

UNCLASSIFIED

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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PANAMA

PROJECT PAPER

AGRICULTURAL TECHNOLOGY DEVELOPMENT
(Amendment # 1 & 2)

AID/LAC/P-310 CR 028

Loan Number: 525-T-050
Project Number: 525-0180

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input checked="" type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number <u>Two</u>	DOCUMENT CODE 3
2. COUNTRY/ENTITY PANAMA	3. PROJECT NUMBER <input type="checkbox"/> 525-0180		
4. BUREAU/OFFICE USAID/Panama	5. PROJECT TITLE (maximum 40 characters) <input type="checkbox"/> Agricultural Technology Development		
6. PROJECT ASSISTANCE COMPLETION DATE (FACD) MM DD YY 1 2 3 1 8 7	7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4) A. Initial FY <input type="checkbox"/> 79 B. Quarter <input checked="" type="checkbox"/> 4 C. Final FY <input type="checkbox"/> 87		

8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY <u>79</u>			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	6,500		6,500	11,700		11,700
(Grant)	(500)		(500)	(2,700)		(2,700)
(Loan)	(6,000)		(6,000)	(9,000)		(9,000)
Other U.S.						
1.						
2.						
Host Country	0	500	500		10,500	10,500
Other Donor(s)						
TOTALS	6,500	500	7,000	11,700	10,500	22,200

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) FN	121	080	070	2,200	9,000	500		2,700	9,000
(2)									
(3)									
(4)									
TOTALS				2,200	9,000	500		2,700	9,000

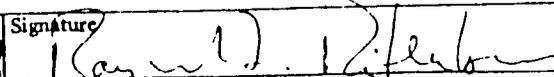
10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 060 960	11. SECONDARY PURPOSE CODE 141						
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)							
A. Code	R/AG	BS	Part				
B. Amount	80%	70%	70%				

13. PROJECT PURPOSE (maximum 480 characters)

To raise small farmer productivity through the development and dissemination of agricultural technologies which are appropriate to the ecological, agronomic and socio-economic conditions facing Panama's small farmer population, and to enhance the GOP's capability to carry out on-farm adaptive research through the implementation of small farmer oriented research activities in priority areas.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 0 7 8 3 0 8 8 6 1 1 8 8	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify)
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 13 page PP Amendment)
 On February 26, 1987, the Deputy Assistant Administrator for Latin America approved the justification for a \$500,000 project amendment for the Agricultural Technology Development project. Attached is the project amendment and revised project paper budget. Under Delegation of Authority No. 753 the Mission Director has the authority to approve amendments to project assistance effecting an increase of the authorized amount of not to exceed \$5 million.

17. APPROVED BY	Signature  Title Raymond F. Rifenburg Acting Director	Date Signed MM DD YY 0 2 2 7 8 7	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 1 2 0 9 8 7
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PROJECT AUTHORIZATION
(AMENDMENT NO.2)

Name of Country: Panama
Name of Project: Agricultural Technology Development
Number of Project: 525-0180
Loan Number: 525-T-050

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, the Agricultural Technology Development Project for Panama was authorized on September 7, 1979 and amended on August 31, 1984 (as so amended, the "Authorization"). The Authorization is hereby amended as follows:

a. Section 1 of the Authorization is hereby amended by deleting it in its entirety and substituting in lieu thereof the following:

"1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agricultural Technology Development Project for Panama ("Cooperating Country") involving planned obligations of not to exceed Nine Million United States Dollars (\$9,000,000) in loan funds ("Loan") and Two Million Seven Hundred Thousand United States Dollars (\$2,700,000) in grant funds ("Grant") over a ten (10) year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project."

2. Except as expressly modified or amended hereby, the Authorization remains in full force and effect.


Raymond F. Rifenburg
Acting Mission Director

February 27, 1987
Date

PROJECT PAPER AMENDMENT
AGRICULTURAL TECHNOLOGY DEVELOPMENT (ATD)
PROJECT 525-0180
FEBRUARY 1987

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Project Paper Amendment

Project 525-0180: Agricultural Technology Development (ATD)

I. Introduction

This amendment proposes the extension of technical assistance to the Agricultural Technology Development Project for six additional months from March 1987 through August 1987. The T.A. will be implemented through a direct contract with Rutgers University and financed by a Treasury Letter of Credit. There is no change in the PACD which remains December 31, 1987.

