

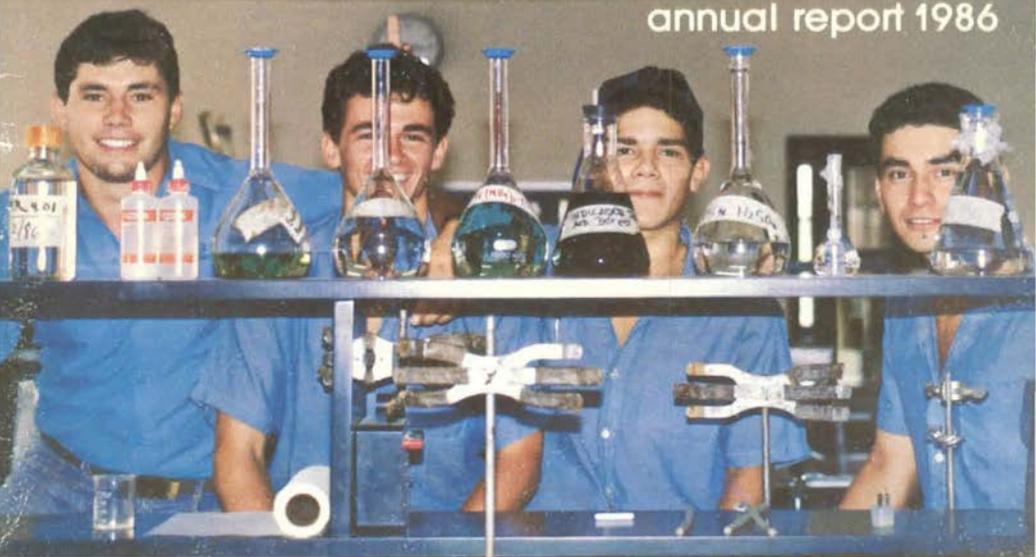
ZAMORANO



ESCUELA AGRICOLA PANAMERICANA
APARTADO 95
TAMAYO, PANAMA

ESCUELA AGRICOLA
PANAMERICANA

annual report 1986



ESCUELA AGRICOLA PANAMERICANA

Tegucigalpa, Honduras

BIBLIOTECA WILSON POPIN
ESCUELA AGRICOLA PANAMERICANA
-PARTADO 93
TEGUCIGALPA HONDURAS

Annual Report 1986



CHAIRMAN'S REPORT 1986

The class of 1986 enrolled with 165 freshmen in January, 1984. Of this group, 101 young men and women graduated from Zamorano in December, 1986. This attrition rate, which is costly in use of limited facilities and hard on the individuals who fail, is normal at Zamorano and has proved to be the best way to guarantee the high standard of the graduates. The freshmen of the class of 1986 were selected by a careful process of examinations and personal interviews. In spite of this careful pre-selection process, experience has taught that the final selection can only take place at the school when each individual student is set against the exacting standards which have been rigorously imposed and refined during the life of the school.

Zamorano's Board of Trustees consists of laymen rather than experts, and its strength comes from bringing to focus on the school's problems the wide range of experience of its members. To complement this experience, an important step was taken this year. A group of distinguished leaders in the field of agricultural education in the United States and Latin America was appointed to advise the Board on educational matters. This group, chaired by Dr. Loy Crowder of the University of Florida (formerly of Cornell University) and including Dr. Harold Crawford of Iowa State University, Dr. Luis Crouch of the Dominican Republic, and Dr. David Mugler of Kansas State University, cooperates with the Director of the school and his academic staff, keeps the curriculum and academic standards under constant review and reports directly to the Board. The advice of this group, whose members serve ad honorem, has been most helpful to the Board and is greatly appreciated.

