# BASIC DATA AND BACKGROUND INFORMATION

# FOR THE

# WORKSHOP ON THE ROLE OF SCIENCE AND TECHNOLOGY IN PERUVIAN ECONOMIC DEVELOPMENT

Held in Paracas, Peru, April 17-22, 1966

**Prepared by the**

**Office of the Foreign Secretary of the National Academy of Sciences**

**In Collaboration with the Agency for International Development**

Table of Contents

III. FOREIGN AID AND LOANS TO PERU: 1960-1965

# PERUVIAN UNIVERSITIES

## Introduction

In Peru institutions of higher education are governed by a university law, passed on April 8, 1960, which supersedes all previous laws and provides the legal basis for all universities in the nation.

Under this law the autonomy of all universities is guaranteed, and private universities are recognized and made subject to the provisions of the law. The law was aimed at university reform in instruction and administration.

Generally universities in Peru consist of independent faculties, schools and institutes. Internal university organization is similar throughout Peru.

In 1960 Peru had one private and seven public universities:

Universidad Agraria (Lima)
Universidad Nacional de Ingeniería (Lima)
Universidad Nacional Mayor de San Marcos (Lima)
Universidad Nacional de San Agustín de Arequipa
Universidad Nacional de San Antonio Abad del Cuzco
Universidad Nacional de San Cristóbal de Huamanga (Ayacucho)
Universidad Nacional de Trujillo
Pontificia Universidad Católica del Perú (Lima)

The first three are considered to be the principal universities. Since 1960, the following new universities have been established:

Universidad Agraria de la Selva (Tingo María)
Universidad Agraria del Norte
Universidad de Lima
Universidad de Santa María (Arequipa)
Universidad del Pacífico (Lima)
Universidad Femenina del Sagrado Corazón (Lima)
Universidad Nacional Daniel A. Carrión (Pasco)
Universidad Nacional de Huanuco "Hermilio Valdizán" (Huanuco)
Universidad Nacional "Federico Villareal" (Lima)
Universidad Nacional de la Amazonia Peruana (Iquitos)
Universidad Nacional de Lambayeque
Universidad Nacional del Centro del Perú (Huancayo)
Universidad Nacional "San Luis Gonzaga" (Ica)
Universidad Particular de "San Martín de Porres" (Lima)
Universidad Pedagógica "Inca Garcilazo de la Vega" (Lima)
Universidad Peruana de Ciencias Médicas y Biológicas (Lima)
Universidad Técnica de Cajamarca
Universidad Técnica de Piura
Universidad Técnica del Altiplano (Puno)

