

PD-AAX-732  
55932

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number  
3

DOCUMENT CODE  
3

COUNTRY/ENTITY

Interregional

3. PROJECT NUMBER

931-1311

4. BUREAU/OFFICE

S&T/AGR/RNR

10

5. PROJECT TITLE (maximum 40 characters)

Soil Management - CRSP

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
09 20 910

7. ESTIMATED DATE OF OBLIGATION

(Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 81

B. Quarter 4

C. Final FY 819

8. COSTS (\$/1000 OR EQUIVALENT \$1 = )

A. FUNDING SOURCE	FIRST FY 81			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	675	75	750	19050	2800	21850
(Grant)	( 675 )	( 75 )	( 750 )	( 19050 )	( 2800 )	( 21850 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.						
1. Universities	250		250	4910		4910
2.						
Host Country		100	100		8553	8553
Other Donors)						
<b>TOTALS</b>	<b>925</b>	<b>175</b>	<b>1100</b>	<b>23960</b>	<b>11353</b>	<b>35313</b>

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)ARDN	141	963		12,180		9,000		21,850	
(2)									
(3)									
(4)									
<b>TOTALS</b>				<b>12,180</b>		<b>9,000</b>		<b>21,850</b>	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

021 092 093 080

11. SECONDARY PURPOSE CODE

121

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code R/AG XII  
B. Amount 12,850 12,850

13. PROJECT PURPOSE (maximum 480 characters)

To conduct soil research in three agroecological zones: the humid tropics, semi-arid tropics and the tropical acid savannas; to increase productivity of these marginal soils on an agronomically, economically and environmentally sound basis

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
11 816 05 818 04 910

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment.)

To extend for 3 years to FY 1989 and to increase authorized Life of Project costs to \$21,850,000.

17. APPROVED BY

Signature  
Anson R. Bertrand  
Agency Director for S&T/FA

Date Signed MM DD YY

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

MM DD YY

Project Authorization

Entity: Bureau for Science and Technology

Project Title: CRSP - Soil Management

Project Number: 931-1311

A. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, the centrally funded Soil Management CRSP project was authorized on September 15, 1981, and amended on November 18, 1985 to permit the use of FY 86 funds to complete the five years' authorized activity. That authorization is hereby further amended as follows:

1. The authorized final year of obligation is extended from FY 1986 to FY 1989.

2. The authorized life-of-project S&T Bureau funding is increased from \$12,850,000 to \$21,850,000 to help in financing the foreign exchange and local currency cost of the project.

3. Source and Origin of Goods and Services

a. Each developing country where training and other assistance takes place under this program shall be deemed to be a cooperating country for the purpose of permitting local currency financing.

b. Goods and services, except for ocean shipping, financed by A.I.D. under the project shall have their source and origin in the cooperating country or in the United States except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the program shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

B. The authorization cited above remains in force except as herein amended.

*N. C. Brady*  
\_\_\_\_\_  
N. C. Brady  
Senior Assistant Administrator  
Bureau for Science and Technology

Date: 5/9/86

Clearances:	S&T/AGR/RNR, JMalcolm	date	
	S&T/AGR, FLi <i>fla</i>	date	<u>4/17/86</u>
	S&T/AGR, TGill	date	<u>4-18-86</u>
	S&T/PO, GGower	date	<u>7 Mar 86</u>
	S&T/FA, ABertrand	date	<u>4/21/86</u>
	GC/CP, STisa	date	

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D.C. 20523

April 16, 1986

ACTION MEMORANDUM FOR THE SENIOR ASSISTANT ADMINISTRATOR FOR  
SCIENCE AND TECHNOLOGY

THRU: S&T/FA, Anson R. Bertrand *Anson R. Bertrand*  
FROM: S&T/AGR, Tejpal S. Gill, Acting Director *Tejpal S. Gill*  
SUBJECT: Soil Management Collaborative Research Support  
Program (CRSP), project 931-1311 (Document 0001)

Problem: Your approval is requested for a three year extension  
and increased authorization for the subject project.