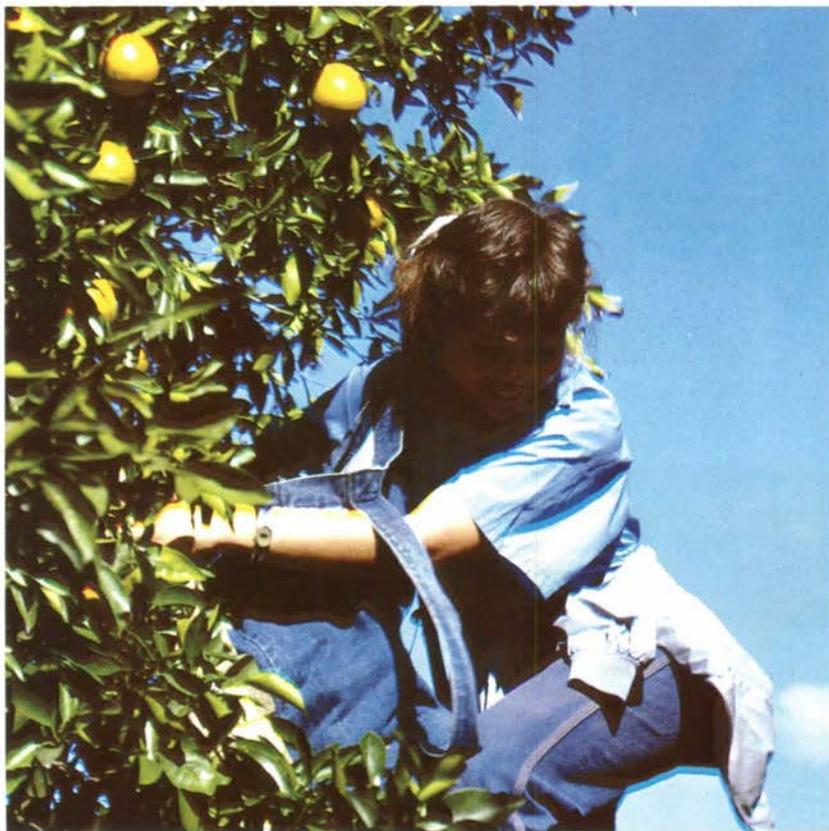
The membership of the Board has been further strengthened by the election of Mr. Duncan H. Cameron, Attorney of Washington D.C., and of Dr. Grace E. Goodell, Anthropologist with the Johns Hopkins University. We regret the loss of Mr. John R. Kimberly who has retired after many years of valuable service. We also mourn the death of Galo Plaza, the distinguished Ecuadorean statesman, who first joined this Board in 1963 and at the time of his death was an honorary and active Trustee.

Planning for the future of the school is one of the Board's main functions. Frequent dry season water shortages have convinced the trustees that water conservation and related environmental problems are among the most important potential limiting factors in future planning. For this reason a leading environmentalist has been contracted to assess the environmental situation in the valley. The Board is also attempting to acquire control of additional sources of water in the valley to assure their careful conservation. The school feels an obligation to provide leadership in this important area of conservation of natural resources which is generally neglected in Latin America and, indeed, in most tropical areas of the world.

The Board fully supports the school staff, which is ably headed by Dr. Simón Malo. The outstanding progress achieved during recent years is due in large part to the enthusiasm and dedication of these able men and women, many of whom have devoted their entire working lives to the school as laborers, artisans, teachers, and administrators. As Chairman of the Board I extend my gratitude to these outstanding members of the Zamorano community.



John G. Smith
President.



DIRECTOR'S REPORT 1986

From its early years, Zamorano has been committed to sharing its expertise to improve the well-being of rural communities throughout Latin America. The school's first director, Dr. Wilson Popenoe, stated in the December monthly newsletter of 1950 that "there has been an increasing tendency on the part of tropical American governments to use our graduates in extension work. We like this, as it multiplies greatly the usefulness of the School. The director of extension work in one country writes that the 'boys we have used from your school have been without exception the best people hired'".