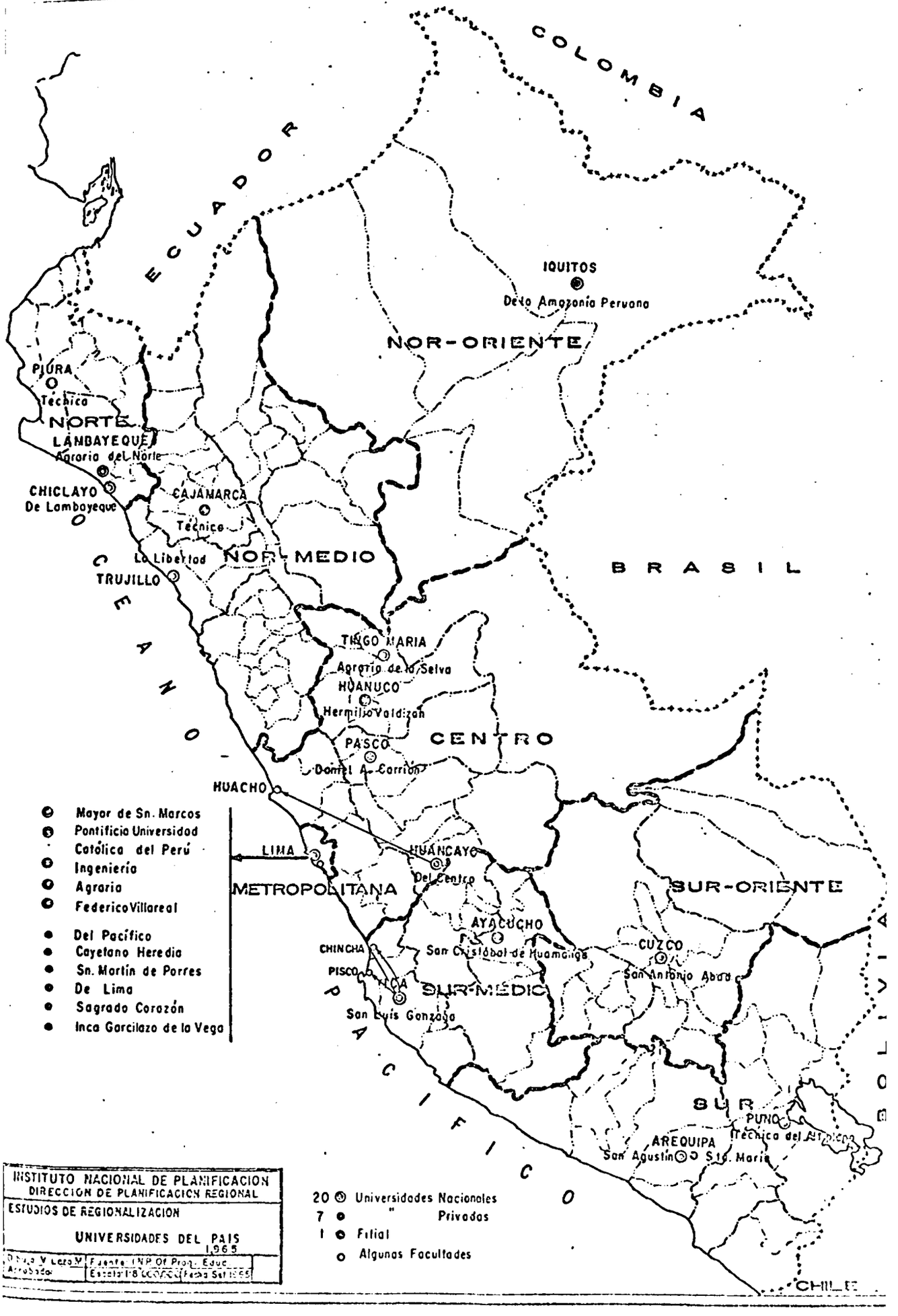
In 1963 reported university enrollment had increased by fifty percent over 1960 with 46,167 students, of whom 44,645 were in national institutions and 1,522 in private establishments. The arts, education, law and humanities accounted for 47.5 percent of the enrollment; and 52.5 percent were in career fields directly related to the social and economic development of the country, including social sciences, medicine, and agriculture. In 1963, the state universities employed a total of 4,000 professors and the private institutions, 451. In 1963 the universities received a total of $7,798,507 in state subsidies and $5,559,700* from other sources. Government subsidies to the universities have tripled since 1960, while other revenues have doubled.

---

*All figures for appropriations and budgets here and in the following pages are in U.S. dollars.

Principal source for above information:

Adela Freeburger and Charles Hauch. Education in Peru. Office of Education, U.S. Department of Health, Education and Welfare, 1964.


COLOMBIA
ECUADOR
IQUITOS
Dpto Amazonia Peruana
NOR-ORIENTE
PIURA
Técnica
NORTE
LAMBAYEQUE
Agraria del Norte
CHICLAYO
De Lambayeque
CAJAMARCA
Técnica
La Libertad
NOR-MEDIO
TRUJILLO
BRASIL
OCEANO
TINGO MARIA
Agraria de la Selva
HUANUCO
Hermilio Valdizan
PASCO
CENTRO
Daniel A. Carrión
HUACHO
Mayor de Sn. Marcos
Pontificia Universidad Católica del Perú
Ingeniería
Agraria
Federico Villareal
Del Pacífico
Cayetano Heredia
Sn. Martín de Porres
De Lima
Sagrado Corazón
Inca Garcilazo de la Vega
LIMA
METROPOLITANA
HUANCAYO
Del Centro
SUR-ORIENTE
AYACUCHO
CHINCHA
PISCO
San Cristóbal de Huamanga
CUZCO
San Antonio Abad
SUR-MEDIO
San Luis Gonzaga
PACIFICO
SUR
PUNO
Técnica del Altiplano
AREQUIPA
San Agustín
Sta. María
CHILE
BOLIVIA
20 Universidades Nacionales
7 " Privadas
1 Filial
Algunas Facultades
INSTITUTO NACIONAL DE PLANIFICACION
DIRECCION DE PLANIFICACION REGIONAL
ESTUDIOS DE REGIONALIZACION
UNIVERSIDADES DEL PAIS
1,965
Dibujo V. Lera V.
Aprobado
Fuente: INP Of. Prog. Educ.
Escala 1:8'000,000
Fecha Set. 1965

PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU
(Pontifical Catholic University of Peru)
Jirón Camaná 459, Lima

Rector: R. P. Felipe E. Macgregor, S.J.
Pro-Rector: Dr. José Tola Pasquel
Secretary-General: Dr. Ernesto Perla Velaochaga

Private institution
Founded: 1917
Budget:
Professors:
Students: 2,500

The Catholic University is operated almost entirely with part-time faculty. Except for some courses in the Faculty of Engineering no instruction in science is given. In 1962 the University had plans under way to organize a medical school, but no information was obtained as to whether these plans have gone ahead or not.

| Faculties | Deans |
|---|---|
| Agronomy | Ing. Luis Alayza Grundi |
| Economics and Commerce | Ing. Numa León de Vivero |
| Law | Dr. Jorge Avendoño |
| Education | Padre Antonio San Cristobal |
| Civil Engineering | Ing. Ricardo Rey Polis |
| Letters | Dr. Jorge del Busto |
| Theology | Padre Ulpiano López |
| Social Sciences | Padre Luís Belaochaga |
| **Schools** | |
| Fine Arts | Padre Adolfo Wintermitz |
| Pedagogy | Hno. Anselmo María |
| Journalism | Dra. Matilde Pérez Palacios |
| Urban Normal | Srta. Eliza Fuertes |
| Social | Srta Magdalena Bandini |
| Theological Sciences | Padre Ulpiano López |
| **Institutes** | |
| Social Sciences | |
| Feminie of Higher Studies | Dra. Matilde Pérez Palacios |
| Riva Aguero | Dr. Victor Andrés Belaúnde |

## UNIVERSIDAD AGRARIA *
(Agrarian University)
La Molina

Rector: Ing Carlos Vidalón G.

Public institution
Budget: From Peruvian Government
US$1,800,000.00 1964
2,230,000.00 1965
3,380,000.00 1966
Faculty: 307 (18 Ph.D.'s and 56 M.S.'s)

The Agrarian University, formerly known as the Escuela Nacional de Agricultura, is considered one of the best agricultural schools in Latin America. It receives assistance from the Rockefeller and Ford Foundations, the United Nations Special Fund, the Food and Agriculture Organization and the governments of Great Britain, Holland, France, Germany and Denmark. Peruvian Government support for the University in 1964 was eight times greater than in 1960.

The University is in a period of expansion with frequent changes in its organization. It was planned to begin construction of a new $8.7 million physical plant in mid-1964, with U.S. Government assistance.

A five-year program is offered, upon completion of which a bachelor's degree is granted. If a thesis is prepared, the professional degree of Ingeniero Agrónomo is awarded. In 1962-63 a master's degree program was initiated. Graduate work is being given in genetics, biochemistry and nutrition, entomology and soils, and is being planned for the Faculty of Fisheries. The University will be in a position to give solid Ph.D. training in three or four years.

The University graduates 150 to 200 students per year and expects to increase this number to 500 by 1968. The new campus being planned will accommodate from 2,500 to 5,000 students.

Seventy percent of the 307 professors are full-time. Eighteen have Ph.D. degrees and 56 have M.S. degrees. Between 40 to 50 members of the staff are working on advanced degrees abroad.

Faculty of Agronomy - Dean: Ing. Manuel Rodriguez Escribens

| Departments: | Heads: |
|---|---|
| Crops | Ing. Esteban Skrabonja A. |
| Horticulture | Ing. Charles Morin |
| Entomology | Ing. Isaias Combe L. |
| Crop Improvement | Ing. José Calzada Benza |
| Phytopathology | Ing. Rosendo Pestigo |
| Pastures | Ing. Arturo Flores |
| Soils | Ing. Manuel Rodriguez E. |

* Revised in Peru, April 1966.