Discussion: The Soil Management CRSP (TropSoils) was authorized  
September 15, 1981, and the present grant will expire  
September 25, 1986. The Management Entity is North Carolina  
State University (NCSU). The participating institutions are  
Cornell University, NCSU, Texas A&M University and the  
University of Hawaii. The four primary sites for research  
overseas are Brazil, Indonesia, Niger and Peru. Resident  
faculty, research assistants and host country counterparts are  
stationed at all four primary overseas sites. An adaptation  
test site has been established in Mali which is staffed by the  
host country but is overseen by the Texas staff posted in Niger  
or on TDY from the U.S.

The number of participating U.S. universities was limited to  
six during the planning phase, and further reduced to four when  
some planned elements were excluded from the final program. The  
need for on-site U.S. professional personnel limited the number  
of LDCs which could reasonably be involved as research  
collaborators.

Several innovations were introduced in this CRSP. Host country  
representatives are included on the Board of Directors and the  
External Evaluation Panel (EEP) is limited to only three  
members, with provision for consultants to provide specialized  
expertise regarding different agro-ecological zones which form  
the basis of the activity categorization.

In addition to providing members to the Board of Directors of  
the CRSP, the host countries have appointed counterparts to the  
U.S. scientists assigned to the field, provided facilities and  
a portion of the operating expenses. The Missions have  
assisted in negotiations with the host country and some have  
also funded complementary activities. The International Crops

Research Institute for the Semi-Arid Tropics (ICRISAT) has provided facilities to one of the Texas scientists in Niamey, Niger, while Texas conducted a detailed soil survey of the ICRISAT station there which demonstrated that the site was typical of a large geographic area.

The Texas team coordinated its fertilizer trials in Niger with the International Fertilizer Development Center (IFDC) to avoid duplication and competition. The International Potato Center provided administrative support to NCSU in Peru and in return had day to day supervision of its lowland tropical potato trials at the Yurimaguas station. The International Center for Tropical Agriculture (CIAT), the International Institute for Tropical Agriculture (IITA) and the International Rice Research Institute (IRRI) provided planting material with critical genetic characteristics to match soil, climate and cultural requirements of the TropSoils research sites and in return received well documented reports of the behavior of that material under conditions for which data were lacking previously. The International Center for Research in Agro-Forestry (ICRAF) is funding a supplementary agro-forestry program in Peru which is overseen by the CRSP team there.

Review and Evaluation: The formal triennial review was conducted by the Joint Committee on Agricultural Research and Development (JCARD) and the Agriculture Sector Council subcommittees on April 10, 1985. In addition to the formal published reports, oral reports were heard from the Director of the Management Entity, the four Principal Investigators, the Chairman of the Board, and the Chairman of the EEP. One or more of the EEP members visited every overseas site and the campus of every participating university. Cables from the four missions where the universities have staff posted rated highly both the management and the achievements of the CRSP.

Significant results were reported. A TropSoils scientist demonstrated that a sparse mulch of trimmings discarded by firewood cutters could promote the natural reseeding of trees and shrubs in the Guessehbodi forest of Niger, and increase soil porosity and the infiltration of water, reducing rainwater run-off, helping plants to withstand drought. A West Texas "sandfighter" was adapted for animal traction and shown to protect seedling millet from sandblasting and burial during dust storms.

An underexploited legume, mucuna, was found and tested in the Cerrado of Brazil as a cover crop. This hardy plant will survive the prolonged dry season and grow quickly with the onset of the rains. It will tolerate the extremely acid soils of the region. When a mucuna covercrop is incorporated into the soil it will supply enough nitrogen to produce a satisfactory corn crop.

Yields in the Amazon basin of Peru at Yurimaguas have been sustained over thirty crops when essential plant nutrients were replaced with fertilizer at rates comparable to those used in the U.S. and other developed countries. Associated research has demonstrated that through the use of crops tolerant of acid soil and high aluminum concentrations, rotation of legumes and cereals, and complete return of crop residues, even a slash and burn crop cycle can be extended, giving yield five times greater than those on farmers' fields. This provides a transition technology between traditional agriculture and the high input system appropriate for commercial farming. Paddy rice management demonstrated by CRSP personnel but funded from local resources has provided the basis for thriving farms along the Huallaga. Many of the pioneer rice farmers are former field laborers at the Yurimaguas experiment station who learned the rice crop, soil and water management while working on the trials and demonstrations.