The staff and students of Zamorano have worked hard over the past forty-three years to establish and maintain this tradition of excellence. This hard work begins at the school, in the fields, laboratories, and classrooms of our campus, where the students labor and sweat, ponder and study within the carefully designed curriculum which balances the theoretical with the practical, hands-on training. After three rigorous years of eleven months each, the Zamorano agronomo is a competent, confident agriculturist ready to impart his or her acquired skills and knowledge. Those who apply to the fourth-year program and are accepted devote themselves to specialization in agricultural economics, animal science, or plant science. They are even better prepared to make a significant contribution to the rural development efforts in Latin America. In the words of a Zamorano graduate, "I hope never to be forced to abandon this career, since agriculture is the noblest way to earn a living".

Zamorano's commitment to the welfare of Latin America's rural population is as strong today as it has ever been. Short courses are offered regularly in the areas of animal husbandry, basic grain production and storage, computer application to farm management, fish culture, forestry, and horticulture. An integrated pest management project has prevented losses of bean and corn crops in Honduras. Zamorano is playing a leading role in soil conservation and water resource management. National, regional, and international seminars focusing on agricultural concerns have been held at the school.

As a result of these activities, it has been decided to establish a rural development center, formalizing Zamorano's commitment to outreach programs. In March of 1987 the cornerstone will be laid at the inauguration of the Kellogg Rural Development Center. We would like to take this opportunity to thank the W. K. Kellogg Foundation for their generous support of this important program. At Zamorano, this center's role is exemplary of the innovation and excellence which maintain this institution's reputation as the finest center for agricultural education and development in Latin America.



Simón E. Malo
Director

DESCRIPTION OF THE INSTITUTION AND ITS MISSION

Escuela Agrícola Panamericana, better known as "Zamorano" because of the traditional name of the farm where it is located, is a private, international college, established in 1941 with the authorization and support of the Government of Honduras. It is incorporated in the State of Delaware as a charitable institution and enjoys non-profit tax advantages both in the U. S. and Honduras. The school is located 25 miles east of Tegucigalpa in the picturesque Valley of the Yeguaré River. Because of the altitude (800 m), the year-round weather conditions are pleasant and represent an average climate of the countries from where the international student body comes from. It is excellent for both agriculture and animal husbandry, and thus ideally suited for teaching agriculture and conducting research on a wide variety of tropical crops and problems. The actual property of the institute spans over 12,000 acres of land of many types including rain forests in the higher areas. A large variety of plant species from lowland, humid areas on up to the cold Andean-type areas in the higher reaches of Mount Uyuca expose the student to a wide range of agriculture.

In the realm of agricultural education, Zamorano is unique in the world. It is perhaps one of the few that operates as a university-level teaching center within the confines of a large commercial farming operation. Students learn-by-doing from professors and instructors who teach-by-doing under a code of strict discipline and hard work for everyone. These efforts result in substantial food production which supports the college population of a thousand people. The surplus is sold to help finance the operation of the institution.



The annual program begins the first week of January and continues through the end of November, leaving the month of December as the annual vacation for everyone. The academic year is divided into three trimesters, and the "Agronomo" program, which is the first degree offered, consists of nine trimesters totalling 33 months. The "Ingeniero Agronomo" program is the second degree offered and comprises 12 trimesters with a total of 44 months. The first program is comprehensive giving the Agronomo an excellent foundation in tropical agriculture. The second program becomes more specialized. It delves deeper into modern agricultural science and stresses research and individual work.

The students participate in a great variety of projects which range from administration and management with the use of computers, to programs of basic seed, vegetable, and fruits production, and the processing of all kinds of animal products and food technology. The students "learn by doing" with their hands, working 24 hours per week in all the school programs. The "modules" of field laboratory work, something unique to Zamorano, consist of 3-week assignments in specific production operations. The farming organization of the School is divided into approximately 45 different "modules", all dealing with the agricultural operation of the institution. Twenty five weekly hours are devoted to classroom teaching or laboratory exercises in 72 compulsory and elective courses. A fourth-year student will be guided and supervised by a committee of the faculty which sets goals and assignments and controls the progress of the student.

