories mentioned above there will be innumerable subject matter specific outputs which will be looked at during the reviews (see attachment for some detail).

6. Probability of Success

There is a very high probability of successfully achieving end of the project conditions. The key elements needed to achieve the project purposes are already in place as a result of AID's past and present activities; these include: experienced manpower resources, suitable technology and methodology, information base and above all a commitment and desire on the part of U.S. expertise institutions and agencies to assist LDCs help stand on their own feet.

7. Critical Assumptions

(a) That U.S. institutions and agencies can make their staff available to the support activities as well as provide facilities for trainees from LDCs.

(b) That this effort will be in effect for at least ten years and that USAID will actively cooperate on this project.

8. Project Implementation

A project paper will be prepared and reviewed to seek the Agency approval for five years, at 7.3 million dollars. Bids will be invited on competitive basis from competent institutions and agencies to provide specific services. Cooperative agreements will be worked out as soon as possible. Hopefully the project will be implemented by early FY 1979.

Detailed work plans and schedules will be formulated with each contractor within the first six months of the project. DS/AGR will work very closely with the Regional Bureaus to coordinate the project activities.

9. Relationship to Regional Bureaus

During an informal presentation the project was received very favorably by the Regional Bureau representatives. It was generally felt that project will not only fill some of the present Bureau and Mission support needs expeditiously but also will provide an essential U.S. leadership to mold urgently needed land-use programs in LDCs in an efficient and systematic fashion. All outputs of this project will directly or indirectly support or facilitate Regional Bureau's agricultural development efforts in LDCs.

10. Staff Implications

The project paper and the management of the project can be accomplished by the existing staff.

11. Budget

Estimated year by year budget of the project is given hereunder (thousands).

FY 1979	FY 1980	FY 1981	Yearly FY 1982 & onward
2,000	2,400	--	1,950

12. Other Issues (Initial Environmental Examination)

The activities of this project fall into the area described in environmental procedure regulations, paragraph 216.2(c), "Analysis, studies, academic or investigative research, workshops and meetings." These classes of activities will not normally require the filing of an Environmental Impact Statement or the preparation of an Environmental Assessment. It is possible that an output of the project will be a set of proposals, procedures, and guidelines which when used would require such an assessment. However, the project itself only proposes developmental programs and activities. Under these guidelines, this activity clearly qualifies for a negative determination at the time when a threshold decision is determined.

APPENDIX - Project Outputs

WORLDWIDE UTILIZATION OF U.S. INSTITUTIONAL CAPABILITIES IN TROPICAL SOILS

	PERCEPTION	USE MECHANISM TO																			MEASUREMENT OF IMPACT
	Subject (Need, Problem Situation) Soil.	Improve		Develop					Communicate			Consult					Note, Study, Report on			
		1 Tool	2 Network	3 Tool	4 Method	5 Training Package	6 Publications	7 Correlating Data	8 Publications	9 Seminars	10 Training Assistance	11 Problem Identification	12 PPS/PPS	13 Review	14 Resource Identification	15 Relevant Information	16 Government Actions	17 Donor Actions	18 Private Sector Actions	19 Public Sector Actions
A	Conservation Technology																			
B	Transference																			
C	Data Bank																			
D	Correlator																			
E	Resource Inventory																			
F	Fertility																			
G	Survey																			
H	Interpretation (Land Util.)																			
I	Taxonomy (Tropics)																			
J	Delivery System																			
K	Plant Adaptation																			
L	Crop Screening																			

U.S. Institutions and agencies

(Competitive bidding)

7/26/78

ENVIRONMENTAL THRESHOLD DETERMINATION

TO: AA/DS, Mr. Sander M. Levin

THRU: DS/PO, Robert Simpson

FROM: DS/AGR, Leon F. Hesser

SUBJECT: Environmental Threshold Determination

Project Title: Soils Management Support Services
Project #: 931-1229
Specific Activity: Adaptation and Application/Type b
REFERENCE: Initial Environmental/Examination (IEE) contained in PID for subject project dated _____ (page 4, Section XII)

On the basis of the Initial Environmental/Examination (IEE) referenced above and attached to this memorandum, I recommend that you make the following determination:

X 1. The proposed agency action is not a major Federal action which will have a significant effect on the human environment.

_____ 2. The proposed agency action is a major Federal action which will have a significant effect on the human environment, and:

_____ a. An Environmental Assessment is required; or

_____ b. An Environmental Impact Statement is required.

The cost of and schedule for this requirement is fully described in the referenced document.

_____ 3. Our environmental examination is not complete. We will submit the analysis no later than _____ with our recommendation for an environmental threshold decision.