II. Background

The Agricultural Technology Development Project originally provided a total of \$6,000,000 in Loan funds and \$1,000,000 in Grant funds over a five year period (1979-1984) to assist Panamá in establishing an agricultural research capability. On July 20, 1984, the Acting Assistant Administrator for Latin America approved the justification for a \$4,200,000 project amendment and a PACD extension to December 31, 1987. Total life-of-project funding is currently \$9,000,000 (Loan) and \$2,200,000 (Grant).

The purpose of the Project is to assist Panamá to establish an agricultural research capability that will help small operators increase their land and labor productivity and ultimately their income and employment opportunities. The research program being adopted is basically one of applied, as contrasted to basic research. Emphasis is being given to adapting production technology that has already been generated in other parts of the world to Panamá conditions rather than creating new knowlege. Another salient characteristic of the program is that, for the most part, the research is field-oriented as contrasted to experiments conducted under controlled conditions in a laboratory. Researchers from Panamá's Applied Agricultural Research Institute (IDIAP) are performing trials, tests, and evaluations on farms under the same basic conditions faced by the actual operators.

The Project is financing technical assistance, complementary research, training equipment and materials, and construction which is assisting IDIAP to establish its research capability and to conduct research activities in priority geographic areas of Panamá. The proposed increment of \$500,000 in Grant funds will bring total project funding to \$9,000,000 (Loan) and \$2,700,000 (Grant).

III. Project Rational and Description

A. Problem being addressed

Panama suffers from one of the lowest rates of agricultural productivity in Latin American which is due largely to archaic and inappropriate production practices by most Panamanian producers. Farmers have limited knowledge regarding profitable alternative crops appropriate to local ecological characteristics and available transport infrastructure. Farmers also lack skills for identifying and applying improved technologies in production which are more appropriate to their needs and abilities (tilling, fertilization, irrigation, animal breeding, etc.).

B. Current Status of agricultural research and extension

The long-term objective of the Agricultural Technology Development project is to contribute to increasing income and employment opportunities for Panama's small- and medium-sized agricultural producers. This is to be accomplished by increasing the labor and land productivities of the targeted groups, and by strengthening IDIAP's institutional capabilities through technical assistance, staff expansion and training, and the provision of physical support facilities. The research is to be primarily field-oriented, as compared with research conducted on the experiment stations. The project emphasizes applied research, and the adaptation and dissemination of technologies applicable to the needs of the agricultural sector.

IDIAP's research achievements have been many. Throughout its 11 year history the Institute has developed new varieties and improved agronomic practices for rice, corn, beans and tomatoes. The most important commercial variety of tomato in the country was developed by IDIAP. In addition, IDIAP has developed improved production practices for onions and potatoes. In the case of onions, not only have yields and gross production increased substantially, but production has been extended into the rainy season for the first time.

IDIAP has also made impressive progress in dual purpose cattle raising, especially in pastures. It has initiated a pest management program that includes the documentation of principal weed and insect problems, and a proposed plan of research. IDIAP has continued to improve its program in mixed farming systems in areas such as Caisán and Baru.

Most importantly, IDIAP has decentralized its organization and has developed an integrated problem-oriented, regionally focused, adaptive research system. However, growth and

decentralization has made planning and management a much more complicated affair. Adjusting the Project to respond to this integrated approach to research will be an important activity under the proposed project amendment.

IV. Project Accomplishments and Impact to Date

Many of the following project accomplishments were addressed in a recently completed project evaluation. The evaluation noted that many of the effects of agricultural research on production and income will take years to realize. The fact that the ATD project has been in operation for less than ten years limits the measurements of success that can be used as indicators of the project's impact on agricultural income, productivity, and prices. Nevertheless, the evaluation team observed considerable accomplishments from the ATD project to date.