The pace of study and work is intensive and designed to concentrate far more learning into a shorter span of time than is usual at other institutions. The results are excellent, producing top quality professionals in a relatively short time with the characteristic Zamorano habit of hard work, integrity and discipline. The professional records of the majority of "Zamoranos" attest eloquently to the benefits of our hands-on program. The list of alumni includes Ministers and Vice Ministers of Agriculture, Finance and Education, Presidents and Deans of Colleges, Directors of a variety of institutions and many prominent businessmen such as Presidents of Banks and Cooperatives. The majority were poor but motivated students who began at the bottom of their professions and climbed the ladder through their own merits and efforts. The unique contribution of Escuela Agricola Panamericana to the manpower development of Latin America has had a significant impact on agricultural development since 1946 when the first class graduated.

Zamorano accepts high school graduates, men and women, from countries in the western hemisphere who can pass an entrance examination in Spanish and who show need and motivation to study practical hands-on agriculture. As in all modern private institutions, tuition has been adjusted to reflect costs and inflation. Student's fees and scholarships contributed by international agencies and dedicated individuals continue to be the principal source of

income. Although the level of tuition may appear to represent a hardship to many qualified students, EAP has a generous scholarship program to ensure that deserving applicants are not excluded for financial reasons.

Zamorano is widely recognized today as the college with the highest standards in tropical America. This is the result of an unparalleled history of stability and continuity. The School does not depend on any government and is not subjected to the whims of world politics. Donations from private individuals and corporations are actively sought primarily to support the scholarship program for very poor students. Contributions are tax deductible in the United States and Honduras. Donors may address contributions to Director, Escuela Agrícola Panamericana, P.O. Box 93, Tegucigalpa, Honduras, or to Bank of Boston, 100 Federal St., Boston, Ma. 02110. Attention Mrs. Gunnel de Perez, International Officer. Checks should be made payable to Escuela Agrícola Panamericana.

ZAMORANO IN FIGURES 1986

Estimated Value of Physical Plant	\$ 37,500,000
Number of students graduated since 1946	2,459
Present size of student body	438
Number of professors	46
Number of countries represented by graduates	20
Annual cost per student (including food, lodging, uniforms and clothing, tools, medical attention and education)	10,138
Matriculation Fee for 11 months of residence	4,750
Zamorano scholarship value	6,085
Number of students receiving outside assistance	5,388
Duration of "Agronomo" Program, months	33
Duration of "Ingeniero Agronomo" Program, months	44
Courses taught in the 3-year curriculum	72
Courses taught in the 4-year curriculum	100
Number of field laboratory practices (3-week modules)	45
Total number of employees	434
Total farm size (acres)	12,000
Annual gross farm production	1,610,100
Grain and seed production (tons)	1,000
Vegetable and fruit production (tons)	498
Beef, pork, poultry production (tons)	266
Milk production (lts.)	619,954
Egg production (Doz)	56,223
Elevation of the campus	800 m or 2,400 ft.
Average annual rainfall	1375 mm or 55 in.
Latitude and longitude	14 N and 87 W.

STUDENT BODY AND FACULTY

The academic year was initiated with 438 students. Of these, 146 were Hondurans, 132 came from the other Central American countries, 155 came from South America, and 5 from the Caribbean, Mexico, Spain, and the United States. Sixty five percent of the students received scholarship assistance. The curriculum included 77 theoretical classes, and a program of specialization was offered to third year students wherein they could select elective courses in Agricultural Economics, Animal Science, and Plant Science. The field laboratories included 95 modules which provide each student with an opportunity to learn practical, comprehensive agricultural skills through the school's philosophy of learning by doing.

Zamorano's faculty provides a solid base for highly qualified instruction, a result of the administration's careful recruitment of competent professionals specializing in education, research, and farm production. We take pride in our professors' dedication to the philosophy of teaching-by-doing, which creates an ideal environment for learning for our students.

