

I. PROJECT IDENTIFICATION

1. PROJECT TITLE
CASTELAR GRADUATE SCHOOL

APPENDIX ATTACHED
 YES NO

2. PROJECT NO. (M.O. 1095.2)
 500 35 120 511

3. RECIPIENT (specify)
 COUNTRY _____
 REGIONAL L.A. INTERREGIONAL _____

4. LIFE OF PROJECT
 BEGINS FY 72
 ENDS FY 76

5. SUBMISSION
 ORIGINAL
 REV. NO. 1 - 6/6/72 DATE
 CONTR./PASA NO. _____

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 _____ (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 <u>72</u>	<u>246.0</u>			<u>8.</u>	<u>6</u>	<u>80</u>	<u>15</u>	<u>143</u>	<u>36</u>			
3. BUDGET FY <u>73</u>	<u>511.3</u>			<u>38.5</u>	<u>55</u>	<u>112.8</u>	<u>25</u>	<u>335</u>	<u>75</u>			
4. BUDGET +1 FY <u>74</u>	<u>516.8</u>			<u>93.8</u>	<u>134</u>	<u>25</u>	<u>20</u>	<u>378</u>	<u>85</u>			
5. BUDGET +2 FY <u>75</u>	<u>351.0</u>			<u>91.2</u>	<u>130</u>	<u>15</u>	<u>16</u>	<u>228.8</u>	<u>51</u>			
6. BUDGET +3 FY <u>76</u>	<u>252.0</u>			<u>88.4</u>	<u>125</u>	<u>10</u>	<u>12</u>	<u>141.6</u>	<u>32</u>			
7. ALL SUBQ. FY												
8. GRAND TOTAL	<u>1877.1</u>			<u>319.9</u>	<u>450</u>	<u>242.8</u>	<u>88</u>	<u>1226.4</u>	<u>279</u>			

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT
1) IIAS (3) Ford Foundation	Salaries - Professional personnel	\$64,000
2) OAS	Scholarships	

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER Boyd T. Whittle	TITLE Regional Rural Development Advisor	DATE 6/6/72
2. CLEARANCE OFFICER Donald R. Fiester	TITLE Chief, Agro-Industrial Develop.	DATE Div. 6/7/72

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE
LA/DR					
LA/DP					
LA/DP					

3. APPROVAL AAS OR OFFICE DIRECTORS

SIGNATURE	DATE

4. APPROVAL A AID (See M.O. 1025.1 VI C)

SIGNATURE	DATE

TITLE _____ ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

CASTELLAR GRADUATE SCHOOL

A. STATEMENT OF THE GOAL

1. The Goal

To upgrade agricultural education at the post graduate level in Latin America as a means for improving production, income distribution, resource utilization, and employment in the rural sector. Emphasis will be given to inter-country exchange of agricultural technical information having application in the cone countries.

2. Measurement of Goal Achievement

- a. Improved practices adopted and production levels increased in crops and livestock production.
- b. Improved resource utilization as a result of increased dissemination of knowledge of sector analysis and systems planning in the rural sector.
- c. Increased skills in the agricultural technical areas, e.g., vocational agricultural schools, extension service, research stations, credit systems, marketing programs, etc.

3. Basic Assumptions of Goal Achievement

- a. Local governments provide adequate support to research work and extension in agriculture as a key element in development.
- b. Governmental policies encourage expanded production and more efficient resource utilization.
- c. There is an adequate internal and external market for increased production.
- d. Sector analyses are conducted to determine the best approaches to improving income distribution and employment.

B. STATEMENT OF PROJECT PURPOSE

1. The Purpose

To develop a viable self-sustaining regional center which can provide advanced training in agriculture for an estimated minimum of 90 graduate students from Latin American countries to the M.S. level each year. Inasmuch as Argentina is now in a situation to provide technical assistance and training to other Latin American countries, it is expected that this project, located in Argentina, will provide training for students who will transfer their technical capability in research, extension, marketing, credit, production systems, etc., to other Latin American countries.

2. Conditions Expected at End of Project

a. A high quality self-sustaining institution will have been developed with the capacity for training graduate students to the M.S. level in Agricultural Science.

- (1) Managerial capability will be developed to operate Castelar to the extent that effective institutional administration can be provided.
- (2) A staff of high quality will have evolved in priority disciplines who will be able to carry out the required functions of course coordinators (department head), teachers, graduate students, advisors and consultants.
- (3) Course curriculums will have been developed which relate directly to problems of the Latin American countries. It is not anticipated that there will be a direct transfer of course content from U.S. institutions to the graduate school at Castelar.

b. Approximately 375 students will have been trained at Castelar during the first five years and the majority will have accepted professionally responsible positions in their countries of origin. Approximately one-half of the graduates will be from Latin American countries other than Argentina and will have returned to their country of origin upon graduation.