A. IDIAP Research Achievements

IDIAP had completed 1655 field trials by March of 1986 which was about 400 more trials than planned under the ATD project (FY86, 1st semester report). Also reported were 72 technology field days, a dozen more than planned. Additionally, IDIAP is making major contributions in the following areas of agricultural production:

1. Impact of Pastures Technological Advances

Panama has about 1.4 million head of cattle that utilize about 1.3 million hectares (3.2 million acres) of pasture land. In order to reduce the amount of slash and burn, cattlemen are utilizing newly introduced pastures developed by IDIAP. These improved grasses decrease erosion and have higher protein content, which permit cattle to gain weight for a longer period of time into the dry season. In the past four years IDIAP has introduced about 100 genotypes for different agroecological areas in Panama. Of the large number of genotypes being introduced, about 6 introduced species show promising characteristics for commercial production to replace the predominate low quality native grasses. This pasture introduction phase is also coupled with a strong training component which has resulted in 6 IDIAP scientists receiving six-months of specialized training at CIAT. In addition, a network of farmer groups has been established throughout Panama. The network includes 12 IDIAP scientists and staff.

Currently, the pastures program is conducting grazing trials on these genotypes which must be carried out before IDIAP can recommend commercial species to cattlemen. The pastures program will assist the livestock sub-sector to reach a potential export of 20,000 head.

2. Impact on Tomato Technological Advances

Efforts by IDIAP in developing tomato technologies have had considerable impact on national tomato production due chiefly to two factors: high quality leadership in the tomato research program, and the effective integration of the processing industry with producers. National yields have risen from 11 T/Ha in the 1960's to 22 T/Ha by the end of the 1970's due to the adoption of variety 1-12. By 1980 over 700 producers had adopted the variety with average yields of 27 T/Ha and top yields of up to 50 T/Ha. Production of the variety was valued at dollars 3.5 million in 1983. New varieties under development by IDIAP have the potential to boost national yields once again. These new varieties are currently producing average yields of 36-40 T/Ha. Tomato is now panama's highest value vegetable crop, worth over \$10 million.

3. Impact on Onion Technological Advances

Panamanian onion production has traditionally been limited to one harvest during the dry season from February to May. This has required the importation of over one-half of the country's onion consumption.

IDIAP has embarked on a research program to improve the production of onions over the greater portion of the year. The success of this program is due, in large measure, to the excellent assistance of the agronomist provided by Rutgers University.

The onion research program includes two principal alternatives to traditional onion production patterns; (1) the development of covered seed beds, with related management practices which provide healthy transplants under intensive high rainfall conditions, and (2) the development of economical on-farm solar onion dryers for drying and curing onions to improve storage sustainability.

Accomplishments of this program to date have shown that onions can be grown during the rainy season with yields in excess of 40 Mt/Ha., compared to average yields during the normal harvest period of 27 Mt/Ha., with very little increase in costs under the alternative method.

By using inexpensive, locally available materials to cover onion seedbeds, the quality of onion transplants has been improved, thus reducing the seedling unit costs and increasing seedling survival by a factor of two over traditional methods. IDIAP believes that through continued seedling research, survival rates can be increased six-fold or higher over a period of several years.

Farmer acceptance of the inexpensive on-farm onion dryer has been very positive with many farmers viewing the alternative as a clear improvement over currently available systems.

4. Impact on Yucca Technology Advances

Sixty percent of Panama's soils are classified as acidic soils appropriate for the production of yucca. With technical assistance from CIAT, IDIAP has been conducting varietal and yield trials in a section of Panama where the soils are very acidic and where the length of the dry season is pronounced. To date, results from the experiments indicate a 20 T/Ha increase over the national average yield of about 6 T/Ha.

IDIAP has demonstrated that it is possible to approximate experimental yields on commercial plots, and that it is possible to maintain those yields by applying simple agronomic practices such as preparing the seed properly, using proper seeding rates, and controlling weeds, insects and diseases.

Yucca is a basic staple for most the rural population. There is also a high potential for yucca utilization in the animal feed industry. For the past three years the project has successfully developed means to dry yucca by using low level technology. This drying process has facilitated product storage for prolonged periods and has also provided a less costly animal feed alternative. The impact of dried yucca as concentrated feed has lead the largest poultry producer in Panama to contract with producers in the project area for all the dried yucca they can produce, thus providing producers with additional income.