On the basis of the material presented, both of the subcommittees determined that the CRSP goals were still valid, that progress toward the goals was satisfactory, and that the administrative management of the program justified a three year extension beyond the initial five years. BIFAD and the Agriculture Sector Council concurred in the recommendations.

Funding: The funding requested is consistent with the projections in the FY 87 Annual Budget Submission, \$3,000,000 per year for the additional three years. While funding at this level from S&T is no longer in prospect, authorization at this level is requested to accommodate potential mission buy-ins. This will increase the authorization from \$12,850,000 to \$21,850,000 and extend the final year of obligation to FY 1989. The Congressional Presentation for FY 1986 page 33 indicated an allotment of \$2,950,000 for this CRSP on the assumption that the extension would be authorized. Subsequently only \$2,600,000 was made available under the OYB allotments.

Recommendation: That you sign the attached project authorization amendment for a three year extension of the Soil Management CRSP to FY 1989 and for an increase in the authorized life of project cost from \$12,850,000 to \$21,850,000.





# North Carolina State University

School of Agriculture and Life Sciences

Management Entity  
Soil Management CRSP  
Box 7113, Raleigh 27695-7113  
(919) 337-3822

March 4, 1985

Dr. Anson Bertrand, Director  
Office of Agriculture  
Bureau of Science and Technology  
Agency for International Development  
Washington, DC 20523

Dear Dr. Bertrand:

On behalf of North Carolina State University, the Management Entity for the Soil Management CRSP funded under Grant DAN-1311-G-SS-1083-00, I am requesting a three-year extension with additional funding of \$9,000,000 to support continuation of the program. The extension and financial support are needed to achieve more completely the goals set forth in the original grant.

In support of this request, the following documents are enclosed.

1. TROPSOILS PROGRAM PLAN, 1984-1989, which includes a synopsis and details on program and budget matters.
2. TROPSOILS, the first three years - a review of the background and highlights of the program to date written for a broad audience interested in international development agriculture.
3. TROPSOILS TRIENNIAL TECHNICAL REPORT, 1981-1984 - a report of research in progress written for a technical audience.
4. TROPSOILS, the first three years and beyond - a summary of the background, highlights and research plan.
5. TROPSOILS EXTERNAL EVALUATION - a report on the studies by the External Evaluation Panel of the various components of the program.

Dr. Anson Bertrand  
Page 2  
March 4, 1985

We look forward to discussing the substance of these documents during the oral review scheduled for April 10. In the meantime if we can provide additional information or details, please let me know.

Sincerely,

*C. B. McCants*

C. B. McCants  
Director

CBM:kss

Enclosure

cc: Dr. Fred W. Johnson, BIFAD Liaison  
Dr. John L. Malcolm, Program Manager  
Dr. Ada Demb, Chairman, Board of Directors  
Dr. Frank G. Calhoun, Chairman, Technical Committee  
Dr. John Coulter, Chairman, External Evaluation Panel  
Dr. J. L. Apple, Coordinator, International Programs, NCSU

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BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT  
INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Agency for International Development  
Washington, D.C. 20523

July 31, 1985

Dr. Anson Bertrand  
Agency for International Development  
Office of Agriculture  
Room 409, SA-18  
Washington, D. C. 20523

Dear Anson,

This is to advise the Agency that the Board for International Food and Agricultural Development (BIFAD) at its meeting on June 6, 1985 acted on the recommendation of the Joint Committee on Agricultural Research and Development (JCARD) and by a formal resolution, passed unanimously, approved the recommendations that the Tropical Soils Management (TROPSOILS) Collaborative Research Support Program (CRSP) be extended for five years and that funding for the program be authorized for three years. The Board was impressed with the performance and accomplishments of this CRSP and is pleased to inform the Agency of its resolution.