DEPARTMENTS

Zamorano's curriculum is designed to ensure that each student receives a broad training in the different areas of agricultural production. Students are assigned to the departments of horticulture, agronomy, and animal science during the first, second, and third year of studies, respectively. The department of plant protection collaborates closely with the other three departments. Besides these four main departments, there are sections which provide support in theoretical instruction, such as basic sciences, mathematics, English and agricultural economics. The brief descriptions which follow provide an overview of the activities of each department during the year 1986.

Agronomy

In accordance with the school's objectives, this department further developed educational, research, production and rural development programs. Second year students work primarily with basic grains, plant protection, forestry and fish culture, while keeping abreast with a rigorous schedule of theoretical classes in the basic sciences.

Of special significance is the Independent Production Program (IPP). This program provides each student an opportunity to put into practice what he or she learned in class. In groups of 8-10, the students plant, cultivate and harvest five crops of basic grains. The yields and overall experiences are carefully analyzed and presented in a seminar towards the end of the school year. This activity provides an excellent opportunity to learn the importance of management and production. The IPP activity also allows each student to work in the terraces on the hillside, and conduct a personal research project.



Special importance was given to the production of seeds and basic grains. Fifteen percent of the corn seed and 25% of the sorghum seed imported to Honduras is now being produced and processed at Zamorano, and distributed as certified seed to farmers throughout the country. The school's contribution to this effort is a significant economic boost to the country.

<u>Production (Tons)</u>	<u>1986</u>	<u>1985</u>	<u>1984</u>
Beans	22.8	30.8	23.1
Corn	404.0	213.5	926.9
Rice	34.4*	133.2	68.3
Silage	1860.0	2303.4	1045.0
Sorghum	517.4	259.0	232.0
Soybeans	21.9	11.1	8.1
Fish (Tilapia)	3.97	2.5	1.3
Shrimp	.36	.4	.3

* Reduction of cultivation for reasons of decreased demand.

Research activities have been enhanced by additional support from a variety of private and public agencies. Corn, bean, and sorghum varieties have been improved, resulting in better quality, high yield, and increased drought resistance. Research projects in soil microbiology, symbiotic nitrogen fixation, and the regulation of drought tolerance in certain bean varieties are monitored by the professors and provide learning opportunities for the students.

Training programs in rural development are being formalized to provide more assistance to farmers and also instruct the students in problems of integrated rural development. There is increased student activity in the terracing of the hillsides, and the students have designed and are establishing a typical campesino home and surrounding farm. These outreach activities and surveys of rural communities are projects leading to the formal establishment of a Rural Development Center supported by the W. K. Kellogg Foundation.

In the forestry section, progress has been achieved in research projects and in the management of the school's forests. In Mount Uyuca, 86,000 trees were planted, the principal species being *Pinus oocarpa*, *Pinus maximinoi*, and *Eucalyptus camaldulensis*. The slow growing hard wood trees were planted as part of an annual commitment to the benefit of future generations and school administrations. Careful attention was given to the protection and development of the Uyuca Biological Reserve. The establishment of this reserve is playing an important role in the preservation of the valley's watersheds.

The aquaculture section continues its research of fresh water shrimp, Tilapia, four varieties of Carp, geese and ducks. Students and farmers have demonstrated a strong interest in fish production. At the request of the Honduran Peace Corps, this section developed an aquaculture plan, providing the guidelines and responsibilities for volunteers working as extensionists in aquaculture in Honduras.

Animal Science

Third year students spend 11 months in this department actively involved in the management of our animal science programs. Research is conducted in animal nutrition, feed analysis, forages and pastures, and poultry, swine and ruminant production. Responsibility for feed preparation and the processing of dairy and meat products complement the overall programs.

A general renovation of facilities is underway in this department. A new slaughterhouse and meat processing laboratory is nearing completion. The equipment has been ordered for the new dairy processing laboratory. A new unit for swine production is already in use, as is another new unit for the buffalo program. This construction has been made possible by the generous support of USAID/ASHA (American Schools and Hospitals Abroad), Washington, D.C.