B. IDIAP Institutional Development

The growth in research has followed a concomitant development in the size and research capabilities of the institution. In 1975, IDIAP's technical staff numbered 23. By 1986 this number had increased to 133 (including 47 who had received graduate degree training). The institute's budget has now increased to approximately dollars 5.6 million. IDIAP has also developed important linkages with international organizations that provide technology, training, and technical support.

C. Improved Operational Orientation

Most importantly, IDIAP has decentralized its organization and has developed a problem oriented, regionally focused, adaptive research system. The decentralized system allows IDIAP to give attention to the different phases of technological innovation to a much greater extent than would a centralized system or one that limits its work to experiment stations. The evaluation team felt this decentralization is positive and should be strengthened.

D. Research Programming Improvements

Through USAID assistance, IDIAP has developed an annual operating plan, or POA (plan operativo anual) which provides for research priorities in support of the budget and documents institutional activities that can be compared to long term planning objectives.

The POA is a major work, organized by program, sub-programs, and projects; and contains summaries of the work to be carried out by each implementing unit (e.g., region and experiment station). The POAs contain important and useful information. They are excellent references for showing the kinds of work that the institute performs. This planning process has resulted in major improvements in IDIAP's ability to develop research priorities.

E. Technical Assistance Achievements for the ATD Project

Long-term technical assistance has been provided primarily through Rutgers University. In addition, CIAT, CIMMYT, CATIE, CIP, and other international research centers have been contracted under this project, as well as the Faculty of Agronomy of the University of Panama.

The evaluation team noted that the support provided by the technical assistance organizations has been very effective. Rutgers University has provided assistance to the commodity research programs and advice to IDIAP's Director General.

The team was impressed with the work of the horticultural and pastures researchers. There are many reasons to believe that the researcher in animal nutrition, who came to Panama in January 1986, will be equally successful. The success of these programs has been due to the creativity, dedication, and research capabilities of these technical assistance advisors and their ability to work effectively with their Panamanian colleagues. The onion project in Boquete (Chiriqui) deserves special mention because of the 50 percent increase in onion production in one year, and because onion production is being extended effectively into the wet season. In addition, IDIAP and TA advisors have established a unique working relationship with a private sector cooperative that promotes onion production. An agreement was signed three months ago whereby the cooperative provides office space, land for experimental trials, and the inputs needed for the research. In return, the arrangement requires that the IDIAP researchers live in the area, and work on the production problems determined by a committee composed of private and public sector representatives.

The second area of the technical assistance thrust has been at the level of the national headquarters, primarily on policy and research organization. The Rutgers team has sought to establish research priorities, organize and rationalize the administration of the institute and integrate internal review policies and procedures. Rutgers has facilitated the success of the research programs in several important ways. By using its association with other international organizations (such as ISNAR), Rutgers has furnished IDIAP and USAID with documentation, studies and services beyond those specified in the Project Paper. Noteworthy in this respect is the work done recently on identifying opportunities to improve agricultural technology management for IDIAP.

V. Rationale for Amendment

Now in its seventh year of implementation, ATD has been assisting Panama's Applied Agricultural Research Institute (IDIAP) to become a capable organization for developing agricultural technologies which would be suitable and appropriate for extension to Panamanian farmer/producers. An in-depth evaluation of the ATD project was conducted by an independent consulting firm in August and September of 1986. The evaluation recommended that USAID consider the desirability of additional assistance to develop Panama's research functions over a longer duration.

Current technical assistance to ATD is funded through March 1987. It includes specialists in agronomy, pastures, soils, livestock and research administration. Long-term participant trainees who have returned during the past year, are receiving professional advisory assistance in order to become integrated into specialized research functions. The extended TA will assist these researchers to upgrade their performance, with particular attention to eventually linking research to agricultural extension, and beginning to develop more complete collaboration of farmer/producers in generation and prioritizing of research activities. A six month extension of TA will permit a more orderly period of time for advisors to disengage their assistance to IDIAP and for that agency to adjust to operating without USAID technical support.