Sincerely,

*/s/*

John G. Stovall  
Interim Executive Director

AUG - 1 REC'D

SOIL MANAGEMENT CRSP REVIEW  
April 10, 1985

NAME	ASSOCIATION	PHONE
John Malcolm	ST/AGR	(703) 235-1275
William Fred Johnson	BIFAD Staff	(202) 632-7332
Frank Calhoun	Texas A&M University	(409) 845-8302
Pedro Sanchez	North Carolina State U.	(919) 737-2838
Rodney Foil	JCARD	(601) 325-3005
J. Lawrence Apple	North Carolina State U.	(919) 737-2665
Thurman L. Grove	Cornell U.	(607) 256-2287
Goro Uehara	University of Hawaii	(808) 948-6593
Wilbur G. Thomas	NE/TECH/AD	(202) 632-9256
Ada Demb	University of Hawaii	(808) 948-6440
John Coulter	World Bank	(202) 676-1766
Loren Schulze	ST/AGR/AP	(703) 235-1497
David Cummins	U. Georgia/Peanut CRSP	(404) 228-7312
Abe Waldstein	ST/RD/RRD	(703) 235-3944
Bob Jackson	ST/AGR/AP	(703) 235-1497
Frances Li	ST/AGR	(703) 235-8954
Everett Headrick	AFR/TR/ARD	(202) 632-3911
Ed Rice	ASIA/TR/ARD	(202) 632-9102
Harlan Davis	ST/AGR	(703) 235-8899
Marlowe Thorne	U. Illinois/EEP	(217) 367-9225
Raymond E. Meyer	ST/AGR/RNR	(703) 235-8993
Douglas J. Lathwell	Cornell U.	(607) 256-4540
Anson R. Bertrand	ST/AGR	(703) 235-8952
C.B. McCants	TROP SOILS	(191) 737-3922
Thomas H. Lederer	PPC/PDPR	(202) 632-1346

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title & Number: Soil Management CRSP 931-1311

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To increase food, fibre and agricultural commodities for industrial use while increasing human productivity and protecting the natural resource base of developing countries.</p>	<p>Measures of Goal Achievement:</p> <p>1. Sustained superior yields on controlled experimental plots. 2. Acceptance by farmers of practices. 3. Continued farming of fields which would be abandoned under normal practice. 4. Slowing the rate of movement into forests and onto steep mountain lands.</p>	<p>1. Project progress reports. 2. USAID assessments. 3. Host government reports EEP observations. 4. Press recognition.</p>	<p>Assumptions for achieving goal targets:</p> <p>1. That sufficient time has elapsed to permit dissemination of research results to farmers. 2. That necessary economic and policy constraints have been removed. 3. That correctable infrastructure barriers have been removed.</p>
<p>Project Purpose: 1. To define soil problems which constrain farm production on underutilized land in the humid tropics, the wet/dry tropics and the semi-arid tropics. 2. To develop soil and crop management practices which will substantially increase yields and returns to labor, will be economically sound and will provide a basis for permanent agriculture.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status. 1. The clear definition of soil problems in humid tropics, wet/dry tropics and semi-arid tropics. 2. Demonstration of practices which successfully overcome soil constraints. 3. Adoption of practices of soil and crop management by farmers. 4. Implementation of LDC government policies which encourage acceptance of practice based on research.</p>	<p>1. Project reports, theses and journal publications. 2. Assessment by S&amp;T project liaison officer. 3. EEP reports. Mission project review and forwarding host government reports. 4. Use of research results in other countries reported by USAIDs, host institutions or popular press.</p>	<p>Assumptions for achieving purpose: 1. Political situation has allowed continued access to field sites in host LDCs. 2. That competent staff could be retained. 3. That host country could provide counterparts, especially for assignment for longterm training when it was essential to carry out the project research. 4. That host country funding was available to sustain the new or expanding host institutions.</p>
<p>Outputs: 1. Studies of weather, soil and water interactions which limit plant growth. 2. Analyses of cultural and economic factors which limit the adoption of technically better farm management practices. 3. A series of cost effective management practices which may be used to overcome constraints to a significant degree. 4. Rational basis for extending and adapting soil management practices from research sites to other areas within the agro-ecological zone. 6. Trained people at both professional and support levels. 6. New and/or strengthened institutions in LDCs and the U.S.</p>	<p>Magnitude of Outputs: 1. Number of reports and articles generated from research. 2. Number of distinctive package of practices designed and demonstrated. 3. Area on which research based practices have been adopted. 4. Potential area to which they may be adopted. 5. Degrees awarded. 6. Support staff employed on project, elsewhere in government or at comparable jobs in private sector.</p>	<p>1. Counts of reports, publications and news releases. 2. Estimates of adoption by ministries of agriculture and others. Reports by buyers. 3. Tax records or traffic reports. 4. Farm supply records.</p>	<p>Assumptions for achieving outputs: 1. Continued and timely supply of inputs will be available throughout life of project. 2. That acceptance of publication of articles will not be unduly delayed. 3. Professional staff and students can be recruited in a timely manner and retained in the program. 4. Formal and informal extension services will carry practices to farmers. 5. Adequate means is provided to verify the outputs.</p>