- c. About 14 Castelar graduates or Castelar staff members will have received PhD degrees from U.S. universities and returned to teaching or research institutions in their home country.

3. Basic Assumption of Achievement of Purpose

- a. Implementation agreement with IICA/INTA/UBA/UNLA will remain in force.
- b. School will be integrated into Argentine higher education structure.
- c. Legal status as a non-profit institution will be achieved during CY 1973.
- d. Superior and academic councils of Castelar will be merged into one body with Executive Committee and various commissions set up as needed.
- e. A system of relationships with other Latin American governments and universities will have been developed such that a significant number of non-Argentine Latin students participate in the program, thereby giving it a truly regional character and creating a regional Latin American source of such training.
- f. The Argentine Government will continue a desire to provide technical assistance to other countries in the cone area.
- g. Moral and technical support by the Argentine Government, A.I.D. missions, international foundations, other cone country educational institutions, and others will continue.

C. STATEMENT OF PROJECT OUTPUTS

<u>OUTPUTS</u>	<u>OUTPUT INDICATORS</u>				
	72	73	74	75	76
Fields of Specialization	2	4	6	6	6
Students Enrolled	38	80	120	120	120
Students Graduating (M.S.)	34	70	90	90	90
Students receiving PhD's at U.S. Univ.	-	-	-	6	8
Classrooms Available	6	8	12	12	12
Laboratories Equipped	7	10	15	15	15
Library Books (volumes)	3,000	4,600	5,000	5,500	6,000
Full-time Professors	4	5	6	8	10
Part-time Professors	10	9	9	8	10
Visiting Professors	6	6	5	4	4

1. Basic Assumptions About Management of Outputs

- a. The University of Buenos Aires and the University of La Plata will increase their contributions in support of the Castelar Graduate School.
- b. IIAS continues at least four more years in a coordinating role, as well as making a reasonable financial contribution in support of the project.
- c. A deputy school director is appointed in a full-time capacity with experience in University Administration.
- d. INTA will provide adequate classrooms, laboratories, library facilities and graduate student office space at Castelar and Balcarce.
- e. Salaries paid Castelar professors will be sufficiently high to retain those presently assigned to the faculty and attract additional staff as needed.

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D. PROJECT INPUTS

(a) Kinds	(b) Magnitude of Inputs (in 1,000 dollars)										TOTAL \$		
	(FY)	72	73 (9 mo)		74	75		76		MM			
U.S.		MM	\$	MM	\$	MM	\$	MM	\$	MM	\$	MM	
Technical Assistance													
U.S. University Consortium													
Advisory Services													
Long term Consultants		24	100	44	211.2	60	288	36	172.8	24	115.2	188	867.2
Short term Consultants		12	58	31	148.8	25	110	15	72	8	38.4	91	427.2
Participants													
Long term				49	34.3	126	88.2	126	88.2	122	85.4	423	296.1
Short term		6	8	6	4.2	8	5.6	4	3	3	3	27	18.9
Commodities			80		112.8		25		15		10		212.8
TOTAL			246		511.3		516.8		351		252		1677.1
<u>Cooperating Country</u>													
Argentine Racing Commission			140										
INTA			90										
UNLA			2										
UBA			2										
TOTAL			234										
<u>Other Donors - IIAS</u>													
OAS (Multinational program)			16										
Ford Foundation			8										
TOTAL			64										

2. Basic Assumptions about Production of Inputs

- a. Contractor will make qualified U.S. long term and short term staff members available in accordance with the time frame of the operational plan.
- b. Commodities are delivered in a timely manner.
- c. Qualified participants are available for training to the PhD level in U.S. institutions as programmed in the implementation plan.
- d. Castelar staff members are able to schedule short term study visits to U.S. institutions.
- e. USAID's will sponsor students to Castelar rather than to the U.S. for the M.S. degree as required. A placement service is established to provide reasonable assurance that graduates will find employment in areas where their newly acquired technical capabilities can be best utilized.
- f. Students requiring financial support for graduate education will be able to secure scholarships from local or international institutions.