VI. Project Summary Analysis

- (1) Project Components and Activities: a) Area Focused Research includes area diagnostic studies by IDIAP, field experiments, and identified technological modifications; b) Complementary Research utilizes studies by ROCAP in integrated pest management, and food crop studies by international research organizations as well as the Faculty of Agricultural Sciences of the University of Panama; c) Institutional Development includes training and construction of facilities.

- (2) Relationship of project to AID policies and strategies: ATD is fully consistent with AID policies relating to food and agricultural development (see A.I.D. Policy Paper dated May 1982). No significant policy issues have to be addressed. This proposed amendment requires no policy changes.
- (3) Major development problem being addressed: Panama suffers from one of the lowest rates of agricultural productivity in Latin America, largely due to archaic and inappropriate production practices by the largest number of agricultural producers. ATD addresses this problem by identifying subjects for study which are most appropriate to farmer/producers in their ecological and economic environments, and by developing technology improvements which these farmers can adopt for increased production.
- (4) ATD supports the project objective of increasing agricultural production. Technologies which IDIAP selects for research and development are for products which have proven economic demand and which are appropriate to the soils and climates where produced. Therefore, impact both on production and on farmers income is assured from the improved technologies.
- (5) The direct costs of technical assistance in this amended project are proposed to be grant funded in accordance with current USAID and AID/W policies.
- (6) Documentation schedule proposed for this amendment is:
- February 27 for authorization amendment
February 28 for Project Agreement Amendment
March 16 for TA contract amendment
- (7) The amendment makes no change in project purpose, input elements or implementation technology. Technical assistance will be extended by 6 months (adding 36 person months). Actual and projected outputs are as follows:

<u>Outputs categories</u>	<u>Output</u>		<u>Additional outputs</u>
	<u>Original</u>	<u>To date</u>	<u>projected to</u> <u>Dec. 31, 1987</u>
Field recommendations of technical modifications	60	125	8
Comp. Res. studies	20	14	4
LT Training (participants)	35	27	3
ST Training (person months)	500	435	20
Facilities constructed	10	4	4

VII. Project Justifications

The justification analyses contained in the original Project Paper remain appropriate and valid, and are not repeated here. This project amendment makes no change in project goal or purpose, and the reorientation which will be sought during this period will strengthen the original focus of the project (to provide more appropriate technologies to resolve on-farm constraints).

ANNEX A

REVISED FINANCIAL PLAN

	<u>CURRENT</u>			<u>AMENDMENT</u>		<u>GOP</u>	<u>TOTAL PROJECT FUNDING</u>		
	<u>USAID</u> <u>(DL)</u>	<u>(DG)</u>	<u>(GOP)</u>	<u>USAID</u> <u>(DL)</u>	<u>(DG)</u>		<u>(DL)</u>	<u>(DG)</u>	<u>(GOP)</u>
I. <u>Technical Assistance</u>									
a. Long-term (Rutgers Contract)	20	2,200	-	-	500	-	20	2,700	-
b. Non-Contract Funded T.A.	1,358	-	-	-	-	-	1,358	-	-
II. <u>Training</u>	1,760	-	150	-	-	-	1,760	-	150
III. <u>Construction</u>	2,278	-	1,650	-	-	-	2,278	-	1,650
IV. <u>Equipment</u>	2,762	-	1,494	-	-	-	2,762	-	1,494
V. <u>Complementary Research</u>	822	-	-	-	-	-	822	-	-
VI. <u>Operation and Support</u>	-	-	7,206	-	-	-	-	-	7,206
 Total	 <u>9,000</u>	 <u>2,200</u>	 <u>10,500</u>	 -	 <u>500</u>	 -	 <u>9,000</u>	 <u>2,700</u>	 <u>10,500</u>

ANNEX B

Estimated Costs and Methods of Financing

The following charts provide information related to the methods of implementation and financing for the additional funds included in the amendment.

1. Grant Funds (\$000)

<u>Method of Implementation</u>	<u>Method of Financing</u>	<u>Approximate Amount</u>
1) T.A. Long-Term US	FRLC	\$ 435
2) <u>Other Costs</u> (In country operations, miscellaneous direct costs, etc.)	FRLC	<u>65</u>
		500

The planned methods of financing all fall within the three A.I.D. preferred methods.

