

I. PROJECT IDENTIFICATION

1. PROJECT TITLE
National Soils Fertility

APPENDIX ATTACHED
 YES NO

2. PROJECT NO. (M.O. 1095.2)
514-11-120-164

3. RECIPIENT (specify)
 COUNTRY **COLOMBIA**
 REGIONAL INTERREGIONAL

4. LIFE OF PROJECT
BEGINS FY **75**
ENDS FY **75**

5. SUBMISSION **2/20/75**
 ORIGINAL
 REV. NO. DATE
CONTR./PASA NO.

FILE

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMODITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US = 32 pesos (U.S. OWNED)		
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT LOAN	(2) COOP COUNTRY (A) JOINT (B) BUDGET	
1. PRIOR THRU ACTUAL FY												
2. OPRN FY 75	130	130	50									
3. BUDGET FY												
4. BUDGET 11 FY												78
5. BUDGET 12 FY												80
6. BUDGET 13 FY												
7. ALL SUBQ. FY												
8. GRAND TOTAL	130	130	50									158

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER DSteen	TITLE Ag. Economist	DATE 2/19/75
2. CLEARANCE OFFICER DPearson/JMartin/Richwab/N. A. Ellis	TITLE A/RDO/CON/DD/DIR	DATE 2/20/75

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE

3. APPROVAL AAs OR OFFICE DIRECTORS
SIGNATURE _____ DATE _____

4. APPROVAL A/AID (See M.O. 1025.1 VI C)
SIGNATURE _____ DATE **2/20/75**
ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

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I - RATIONALE

A. BACKGROUND

A very high rate of inflation in retail food prices in Colombia during the past two years has dramatically emphasized the need to expand domestic production. To a large extent Colombia possesses the basic requisites to accomplish this task; large areas of unutilized and underutilized land, fairly sophisticated public institutions containing a large number of well trained agriculturalists, unexploited basic resources required for domestic production of fertilizers, and diverse climatic and soil conditions suitable for the production of a wide range of agricultural products. Yet despite those favorable characteristics and relatively high producer prices for many commodities, basic indicators (such as production and price statistics) strongly suggest that domestic production is not keeping pace with increasing domestic demand. Consequently, USAID/Colombia is seeking various means to have a catalytic impact on stimulating expanded production, especially of products of major importance to domestic consumers. Thus the goal of certain activities already underway and others to be formulated with the Colombian government, is to increase the supply of food at lower stable prices.

At the same time it is clearly recognized that there are a large number of small farms in Colombia (approximately 60% of the farms are less than 12 acres) and large numbers of rural poor. For several years USAID/Colombia has supported various GOC efforts (such as the ICA "integrated rural development projects", now 21 in number and INCORA Supervised Credit) toward accomplishing the goal of increasing incomes and employment in the small farm subsector. New information and approaches are constantly being sought to improve the programs directed at this important problems.

Under the Lopez government emphasis has been placed on the area of nutrition. Six inter-agency, interdisciplinary working groups have been established to develop a National Food and Nutrition Plan. This group has been using a commodity systems approach. The data analysis part of this project will play an important role in identifying bottlenecks in the commodity systems.

B. CURRENT SITUATION

As evidenced in data available, Colombian agricultural production is generally characterized by low yields and high production costs (associated with low yields). This suggests that the identification and wide spread adoption of improved technology is a critical part of the equation in both stimulating expanded production and in increasing small farmer income. The NCSU project is intended to be one of the catalysts which will contribute to these goals. (Others which have already been identified and are underway are: TVA assistance to the fertilizer industry, no-tillage cropping trials, commercial-scale demonstrations of new technologies, research in the llanos and the restructuring of the forced investment system of the commercial banks to include small farmers.

The Soils Fertility Project is actually underway at this writing, funded under a Regional Contract with the North Carolina State University. Under the Regional Contract funds are provided for the necessary multiple analysis equipment for the ICA soil testing laboratory at Tibaitata. This equipment has been ordered and this aspect of the project, although not funded will be monitored under this PROP.