This department continues to make a significant contribution to programs in animal production in Honduras and in the region. Short courses held at the school offer intensive short-course training to small and medium size farmers. This Department has hosted numerous visits, and signed agreements of cooperation with private and public agencies working in Honduras. The school's animal science programs are considered the best in this region for their innovative practices and breeding of animals which are well adapted to conditions in the tropics.

<u>Production</u>	1986	1985	1984
Eggs (Doz.)	56,223	53,818	34,211
Milk (Lts.)	583,102	553,976	497,720
Goat Milk (Lts.)	22,313	26,348	17,248
Water Buffalo Milk (Lts.)	14,539	1,755	
Ice Cream (Lts.)	32,193	27,923	19,846
Butter (Tons)	10	4	3
Cheese (Tons)	92	72	65
Beef (Tons)	122	88	80
Pork (Tons)	69	65	43
Poultry (Tons)	75	37	24

Horticulture

In recent years, this department has increased its activities within the school and in outreach efforts. First year students receive rigorous course work in the production of vegetables, various fruits, and ornamentals, as well as post harvest management, food processing, and marketing. The following theoretical classes are offered: vegetable production, fruit crops, plant propagation, ornamental horticulture, and apiary. Furthermore, research trials are conducted with vegetable and fruit crops which allow learning opportunities for the students and increase production in this department.

<u>Production: Major Crops (Tons)</u>	1986	1985	1984
Beet	7.8	5.8	3.7
Cabbage	53.0	7.3	6.3
Carrot	14.6	17.3	11.0
Cucumber	46.3	34.3	30.6
Fruit (oranges, mangoes, grapefruit, etc.)	136.1	254.8	234.0
Green Bean	14.7		
Green Pepper	6.6		
Lettuce	65.6	27.8	8.5
Onion	23.4	20.0	5.8
Squash	10.8		
Tomato	118.8	62.3	34.0

* Decrease due to drought.

Emphasis has been placed on the introduction of new varieties of vegetables and fruits, and analyzing their adaptation to the conditions at Zamorano and in the communities surrounding the school. This department has cooperated with various training initiatives by offering short courses for established farmers, campesinos, technicians, and professionals. Both the research and the social

projection have improved the educational programs for the students while simultaneously increasing production.

Plant Protection

The students and staff of this department work closely with Agronomy, Animal Science, and Horticulture as consultants in the control of plant diseases, and weeds. The department is responsible for the course work offered to students, as well as research projects and outreach activities. The results of this program make it possible for Honduran farmers to increase their production of beans and corn by a nation wide value of more than \$20,000,000.

The plant protection program has emphasized research in the problems of production of vegetables and grains. The integrated approach of entomology, plant pathology, weed control and communication not only makes it possible to anticipate more profitable results but emphasizes the development for techniques which are applicable to the needs of small and medium-size farmers.

The communications office of this department has published numerous publications for training purposes. Seven publications were directed to farmers, eight for students and agricultural professionals, and twenty eight were more scientifically oriented. Ten audiovisual presentations were prepared for farmers and six for students and extension technicians. To complement these efforts, thirteen short courses and seminars were organized, focusing on integrated pest management, attended by more than 400 persons from local and international organizations.