3. Implementing and Financing Procedure:

a. As indicated in the above chart, USAID/Panama will contract and directly procure the following service:

- (1) Long-term technical assistance.

The USAID/Panama Controller has reviewed and approved the detailed assessment of the Methods of Implementation and Financing for the activities included in this project paper amendment as summarized above.


for Denton Larson
Controller, USAID/Panama
Date

YO-111-323-A 00
5112-220

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET		1. TRANSACTION CODE <input type="checkbox"/> A = Add <input checked="" type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number One	DOCUMENT CODE 3
2. COUNTRY/ENTITY Panamá		3. PROJECT NUMBER 525-0120		
4. REAU/ICE USAID/Panama		5. PROJECT TITLE (maximum 40 characters) Agricultural Technology Development		
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 1 2 3 1 8 7		7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY <u>79</u> B. Quarter <u>4</u> C. Final FY <u>86</u>		

8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	3,444	3,056	6,500	4,994	6,206	11,200
(Grant)	(400)	(100)	(500)	(1,950)	(250)	(2,200)
(Loan)	(3,044)	(2,956)	(6,000)	(3,044)	(5,956)	(9,000)
Other U.S.						
1.						
2.						
Host Country	0	500	500	613	8,887	9,500
Other Donor(s)						
TOTALS	3,444	3,556	7,000	5,607	15,093	20,700

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPRO. PRIATION	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) FN	121	080	080	1,000	6,000	1,200	3,000	2,200	9,000
(2)									
(3)									
TOTALS				1,000	6,000	1,200	3,000	2,200	9,000

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 070 960				11. SECONDARY PURPOSE CODE 141	
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)					
A. Code		R/AG			
B. Amount					

13. PROJECT PURPOSE (maximum 480 characters)

to raise small farmer productivity through the development and dissemination of agricultural technologies which are appropriate to the ecological, agronomic and socio-economic conditions facing Panama's small farmer population, and to enhance the GOP's capability to carry out on-farm adaptive research through the implementation of small farmer oriented research activities in priority areas.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 0 7 8 3 1 1 8 5 1 1 8 7				15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify)			
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

On July 20, 1984, the Acting Assistant Administrator for Latin America approved the justification for a \$4,200,000 project amendment and a PACD extension to December 31, 1987 for the Agricultural Technology Development project. Attached is the revised Project Paper budget which replaces Annex VIII Exhibit A of the Project Paper. Under Redeviation of Authority No. 133.3, the Mission Director has the authority to approve amendments to project assistance effecting an increase of the authorized amount of not exceed \$5 million.

17. APPROVED BY	Signature John Lewis <i>[Signature]</i>	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY
	Title Acting Mission Director	

ANNEX VIII
Exhibit A

ESTIMATED PROJECT EXPENDITURES
AGRICULTURAL TECHNOLOGY DEVELOPMENT
PROJECT 525-0180 (Loan 525-T-050)
(\$000's)