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C. PROJECT PURPOSES

The immediate purpose of the NCSU Soil Fertility Project is to strengthen Colombia's research and promotional programs involving the use of fertilizers and other soil amendments. Some of the proposed NCSU contributions are quite specific and technical, e.g., the development of modern soil analysis facilities and the introduction of new analytical methods. However, a major potential contribution by NCSU is expected to be in the field of data analysis using new statistical methodology developed by NCSU personnel. While these new methods were developed for interpretation of soil fertility research data, they can have wide applicability in other fields. At the same time soil management recommendations should not be made in a vacuum. Therefore, the project has two major aspects:

1. Technical assistance to ICA's soil fertility program.
2. Advisory activity in an overall ICA data analysis project.

The data analysis portion of the project has as its purpose the comparative economic evaluation of production technology for the major crops and the major ecological zones. The project will carry out integrated, uniform analyses of data from all pertinent sources -- ICA and other experiments, OPSA and other surveys, Agustin Codazzi and other resource maps, etc. The end result will be a comprehensive evaluation of Colombia's present and potential agricultural production technology, with emphasis on comparative advantage, quantified geographically.

NCSU will undertake the following activities as the central focus for a coordinated program to develop, evaluate and disseminate crop production technology related to fertilizer use.

1. Monitoring of the soils testing laboratory at Tibaitatá (ICA).
2. Provide one full time locally-based representative of the contract who would spend most of his first year organizing and advising a program of technological/economic evaluation of a vast quantity of existing soil fertility response data, soil-climate resource data, and farm level questionnaire data. The objective would be to determine and compare technological alternatives, by crop, for the major ecological zones of the country.
3. Provide approximately one month TDY by Raleigh staff as required annually to ensure that the laboratory is maintained at high levels of efficiency and reliability. This TDY would also be utilized to train laboratory staff in new analytical techniques developed by the regional project.
4. The second year (given sufficient progress on the data interpretation) would be divided about equally between orientation of research on priority problems revealed by the inventory just described (including new areas, such as the Llanos) and organizing an Outreach program to disseminate to planners and change agents the recommendations derived from the first year's evaluation.

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The outreach program would encompass:

- a. Organization of a system for continual dialogue between ICA and credit agencies, on soil fertility matters. *who will coordinate, will cooperate & collaboration an automatic phenomenon*
- b. Expanded efforts to ensure that technological data are adequately incorporated in sector analysis and planning activities. (This process would have been initiated in the first year through the involvement of OPSA in the program).
5. Concomitant with the above activities, the project would work to develop a national soil fertility program through the creation of a work-group comprising representatives of ICA, OPSA, IDEMA, INCORA, CAJA AGRARIA, FFA and the private sector. The intent would be to create a broad-based national organization to encourage and guide soil fertility and technological improvement in Colombia.

D. USAID INPUTS

1. Technical Assistance

The project would provide one full-time locally based soils fertility specialist to implement the ~~goals and purposes~~ *the plan of action* of the project. In addition one man month per year of TDY by NCSU staff will be provided to ensure that the laboratory is maintained at high levels of efficiency and reliability. Both the long term and short term technician will train ICA staff so that they can take over these functions by the end of the project.

E. GOC INPUTS

The GOC, through the Colombian Agricultural Institute (ICA) will provide the physical facility for the laboratory and its maintenance, office space and supplies, computer time and the following personnel services:

- 1 Project Coordinator (Soils Scientist)
- 5 Agricultural Economists
- 2 Statisticians, Programmers
- 3 Soils Scientists
- 4 Laboratory Specialists
- 2 Assistant Laboratory Specialists

F. RELATION TO OTHER USAID PROGRAMS

Agriculture Sector Analysis - It is expected that the 20,000 farm sample will provide considerable farm level economic data for the soils fertility project.

Small Farmer Production IRR - The soils fertility project will play an important role in both the intensive review and the implementation of this proposed loan.

G. RELATION TO OTHER DONORS

There is currently no other donor activity in the area of soils fertility.

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II - LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
<p>A. 1. <u>Program or Sector Goal</u></p> <p>a) The creation of an effective soil fertility service.</p>	<p>A. 2. <u>Measures of Goal Achievement</u></p> <p>a) Increase in the rate of return on fertilizer use measured in constant prices.</p>
MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>A. 3.</p> <p>a) Use of farm survey data</p>	<p>A. 4. That the data will be available.</p>