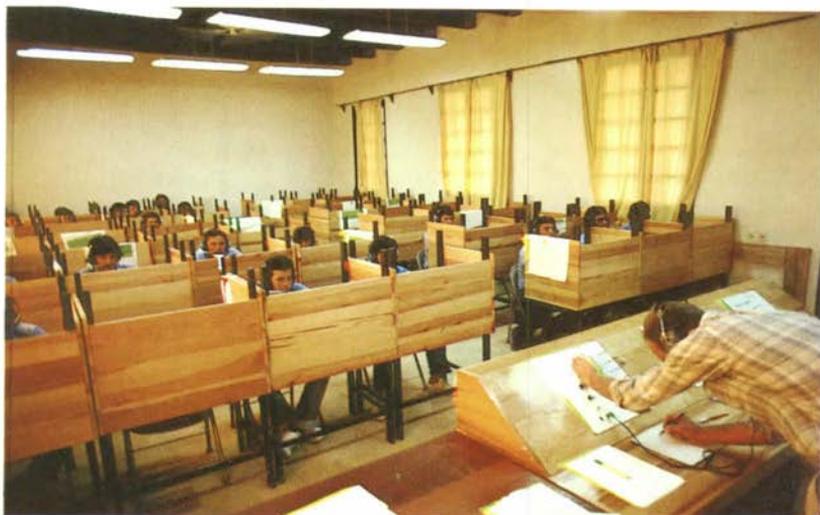
ZAMORANO PUBLICATIONS

The school's academic personnel has demonstrated a strong interest in publishing materials beneficial to rural development in Latin America. Available at the campus bookstore are the following publications: Microbiology; A Laboratory Manual for Biology; Basic Principles of Plant Pathology; Laboratory Exercises for Plant Pathology; A Guide for Diagnosis and Control of Plant Diseases; Vegetable Crops; Research Projects in Vegetable Crops; First Year Modules in Horticulture; and Raising Goats and Sheep in the Tropics.

PHYSICAL FACILITIES

The construction of the English language laboratory and the Computer Center has been completed. The language laboratory, made possible by AID/ASHA funds, has a capacity for 48 students at one time. Students from all levels use this facility in order to keep up with a demanding English program. The school insists upon seven trimesters of intensive English. In keeping with tradition, the importance of English as a second language is stressed because a significant portion of agricultural related literature is printed in English.

The computer center was made possible by a generous donation from the IBM corporation. There are nine personal computers and a system 34 in full use for as many as 16 hours a day. Students and staff are benefitting from the service of computers, and a variety of programs relating to research and production in the different departments are being developed. Furthermore, farmers are being trained in the benefits of computers in the field of agriculture.



ESCUELA AGRICOLA PANAMERICANA, INC.

STATEMENT OF REVENUES AND EXPENSES—OPERATING FUND YEARS ENDED DECEMBER 31, 1986 AND 1985

Expressed in 000's U.S. Dollars

Condensed Financial Statement derived from Audit
by Mendieta & Associates, Representatives of
Arthur Young & Company

	<u>1986</u>	<u>1985</u>
REVENUES		
Endowment income	500	750 (1)
Gifts and grants	1,644	1,566
Matriculation fees	1,296	1,312
Sale of farm products and services	<u>1,609</u>	<u>1,175</u>
Total	5,049	4,803
EXPENSES		
Education and departments	3,675	3,101
Operation and maintenance	1,101	924
Administration and institutional	<u>880</u>	<u>1,044</u>
Total	5,656	5,069
(Deficit)	(607)	(266)

(1) Includes 250 for land acquisition.

ESCUELA AGRICOLA PANAMERICANA
Number of graduates by year and Country

Country	46-64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	Total
1 Honduras	200	5	10	14	16	17	20	13	16	10	15	17	14	34	33	24	20	17	14	32	31	33	32	637
2 Costa Rica	116	11	9	9	9	8	11	7	14	10	8	9	19	11	9	6	6	9	9	8	9	7	15	329
3 Guatemala	88	6	6	8	5	6	4	3	4	4	6	4	6	5	7	6	6	6	6	10	11	12	9	228
4 Colombia	80	4	4	6	6	5	3	4	2	6	10	8	6	7	7	5	8	8	11	7	5	11	2	215
5 Ecuador	58	5	4	3	6	4	4	6	7	6	6	5	6	5	7	4	8	4	6	12	15	25	21	227
6 Nicaragua	85	3	3	3	1	2	3	2	1	3	3	5	7	6	5	8	4	5	4	19	18	6	12	203
7 El Salvador	105	6	2	5	4	3														4	3	7	7	146
8 Panama	66	6	4	2	1	2	3	3	3		2	1	2	6	4	2	2	5	5	7		2		128
9 Rep. Dominicana	21	4	4	4	4	5	7	9	8	9	10	3		1		3	5	2	2	4	4	1	1	111
10 México	13	1				1	2	5	2	2	1	3		2	1	2	1	2		1				39
11 Belice	4	3	1		1	1	1	1	1	3	4	2	1	4	5	1	2	1	3	4	1		1	45
12 Perú	21	4	1	2								1				4	1	1	1	1		1		37
13 Venezuela	3										1	1	1	20				1						27
14 Bolivia	10			1	2	1	1	1		1		3		2	3	5	5	2	4	2	8	4	1	56
15 Cuba	20																							20
16 Chile	6	1																						7
17 Argentina								1																1
18 Brazil																		1						1
19 Uruguay																		1						1
20 Jamaica																					1			1
Totals	896	59	48	57	55	55	59	55	58	54	66	62	62	103	81	70	70	63	65	105	106	109	101	2459