E. RATIONALE

Agricultural production both for domestic consumption and for export is extremely important to the Southern Cone countries of Latin America -- that area that will be most directly served by this project. Agricultural products account for approximately 90% of the foreign exchange earnings of Argentina. Paraguay and Uruguay exports are made up of 75-80% agricultural products. The countries of Latin America have been able to increase their total agricultural production during the last decade but per capita production has decreased. It is predicted that this situation will become even more critical during the present decade.

Modern agriculture requires highly skilled technicians. Technicians to carry out research, to teach, to work in extension programs, to develop economic planning and other factors vital to increased agricultural development. Most of the Latin American countries have been slow to develop specialized

graduate training in agriculture. It is only in very recent years that there has been some specialization at the undergraduate level in some Latin American universities. The net result has been that most graduates have been generalists and only through years of work experience or additional training in the U.S., Europe and other foreign centers have they been able to become specialists and therefore more capable of solving complex problems.

The case for improvements in agricultural education in Latin America was highlighted in a 1965 report "Agriculture and the University" published by the Council on Higher Education in the American Republics. This report states that in 1964, the total number of agricultural college graduates in Latin America was only 1100. The total number of graduates from U.S. agricultural colleges and universities in the same year was over six times as large. The report also pointed out the total land area of Latin America is about two and one-half as large as the U.S. and at that time 50% of the population of 215 million people in L.A. were engaged in agriculture compared to 10% of the then 186 million living in the U.S.

The report also points out the poor level of preparation of many of the graduates of the L.A. institutions. It makes a strong case for the support of institutions such as the Castelar Graduate School.

This project will provide the critical outside technical assistance during the next five years of operation at the time when the Graduate School is being firmly established and while the necessary manpower is being trained to take over the coordinating and teaching roles at Castelar. It is the purpose of this project to assure the logical and sound development of this Graduate School so that the degrees from Castelar will be equivalent to those from comparable U.S. institutions. In order to reach this objective, it is necessary to provide a U.S. staff of from five to seven professors on a full-time basis who will act as coordinators of the various graduate level courses and who will also provide teaching assistance as needed. The U.S. advisors will specifically assist in developing the course curriculum and identifying the outside assistance needed for specific teaching assignments. The project will also provide from 10 to 15 short term U.S. specialists annually who will be assigned to Argentina on a 30-90 day basis to teach specific aspects of the various courses.

Selected Castelar students will be sent to the U.S. to continue their training at the PhD level to provide them with the proper

tools to become the leaders in their particular fields in their own countries. It is planned that two to three students from each course will be selected on the basis of their demonstrated capabilities and sent to the U.S. to study.

In addition to the formal training that will be received at the Castelar Graduate School, it is expected that non-Argentine students will develop a continuing relationship with Argentine institutions. It is hoped that this relationship will help develop a technical information exchange between the various countries involved and the exchange of consultants and agricultural educators. The present lack of interchange of knowledge creates many cases of duplication in research efforts in agriculture. Many L.A. countries look only to the U.S. and other more advanced countries for technical information where more useful information might be available in a neighboring country.

F. COURSE OF ACTION

The Graduate School for Agricultural Sciences of Argentina, located at Castelar, will be developed as a regional center where students from surrounding countries, as well as Argentina, will be able to obtain high quality Master of Science degrees which are particularly relevant to the agricultural development problems of the area.

The technical services will be directed toward: (1) the continued development and improvement of existing programs in agricultural economics and animal production; (2) revision and upgrading of the agricultural extension curriculum; (3) initiation and development of programs in soil and crop science; and (4) assistance in developing the School's capacity to utilize available computer facilities for student and faculty research projects.

Agricultural Economics: As a result of a Ford Foundation program, Argentina possesses a sizable core of agricultural economists who have recently obtained PhD degrees from major U.S. universities. This group is capable of providing the necessary instruction effort, but due to their lack of experience in conducting a graduate program will greatly benefit from consultation with experienced U.S. agricultural economists. The technical services to be provided consist of a program to (1) advise the faculty on matters of course and curriculum

development; and (2) assist in developing faculty and student research programs. In addition, visiting economists will be expected to enrich the program by presenting seminars.

Animal Production: The purpose of technical assistance to the existing animal production program is to broaden the curriculum to encompass the total system of soil-plant-animal relationships; involving forage production, utilization, nutrition, physiology, genetics, ecology and economics. The faculty presently possesses expertise in forage production and utilization, and genetics. It will, in the short run, require technical assistance in developing the program in the areas of ruminant physiology and systems ecology. The approach will be to utilize U.S. technicians who have recently completed PhD degrees with specialization in these areas, supported by short-term consultation by established authorities. The U.S. technicians will (1) assist in developing and teaching courses in systems ecology and ruminant physiology, and (2) assist in integrating these areas into the animal production curriculum, and the faculty and graduate student research programs. In the meantime, participants will be selected for advanced training in U.S. universities in order to assume the continuation of these specializations at the earliest reasonable date.