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
<p>B. 1. <u>Project Purposes</u></p> <p>a) Develop the laboratory facilities and procedures to provide basic soil-testing for a greatly expanded number of clients.</p> <p>b) Implement a program of technology evaluation as a basis of providing sound fertility and technical recommendations.</p> <p>c) Creation of a broad-based national committee or work group to facilitate, encourage and promote soil fertility and technological improvement in Colombia through the creation of an outreach program based upon the above, designed to encourage soil testing, dissemination recommendations and promote use of improved practices.</p> <p>d) Provide data on technology to be incorporated into sector analysis and planning activities.</p>	<p>B. 2. <u>Conditions that will indicate purpose has been achieved: End of Project Status.</u></p> <p>a) The laboratory is handling 500 samples per day during peak seasons.</p> <p>b) That a comprehensive inventory of technology for various areas of the country exists.</p> <p>c) Existence of both the work group and a promotional program.</p> <p>d) That the information developed in (b) is being incorporated into the planning processes of the sector.</p>
MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>B. 3.</p> <p>a) Visual Inspection</p> <p>b) ICA Reports</p> <p>c) NCSU Reports</p> <p>d) AID Records</p>	<p>B. 4. None</p>

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NARRATIVE SUMMARY

C. 1. Project Outputs

- a) A laboratory, centrally located, capable of processing 500 samples daily with facilities for a feasible expansion to meet even greater demand.
- b) Identification of economic technologies as a basis of general crop and area recommendations.
- c) Basic data on crop technologies by area as an input to sector analysis and planning.
- d)

OBJECTIVELY VERIFIABLE INDICATORS

C. 2. Magnitude of Output

- a) Existence of the laboratory with a 500 sample per day capacity.
- b) At least 80% of all existing data will have been analyzed.
- c) That reports exist on technologies for at least 75% of the 20 major departments of the country.

MEANS OF VERIFICATION

C. 3.

- a) Visual inspection
- b) NCSU Reports
- c) ICA Reports

IMPORTANT ASSUMPTIONS

C. 4. None

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS														
<p>D. 1. <u>Project Inputs</u></p> <p>a) AID</p> <p> 1) Technical Assistance</p> <p>b) GOC Inputs</p> <p> 1. Personnel</p> <p> 11. Physical Facilities, Supplies and computer time</p>	<p>D. 2. <u>Implementation Targets</u></p> <table border="0"> <tr> <td>a) FY 76</td> <td>FY 77</td> </tr> <tr> <td> 25 mm/</td> <td> 25 mm/</td> </tr> <tr> <td> \$65,000</td> <td> \$65,000</td> </tr> <tr> <td>b) 204 mm/</td> <td> 204 mm/</td> </tr> <tr> <td> \$58,000</td> <td> \$60,000</td> </tr> <tr> <td>11) \$20,000</td> <td> \$20,000</td> </tr> <tr> <td>Total GOC \$78,000</td> <td> \$80,000</td> </tr> </table>	a) FY 76	FY 77	25 mm/	25 mm/	\$65,000	\$65,000	b) 204 mm/	204 mm/	\$58,000	\$60,000	11) \$20,000	\$20,000	Total GOC \$78,000	\$80,000
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Total GOC \$78,000	\$80,000														
MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS														
<p>D. 3.</p> <p>a) AID Records</p> <p>b) ICA Records</p>	<p>D. 4 None</p>														

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III - COURSE OF ACTION

1. Organize existing farm survey data for analysis.
2. Analysis of the farm survey data by crops and by regions of the country.
3. Organize the existing soil fertility data for analysis.
4. Analysis of the soils fertility data by crop and region.
5. Formulate new fertilizer recommendation guides.
6. Organize National work group and begin outreach program.
7. Monitor and test the new recommendations.

DRAFT

ISSUES - COLOMBIA SOILS FERTILITY

1. Project Experience to Date

This was originally an AID regionally-funded project. Agreement was reached to have those Missions interested in continuing these activities submit PROPs for direct financing. Colombia did not participate fully in the regional program; however some recent work has been started in anticipation of this PROP's approval. The project aims at strengthening Colombia's research and promotional programs involving the use of fertilizer and other soil amendments. The AID inputs will be limited to technical assistance providing data analysis using new statistical methodology. In spite of the long experience under the Regional contract, the PROP does not contain any insights which would indicate that the project has been successful in its previous 10 years' experience. The DAEC will wish to discuss this prior experience, what lessons have been learned, and how they are being applied in this project.

This discussed at previous DAEC meeting when we decided to go with

2. Project Design and Budget

The PROP proposes \$130,000 to fund 50 mm of technical assistance. The budget on page 8 states that AID will provide 25 mm each year for two years (FY 76/77) at a cost of \$65,000 per year. The text of the PROP, however, indicates that AID assistance will be limited to "one full-time locally based soils fertility specialist to implement

the goals and purposes of the project" (plus one man-month per year of short-term TDY). Which is correct; the budget or the text? If the latter, AID assistance should only be \$65,000 instead of the proposed \$130,000. The DAEC will seek to clarify the point.