	George E. Putnam, Jr. New England Consulting Corp. Manchester, MA.
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FACULTY AND STAFF (1986)

Simón E. Malo*	Ph. D.	Director, Prof. Tropical Fruit Production
Jorge Román*	Ph. D.	Dean, Prof., Animal Breeding
Jeffrey Lansdale	M.S., M.A.	Assistant to the Director, Prof. English
Armando Medina L.		Executive Secretary
Olga M. Benavides		Executive Secretary

Administration and Services

Mariano Jiménez T.*	M.B.A.	Business Manager, Prof. Farm Management
Javier Olaechea*	Lic. Administration	Comptroller, Prof., Agric. Credit
Ana Barralaga	C. P. A.	Assistant Comptroller, Prof. Accounting
Alberto Chain		Campus Superintendent
Héctor Flores		Personnel
Lionel Lozano		Bookkeeper, Supervisor
Carlos Mejía		Bookkeeper, Supervisor
Orlando Muñoz*	Agron.	Field Superintendent
Victor Narváez		Materials and Supplies
Sergia de Revilla		Tegucigalpa Representative

Department of Applied Biological Sciences

Daniel Meyer	Ph. D.	Head Associate Prof., Zoology, Aquaculture
Carlos Aguilar L.	Civil Eng.	Assistant Prof., Mathematics
Nancy Erickson	M. S.	Assistant Prof., Chemistry
Irene Gardner	M. A.	Assistant Prof., English
Andrew Houghton	B. A.	Assistant Prof., English
Antonio Molina*	Agron.	Professor, Botany
Gustavo Pérez M.	Ph. D.	Associate Prof., Math. and Physics
George Pilz	Ph. D.	Associate Prof., Botany, Genetics

Department of Agronomy

Leonardo Corral	Ph. D.	Head, Associate Prof., Agronomy, Plant Breeding
Nelson Agudelo	Ing. Forestal	Associate Prof., Forestry, Ecology
José Alan	Ph. D.	Associate Prof., Plant Breeding
César Alvarado**	Ing. Forestal	Assistant Prof., Forestry
Ditmar Graw	Ph. D.	Associate Prof., Agronomy, Soils
Janice Labrie**	B. S.	Assistant Prof., Fish Culture
Roni F. Muñoz*	M. S.	Assistant Prof., Weed Science
Victor Muñoz*	Agron.	Associate Prof., Seed Production
Juan Carlos Rosas	Ph. D.	Associate Prof., Plant Breeding
Marilyn Swisher	Ph. D.	Associate Prof., Agriculture Extension
Silvio Zuloaga	Ph. D.	Associate Prof., Plant Breeding

Department of Animal Science

Mauricio Salazar*	Ph. D.	Head, Prof., Animal Nutrition
Ricardo Dysli*	M. S. A.	Associate Prof., Animal Production
Marco A. Esnaola	Ph. D.	Associate Prof., Animal Production
Karl Fick*	Ph. D.	Visiting Prof., Animal Nutrition
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