Agricultural Extension: The program of agricultural extension is recognized by the School to be in need of considerable revision. The present program is oriented toward training students as researchers rather than supplying them with the communication, programming and evaluative skills required of professionals charged with operating effective extension programs under field conditions. Technical assistance in this area will be to (1) assist faculty members and extension personnel in developing an outline for a curriculum applicable to extension needs in the southern-cone countries; (2) assist in developing course outlines and programs within this curriculum for the forthcoming course; (3) provide for the introduction of recent concepts in (a) the transfer of technical information to end user; (b) mass communication procedures; (c) rural sociology; (d) program planning; and (4) program evaluation of the present course.

Crop Science and Soil Science: The crop science and soil science programs are both new curriculums initiated in CY 1971. Local professionals have been identified who, with some outside technical assistance, are providing most of the teaching responsibilities. In a few specific areas, however, it will be necessary to identify potential staff members who can be trained either through short-term or degree participantships.

in order to have a full complement of teaching skills in their technical fields available to the Graduate School.

Participant Training: The project will provide for short-term and long-term (PhD degree) participants. Short-term participants will be identified by the Graduate School to spend periods of one to six months at the home campuses of the Consortium universities for the purpose of upgrading their skills in specialized areas. The administration of these participants while in the U.S. will be the responsibility of the university providing the specialized training activities involved. Long-term participants (for training periods of approximately three years) will be selected by a committee representing the school, USAID and the U.S. contractor from among the Castelar graduates. They must be from the Southern Cone countries and will hopefully be assured of employment within the Southern Cone area at the completion of their PhD. Candidates who are not graduates of Castelar must agree to return to Castelar to teach for a period of time equal to the length of their graduate study in the U.S.

Equipment and Supplies: A limited amount of U.S. equipment will be supplied in order to contribute to the effectiveness of the overall U.S. assistance activity by aiding the Graduate School to provide the facilities needed for conducting an effective graduate program. Presently the Graduate School lacks a teaching laboratory for the soil science and crop science programs. The U.S. contribution to the soils and crop science laboratories will be used to purchase U.S. manufactured scientific hardware.

Services under the North AID/North Carolina State Regional Soils Project will be used to make recommendations for equipment that will permit the laboratory to be used for training scientists qualified to help implement the regional soil fertility evaluation program.

The Graduate School will assume the responsibility for acquiring equipment in excess of contract allowable dollar expenditures, remodeling or building physical facilities to house the laboratories, and providing glassware and chemicals required for laboratory activities. The U.S. contribution to animal production research equipment will cover part of the equipment expenditure needed for the broadened animal production curriculum.

Library materials are inadequate at the Graduate School. The U.S. contribution will help expand the number of volumes available.

for each of the five courses offered by the Graduate School. In addition, the association with the three U.S. universities will make the research publications of these institutions readily available to the Graduate School. U.S. assistance in acquiring visual aids will help provide selected equipment necessary for implementing modern instructional methods. This equipment will be utilized in teaching all of the five courses. Appropriate use will be made of publications and other training materials available from RTAC. A key-punch and card sorter will be financed under the commodity component of this project. With this equipment available within the Graduate School, and the capability to assist the graduate students and faculty in utilizing the computer for agricultural research, this Graduate School will be able to make effective use of this research tool. Short term U.S. staff members will be provided as required to train Castelar personnel in the operation and maintenance of the equipment.

- G. Narrative Statement: In 1966 the Inter-American Institute of Agricultural Sciences (IIAS) of the Organization of American States in its regional program for graduate studies in the Southern Region recommended the development of a permanent graduate school in Argentina to be open to students from all countries, but especially those from the Southern Cone areas. As a result of this recommendation, an agreement was reached in June, 1967 to establish this institution at the location of the principal station of the National Agricultural Technical Institute (INTA) at Castelar near Buenos Aires. The agreement was between the University of Buenos Aires, the National University of La Plata, IIAS and INTA. These institutions agreed to jointly sponsor the Castelar Agricultural Graduate School and agreement was reached as to the administration and organization of the school. IIAS continues to provide coordination and a financial contribution.