Project Components	9/80	9/81	9/82	9/83	9/84	FY 85	FY 86	FY 87	FY 88	Total Budget
<u>I. Area Focussed Research Activities</u>	<u>-</u>	<u>53</u>	<u>539</u>	<u>457</u>	<u>270</u>	<u>220</u>	<u>772</u>	<u>251</u>	<u>63</u>	<u>2,625</u>
A. Construction	-	-	60	287	80	22	267	-	-	716
B. Equipment & Materials	-	53	479	170	190	198	505	251	63	1,909
1. Other Equipment	-	12	224	172	59	182	359	251	63	1,322
2. Seed Processing	-	-	-	-	-	-	-	-	-	-
3. Vehicles	-	41	255	(2)	131	16	146	-	-	587
<u>II. Complementary Research/Dissemination Activities</u>	<u>-</u>	<u>-</u>	<u>102</u>	<u>45</u>	<u>105</u>	<u>240</u>	<u>180</u>	<u>120</u>	<u>30</u>	<u>822</u>
<u>III. Institutional Development</u>	<u>-</u>	<u>40</u>	<u>34</u>	<u>72</u>	<u>274</u>	<u>914</u>	<u>1,081</u>	<u>-</u>	<u>-</u>	<u>2,415</u>
A. Construction	-	-	20	-	45	678	819	-	-	1,562
B. Equipment & Materials	-	40	14	92	209	236	262	-	-	853
1. Laboratory Equipment	-	-	3	54	127	36	95	-	-	315
2. Other Equipment	-	-	1	38	82	151	100	-	-	372
3. Vehicles	-	40	10	-	-	49	67	-	-	166
<u>IV. Technical Assistance</u>	<u>2</u>	<u>29</u>	<u>371</u>	<u>533</u>	<u>975</u>	<u>791</u>	<u>678</u>	<u>190</u>	<u>9</u>	<u>3,578</u>
A. Loan Funded	2	-	247	347	528	161	48	36	9	1,378
B. Grant Funded	-	29	124	186	447	630	630	154	-	2,200
<u>V. Training</u>	<u>42</u>	<u>58</u>	<u>120</u>	<u>272</u>	<u>440</u>	<u>418</u>	<u>300</u>	<u>100</u>	<u>10</u>	<u>1,760</u>
TOTALS FOR LOANS	44	151	1,042	1,193	1,617	1,953	2,381	507	112	9,000
TOTAL GRANT	-	29	124	186	447	630	630	154	-	2,200
GRAND TOTAL	<u>44</u>	<u>180</u>	<u>1,166</u>	<u>1,379</u>	<u>2,064</u>	<u>2,583</u>	<u>3,011</u>	<u>661</u>	<u>112</u>	<u>11,200</u>

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR DESIGNATE (LAC)

FROM: LAC/DR, Dwight B. Johnson, ^{12/27}

S ECI: PACD Extension and \$4.26 Million LOF Increase for Agriculture Development Technology Project (525-0180) - Panama

Background: The project was authorized on September 7, 1979, and the project agreement signed on September 12, 1979, for a \$6.0 million loan and a \$1.0 million grant. The original PACD was September 30, 1984, which was subsequently extended by the Mission, using its own authority, to September 30, 1986, to allow for the completion of long term training for 23 participants in the U.S. The purpose of the project is to raise small farmer productivity through the development and dissemination of agricultural technologies which are appropriate to the ecological, agronomic and socio-economic conditions facing Panama's small farmer population. The Government of Panama's (GOP's) Applied Agricultural Research Institute (IDIAP), the implementing agency, is enhancing its on-farm adaptive research efforts through the implementation of small farmer-oriented research activities in eight priority geographic areas. Project activities include: (1) technical assistance to develop research and dissemination methodology as well as administrative capabilities; (2) post graduate training for ten Ph.D's and twenty-five MS's and short term training for IDIAP personnel in agriculture, administration, planning, programming and budgeting; (3) construction of office and laboratory facilities in the eight project areas; (4) procurement of materials and equipment for these facilities; (5) vehicles; and (6) complementary research activities.

Discussion: The project was evaluated in June 1983 by the International Agricultural Development Service (IDAS). The evaluation report indicated that project implementation during the first three years experienced various difficulties: (1) linkages between IDIAP's area research teams and MIDA extension agents were very weak; (2) lack of qualified technical specialists prevented analyzing and interpreting research data immediately following harvest; (3) the formation of a multidisciplinary team to support on-farm area research has been minor to date; and (4) the need for IDIAP to rely more on outside professional expertise at the early stages of its livestock research program to implement the on-farm production systems method of research.

As a result of the evaluation the number of resident advisors in field oriented research in crops, soils, and livestock under the long-term technical assistance contract with Rutgers/Cornell was increased from three to four to address some of these deficiencies. The evaluation also described GOP budget problems and an 18 month freeze on new construction and vehicle procurement which had greatly slowed implementation of these components. However, revised implementation plans recently approved by USAID indicate that the majority of ongoing construction and laboratory equipment installation activities will be completed by September 1985. All other project activities, with the exception of long term training, will also be completed by September 1985.