Approved: /s/ Sander Levin

Disapproved: _____

Date: 7-28-78 JUL 28 1978

Clearance:
DS.AGR:MMozynski MCM Date 7-18-78
DS/AGR/SWM:TSGill TSG Date 7-18-78
DS/AGR/SWM:DFPeterson DFP Date 7/18/78

NOV 27 1979

ACTION MEMORANDUM FOR THE DEPUTY ASSISTANT ADMINISTRATOR
FOR FOOD AND NUTRITION, BUREAU FOR DEVELOPMENT SUPPORT

THRU: DS/PO, Evaluation Committee

FROM: DS/AGR, John R. Wilson

SUBJECT: Scope of Work for Team Evaluation of 211(d) Grant Project with Tuskegee Institute

Your approval is required to proceed with the attached scope of work to conduct an indepth team evaluation of the 211(d) grant program with Tuskegee Institute. This second year team evaluation will review progress during the grant period with emphasis on current and future utilization of the capacity developed under the 211(d) grant program.

APPROVED: _____

DISAPPROVED: _____

DATE: 12/4

Attachment:
Scope of Work

CLEARANCE:

DS/AGR/ESP, K.Boyd KB Date 11/26/79
DS/AGR, M.Mozynski MM Date 11/29/79
DS/AGR, T. O'Hare TO Date 11/28/79
DS/PO/FN, P. Gage PG Date 11/30/79
DS/PO/FN, A. Silver AS Date 11/30/79

DS/AGR/ESP:WJackson:wj:11/27/79

DS/PO OFFICIAL FILE

SCOPE OF WORK FOR TEAM PROJECT EVALUATION

A. PROJECT TITLE: Comprehensive Planning for Rural Development

PROJECT Number: 931-1299

B. CONTRACTOR/GRANTEE: Tuskegee Institute

C. PURPOSE OF TEAM EVALUATION: The purpose of the evaluation is to review progress during the grant period with emphasis on current and future utilization of the capacity developed under the 211(d) grant program. The team will:

1. Examine how the grant has been used to further sustain and focus a viable institutional response capability for use by LDCs, AID and other donor agencies.

2. Measure progress in achieving goals as outlined in the proposal including an assessment of the assumptions and current status.

3. Evaluate activities planned for the remainder of the grant period in terms of developing the capacity of Tuskegee Institute to respond to LDC problems in rural development. Make recommendations on activities and management to grantee and AID.

D. COMPOSITION OF TEAM:

Dr. Kurt Anschel (Rapporteur). Dr. Anschel is a Ph.D agricultural economist with considerable experience in development research, institution-building and working with minority land-grant colleges. Dr. Anschel has a broad understanding of the needs of LDCs, particularly in the area of agricultural development. He has worked extensively in Africa which is the region on which Tuskegee has focused. He will function as the rappoteur for the project.

Quincy Benbow is an agriculturalist with thirteen years experience in AID. He was the Agricultural Officer in Mali and presently works in the technical office of the Africa Bureau with primary responsibility for the Francophone countries. In addition to Mali, he has worked in Ghana and Cambodia. Mr. Benboe recently visited eight southern minority institutions to gain insight into their capability for international development work. After this assessment visit, he traveled to Senegal, Mali, the Cameroons, and Abidjan with faculty members from two minority institutions to describe their capabilities and potential utilization possibilities with the host country governments and AID.

Gayleatha Cobb has worked on the involvement of minority institutions in the Africa Bureau where she serves as Special Assistant to the Assistant Administrator. She has gained extensive knowledge through her work in the Africa Bureau of alternative mechanisms and possibilities for utilizing the capacity developed at Tuskegee Institute. Ms. Cobb has also served on a utilization review team for Virginia State University. Her experience will be useful on the Tuskegee evaluation.

E. OTHER PARTICIPANTS: Ms. Kathryn Boyd will participate in the review as project leader

F. DATE AND PLACE: The team will make an on-site review at Tuskegee Institute from December 11 through December 14, 1979.

G. PROJECT BACKGROUND: Tuskegee Institute received a five year 211(d) grant in the amount of $750,000 in August of 1977. The grant is designed to develop Tuskegee Institute's response capability and multidisciplinary capacity to assist LDCs in the general area of "Comprehensive Planning for Rural Development," emphasizing farming systems, marketing, community organization and new lands development. Technology transfer for small scale agriculture is an area of primary concern.

The first annual internal evaluation of this 211(d) grant occurred in September 1978. The review team reported that progress had been made in all five major activity areas incorporated in the project design: 1) Research; 2) Education and Training; 3)Advisory and Consultative Services; 4) Information Capacity, and 5) Linkages and Networks. Tuskegee has now completed its baseline study of agricultural extension training in Mali and is seeking additional research activities in Mali and other African countries.

H. PROBLEMS AND ISSUES:

Issue 1. What is the status of present and future research activity? Has the project already initiated in Mali provided useful information for rural development in LDCs? What additional support assistance is needed for Tuskegee Institute to established its overseas program?

Issue 2. Has Tuskegee strenghtened its curriculum and support for the teaching of courses in economics and rural development? What is the status of efforts to support both graduate and undergraduate students in disciplines related to international development?

Issue 3. To what extent has the response capability of faculty and staff members at Tuskegee been strengthened for use in advisory and consultative services through the utilization of grant funds?

END