The reason for supporting a school made up of a group of institutions (Inter-American Institute of Agricultural Sciences, National Institute of Agricultural Technology, the University of Buenos Aires and the University of La Plata) rather than at one of the two universities mentioned is because neither of the two universities is considered to have reached a point where it could support the development of a graduate school. These schools have functioned through the years with inadequate budget support from the Government and have received insufficient outside assistance to have reached a point where they could support a

graduate program. These two schools, one of which might normally be considered as a logical institution at which a graduate school could be developed, have had high interest in the establishment of a graduate school in the region but lacked sufficient resources to consider sponsoring such a demanding program. The Inter-American Institute of Agricultural Sciences has considerable experience in agricultural graduate education at its Research Center at Turrialba, Costa Rica, and at La Estranguela, Colonia, Uruguay, which enables it to provide coordination and direction to the developing school at Castelar. Drawing from the years of experience with educational programs in Latin America, IICA provides leadership and financial support in the recruitment of a capable faculty for the School. The salaries of the director and one animal science professor are presently being paid by IICA.

INTIA, as the organization in Argentina responsible for agricultural research and extension, has long realized the need for specialized and graduate training in order to have more effective technicians. It is semi-autonomous and is financed by a 1½% tax on all agricultural exports.

It is because of the resources available to INTIA, which is lacking qualified agricultural graduates, that this organization was chosen for the core institution sponsoring the graduate school.

The national agricultural experiment station of INTIA located at Castelar has 15 groups conducting research in problems ranging from animal pathology to plant breeding. INTIA received an AID loan in the amount of \$1,400,000 for the construction of a virus disease laboratory and a meat technology laboratory to supplement existing facilities. INTIA has also constructed classrooms and office buildings for the graduate school. A recent IDB loan will be partially used for the construction of a central library building and a computer center. All of these facilities are available for the use of the graduate students on individual research problems.

In addition, INTIA has 30 major agricultural experiment stations with over 100 technicians located throughout the country. These stations and technicians are also a key factor in the graduate program. They assist both with the teaching role and in directing the research programs of the graduate school. The Balcarce experiment station, for example, the major station in the country dealing with livestock problems, is the physical location of the Animal Production course.

The University of La Plata and the University of Buenos Aires, among seven recognized schools in Argentina granting B.S. degrees in agriculture, are located near the Castelar Graduate School and as such are able to provide pre-requisite courses for students prior to entering the graduate program at Castelar. Both schools have reasonably well developed faculties of Agronomy and Veterinary Science with a staff capable of providing the necessities under graduate instruction in all of the disciplines taught at Castelar. In an agreement signed by the two universities, INTA and IICA, ULP and LBA will make available classrooms, laboratories, experimental plots, vehicles and equipment as required in the graduate program.

The diversity of the geographical areas of Argentina allows a graduate student to do his thesis on almost any problem of special interest to him. There have been four complete Masters' programs given to date with a total of 62 students. Fifteen of them have been non-Argentine. It is anticipated that this ratio of 3 to 1 will change to at least 1 to 1 by the end of the five year period covered by this project.

It is highly possible that both OAS and IIAS will increase their financial support of this project during this period. The need for greater IIAS support to the Southern Cone countries was agreed upon at the recent Annual Meeting of the Directors at Mar del Plata. It is also expected that the Latin American AID Missions will make an increasingly greater use of the facilities offered in Argentina for advanced training in agriculture at the M.S. level. With increased financial support from outside sources the number of non-Argentine students should continue to expand.

LA/DR: 6/8/72

Appendix A

Schedule of

U. S. Personnel and Participants

	7/1/72 to 3/31/72		4/1/73 to 3/31/74	
	No.	M.M.	No.	M.M.
A - U. S. Technicians				
1. Long-term				
Chief of Party	(1)	9	(1)	12
Systems Ecologist	(1)	8	(1)	12
Soil Fertility Advisor	(1)	9	(1)	12
Soils Advisor (physical prop)	(1)	9	(1)	12
Crop Science Advisor	(1)	9	(1)	12
2. Short term				
Extension Advisor	(2)	4	(2)	4
Crop Science Advisor	(3)	15	(7)	14
Soil Science-Advisor	(5)	7	(6)	10
Animal Science Advisor	(2)	5	--	--
B - Participants				
1. Long-term (Ph.D. level)				
Animal Science	(2)	13	(2)	24
Agricultural Economics	(4)	36	(4)	48
Undetermined	--	--	(6)	54
2. Short term				
Animal Science	(1)	2	(1)	2
Crop Science	(1)	2	(1)	2
Agr. Economics	(1)	2	(1)	2
Soil Science	--	--	(1)	2