**Inputs:** 1. A grant for up to \$3 million per year from 1986 through 1989. 2. Matching contributions equal to 25% of AID grants to the U.S. university participants. 3. Substantial funding of local costs, facilities and land by host LDCs. 4. Commitment of faculty, professional and support staff to the research and management of the project. 5. A highly qualified external evaluation panel. 6. Essential equipment and supplies.

**Implementation Target (Type and Quantity)**

1. Extension authorized by May 1, 1986. 2. Incremental funding of grant by August 1, 1986. 3. All staff positions filled by January 1, 1987. 4. Triennial review commence in October 1987. 5. Six graduate degrees awarded per year 1986 and after.

1. Documentation dates. 2. Progress reports. 3. Vouchers claiming payment through letter of credit. Record of degrees awarded.

**Assumptions for providing inputs:**

1. Appropriations for A.I.D. will permit full funding of project. 2. Universities can muster counterpart funds. 3. Professional staff and students can be recruited in a timely manner and retained by the project.

Table 1. Soil Management CRSP - Summary  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	4128	1019	1047	1067	7261
Fringe Benefits	734	198	210	213	1355
Supplies	1047	295	276	265	1883
Equipment	845	174	166	143	1328
Travel	1485	321	324	322	2452
Allowances	524	162	152	156	994
Other Direct Costs	1496	197	185	183	2061
Indirect Cost	2491	634	640	651	4416
Total	12750	3000	3000	3000	21750

Table 2. Soil Management CRSP Acid Savanna - Cornell  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	341	138	143	151	773
Fringe Benefits	45	15	19	20	99
Supplies	48	19	19	16	102
Equipment	64	12	9	9	94
Travel	135	49	54	52	290
Allowances	82	39	32	31	184
Other Direct Costs	67	14	14	13	108
Indirect Cost	268	99	95	93	555
Total	1050	385	385	385	2205

Table 3. Soil Management CRSP Humid Tropical Research - Hawaii  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	666	185	189	193	1233
Fringe Benefits	189	56	61	61	367
Supplies	180	48	44	38	310
Equipment	138	23	1	1	163
Travel	284	58	65	62	469
Allowances	71	26	25	24	146
Other Direct Costs	191	39	42	49	321
Indirect Cost	523	166	174	173	1036
Total	2242	601	601	601	4045

Table 4. Soil Management CRSP Humid Tropical Research - NCSU  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	1715	309	314	325	2663
Fringe Benefits	200	39	40	42	321
Supplies	352	58	50	55	515
Equipment	204	23	52	23	302
Travel	517	97	92	96	802
Allowances	249	52	47	52	400
Other Direct Costs	962	111	94	87	1254
Indirect Cost	878	141	141	150	1310
Total	5077	830	830	830	7567

Table 5. Soil Management CRSP Semi Arid Tropics - Texas A&M  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	972	264	272	273	1781
Fringe Benefits	220	63	65	65	413
Supplies	201	51	53	53	358
Equipment	311	51	39	40	441
Travel	386	90	87	87	650
Allowances	86	25	25	23	159
Other Direct Costs	233	20	21	20	294
Indirect Cost	467	114	116	117	814
Total	2876	678	678	678	4910

Table 6. Soil Management CRSP - Management Entity  
Budget by Objective and Year

Object	Year				Total
	81-86	87	88	89	
Salaries and Wages	434	123	129	125	811
Fringe Benefits	80	25	25	25	155
Supplies	266	119	110	103	598
Equipment	128	65	65	70	328
Travel	163	27	26	25	241
Allowances	36	20	23	26	105
Other Direct Costs	43	13	14	14	84
Indirect Cost	355	114	114	118	701
Total	1505	506	506	506	3023