3. Verifiable Indicators/Assumptions

Verifiable indicators listed in the PROP are minimal (i.e. existence of a laboratory with a 500 sample per day capacity) and no assumptions are provided. The absence of such information inhibits the analysis of the project, what it intends to accomplish, and what other factors will affect its success or failure. The DAEC will discuss whether other types of indicators and assumptions can be developed, including the relative magnitude of importance of improved technology through more efficient fertilizer usage compared to some of the basic issues regarding development. Is adequate attention being given, for example, to basic changes that may be needed (such as equitable land reform and proper utilization, availability of inputs (fertilizer), adequacy of incentive prices to farmers, the existence of relatively efficient marketing systems for distributing outputs, etc.)?

4. Target Farmer

Laboratory facilities will be established to test (process) 500 soil samples per day during peak season. Will a mechanism be incorporated to assure that small

farmers are being served by the testing service? What % of the services are provided to large farmers? No mention is made of the soil sample collecting, shipment to the laboratory, and providing of individual technical recommendations for these soils, by crop. In addition, will the formulation of "fertilizer recommendation guides" be a "by-product" of the soil test services being provided to farmers?

5. Coordination

The organization of a system (work group) comprising ICA, OPSA, IDEMA, INCORA, CASA AGRARIA, FFA and private sector is commendable, providing that mechanisms for coordination exist. How will this work group affect the judicial provision of credit, for example, to a small farmer?

6. Time Span

The PROP provides funding for two years. Is this time frame adequate to ¹institutionalize a system of soil testing for improving production technology?

DRAFT:LA/DR:RVenezia:ar:3/17/75

LA/DR J Hayes

MAR 18 1975

INFORMATION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LA)

FROM: John R. Breen, LA/DR

SUBJECT: ISSUES PAPER:
Colombia National Soils Fertility PROP

The DAEC will meet at 2:30 PM on March 19, 1975, to review a proposal for \$135,000 to assist the Government of Colombia to strengthen its research and promotional programs involving the use of fertilizers. The project, to be implemented by the North Carolina State University and the Colombian Extension Service (ICA), will provide technical assistance to ICA's soil fertility and data analysis program. The assistance aims at producing a comprehensive evaluation of Colombia's present and potential agricultural production technology.

The proposal calls for obligation of funds during FY 75, with expenditures to take place through FY 76/77. The project was not included in the FY 75 Congressional Presentation and special notification to Congress will be required.

The DAEC will discuss the following issues:

1. Project Experience to Date: This was originally an AID regionally-funded project. Agreement was reached to have those Missions interested in continuing these activities submit PROPs for direct financing. Colombia did not participate fully in the regional program; however, some recent work has been started in anticipation of this PROP's approval. The project aims at strengthening Colombia's research and promotional programs involving the use of fertilizer and other soil amendments. The AID inputs will be limited to technical assistance providing data analysis using new statistical methodology. In spite of the long experience under the regional contract, the PROP does not contain any insights which would indicate that the project has been successful in its previous ten years' experience. What compatibility exists between this project and the redirected regional program? The DAEC will wish to discuss this prior experience, what lessons have been learned, and how they are being applied in this project.

2. Project Design and Budget: The PROP proposes \$130,000 to fund 50mm of technical assistance. The budget on page 8 states that AID will provide 25mm each year for two years (FY 76/77) at a cost of \$65,000 per year. The text of the PROP, however, indicates that AID assistance will be limited to "one full time locally based soils fertility specialist to implement the goals and purposes of the project" (plus one

man-month per year of short-term TDY). Which is correct; the budget or the text? If the latter, AID assistance should only be \$65,000 instead of the proposed \$130,000. How much of the proposed budget is earmarked for Colombia's share of the overhead costs, if any, of the regional project? The DAEC will seek to clarify the point.

3. Verifiable Indicators/Assumptions: Verifiable indicators listed in the PROP are minimal (i.e., existence of a laboratory with a 500 sample per day capacity) and no assumptions are provided. The absence of such information inhibits the analysis of the project, what it intends to accomplish, and what other factors will affect its success or failure. The DAEC will discuss whether other types of indicators and assumptions can be developed, including the relative magnitude of importance of improved technology through more efficient fertilizer usage compared to some of the basic issues regarding development. Is adequate attention being given, for example, to basic changes that may be needed (such as equitable land reform and proper utilization, availability of inputs (fertilizer), adequacy of incentive prices to farmers, the existence of relatively efficient marketing systems for distributing outputs, etc.)?

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