The Mission is proposing an increase of \$4.1 million in LOP funding to continue promoting on-going priority agricultural research activities, continue technical assistance activities, and to expand research contracts and professional/technical linkages between IDIAP and the international and regional research centers of CIP, CIAT, CIMMYT and local Panamanian institutions. Under the amendment, an additional two years of technical assistance will be financed at an increased cost of \$1.260 million in grant funding. The additional technical assistance may or may not be with the Rutgers/Cornell, pending the outcome of advertising in the U.S. for these services per the revised FPR (TR75). The project evaluation pointed out that, even with the return of the 23 long-term participants in early CY 1986, IDIAP would still lack the internal administrative and technical capability to effectively manage the broad array of research activities. As the 23 participants return from their graduate studies they will need guidance and management skills of the resident advisory team to bridge the gap between academic knowledge and field application for small farmer production systems. USAID envisions that the TA team will be expanded by 2 short-term specialists in agricultural economics and research management to evaluate the costs and returns of promising agricultural technologies and practices and to establish research priorities. By the end of 1986 IDIAP should be technically and administratively equipped to function effectively without long term external assistance.

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The Mission is also proposing under the amendment to expand the area focused research to include the Darien region because of the recent influx of permanent agricultural migrants to the region and to construct a new agricultural sub-center in the Darien. In order to continue the institutional strengthening of IDIAP, a regional center in David, an administrative office in Divisa, and various greenhouses in Panama City will also be constructed with additional funding, and assorted laboratory and office equipment and vehicles will be purchase. Additional funding for short-term training activities for IDIAP staff is also proposed under the amendment.

The project's original and revised financial plan is described below.

Financial Plan

<u>Component</u>	<u>Original</u>		<u>Add-On</u>		<u>Revised LOP</u>	
	<u>Loan</u>	<u>Grant</u>	<u>Loan</u>	<u>Grant</u>	<u>Loan</u>	<u>Grant</u>
1. Area Research	1,506	-	600	-	2,106	-
2. Complementary Research	500	-	300	-	800	-
3. Institutional Dev.	1,286	-	1,100	-	2,386	-
4. Short-Term TA	1,300	-	500	-	1,800	-
5. Long-Term TA	-	1,058	-	1,260	-	2,318
6. Training	1,350	-	500	-	1,850	-
Total:	5,942	1,058	3,000	1,260	6,942	2,318
Combined Loan/Grant:	\$7,000		\$4,260		\$11,260	

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In order to complete the proposed amendment activities a PACI extension from September 30, 1986, to December 31, 1987, will be required and will need AA/LAC approval. The current revised PACD of September 30, 1986, will be expanded to include all on-going project activities, not just long term training.

We have reviewed the Mission's rationale for the \$4.2 million amendment and PACD extension and agree that the pace of implementation is sufficient to meet the September 1985 target date of completing all on-going activities, except long term training. In view of the Mission's goal to increase small farmer productivity and incomes over the next few years, and the need for the research output to continue while the extension system is being put into place, the continuation of IDIAP's research activities, and continued institutional strengthening of IDIAP under the proposed amendment appears to be justified. We therefore concur in the proposed scope and justification for a project extension. If you approve this justification, the Mission will prepare PP and project authorization amendments and will approve both, utilizing its existing authority to approve PP supplements up to \$5.0 million. Absence the project extension, IDIAP research activities would not continue at the level and pace currently financed, and the need to continue research output while the extension system is being put into place would not be met. IDIAP has become increasingly effective in developing and disseminating new, improved crop varieties and practices in several areas of the country. However, much more needs to be done in order to reach the majority of Panama's farmers. A complementary activity, the Agricultural Technology Transfer project (525-0277) approved in 1982, provides this opportunity to reestablish a national extension service throughout Panama; this is an effort that cannot go forward without IDIAP's continuing research outputs which will be financed during the amendment period.

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The Mission advises that loan and grant funds necessary for the project extension may be available in whole or part as a result of deob/reob actions currently being discussed with the GOP.

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Recommendation: That you approve the justification for a \$4.26 million project amendment and approve a PACD extension from September 30, 1986, to December 31, 1987, for the project.

Approved: M. B. B...

Disapproved: _____

Date: 7/20/84