Faculty of Sciences - Dean: Ing. Luis Vega Bancalari

| Departments: | Heads: |
|---|---|
| Biology | Dr. Federico Scheuch |
| Mathematics & Statistics | Ing. Wilfredo Salhuana M. |
| Physics | Ing. Gustavo Estremadoyro |
| Chemistry & Geology | Ing. Miguel Tord |

Faculty of Zootechnics - Dean: Dr. Antonio Bacigalupo

| Departments: | Heads: |
|---|---|
| Fisheries | Ing. Héctor Pimentel |
| Animal Production | Ing. Carlos Luna de la Fuente |
| Animal Health | Dr. Carlos Rodriguez Villegas |
| Animal Nutrition | Dr. Antonio Bacigalupo |
| Animal Technology | Ing. Francisco Sylvester |

Faculty of Agricultural Engineering - Dean: Ing. Jorge Quiroz

| Departments: | Heads: |
|---|---|
| General Engineering | Ing. César Bellido |
| Agricultural Mechanization | Ing. Reginald Ledgard |
| Planning and Rural Work | Ing. Jorge Quiroz |
| Agricultural Technology | Ing. Juan Herrera |
| Irrigation | Ing. José Aquize |
| Soil Conservation | Ing. Manuel Paulet |

Faculty of Forestry - Dean: Ing. Adolfo Salazar

| Departments: | Heads: |
|---|---|
| Forestry Products | Ing. Antonio Aróstegui |
| Silviculture | Ing. Emilio David |

Faculty of Social Sciences - Dean: Ing. Jorge González V.

| Departments: | Heads: |
|---|---|
| Economics | Ing. Jorge Bravo |
| Sociology | Dr. José Fajardo |
| Home Economics | Sra. Nydia Gamarra |
| Education and Extension | Ing. César Arana |
| Humanities | Dr. Luis Alberto Ratto |
| Administration | Ing. Angel Aste |

Graduate School - Director: Ing. Jacobo Zender

Institute of Tropics - Director: Ing. Esteban Skrabonja

Institute of Sierra - Director: Ing. Guillermo Carrera

Institute of Forestry Research - Director: Ing. Fernando Galván

Institute of Pre-Colombian Agriculture - Director: Dr. Federico Engell

The institutes were organized mainly to support inter-department research on specific fields.

UNIVERSIDAD AGRARIA DE LA SELVA
(Agrarian University of the Selva)
Tingo María

Public institution
Founded: 1963

Faculty of Agronomy
- Agronomy
- Sciences
- Tropical Livestock
- Technology
- Forestry

UNIVERSIDAD AGRARIA DEL NORTE
(Agrarian University of the North)

Public institution
Rector: Ing. Agustín Gavidia Salcedo

Faculties

| | |
|---|---|
| Sciences | Ing. Hernán Arce Coda |
| Agronomy | Ing. Máximo Urbina Gutiérrez |

## UNIVERSIDAD DE LIMA
(University of Lima)
Avenida Arenalen 956, Lima

Rector: Dr. Antonio Pinilla Sánchez Concha

Private institution
Founded: 1962

According to its 1963 plans, the university will be staffed with full-time professors and will offer degrees comparable to those of U.S. colleges and universities. Professor Raymond C. Gibson from Indiana University has been contracted as an advisor in the administration and organization of the university.

Faculties
Economics and Social Sciences
Arts and Sciences
Post Graduate Studies

Schools
Industrial Relations
Communications, Publicity & Public Relations
Cost Analysis, Expense and Budget Control

Institute of Scientific Investigations and Publications

## UNIVERSIDAD DE SANTA MARIA
(University of St. Mary)
Calle Santa Catalina 410, Arequipa

Rector: Padre William Morris

Private institution
Founded: 1961

Established by Marianist Fathers from St. Louis, Missouri, this university is the first attempt at a U.S.-type four-year liberal arts college in Peru. Programs in the Faculties of Education and Letters lead to the B.A. degree.

Faculties
Education in Arts and Sciences
Law
Economics
Nursing
St. Mary's Normal School for Women

## UNIVERSIDAD DEL PACIFICO
(University of the Pacific)
Colmena 295, Lima

Rector: Dr. Juan Ignacio Elguera McP.

Private institution
Founded: 1962

Organized through the efforts of a group of Catholic business men in Lima, the university is staffed and operated by faculty members from Loyola University in Chicago. Although it started as a school of business administration, Peruvian university law forbids the establishment of business schools at the higher education level. The University of the Pacific is expanding to include other programs to meet legal requirements.

Faculty
Economics and Administration

## UNIVERSIDAD FEMENINA DEL SAGRADO CORAZON
(Sacred Heart Women's University)

Rectora: Rvda. Madre Graciela Marrou Correa

Private institution
Founded: 1962

Faculties
Letters
Economics
Education
Sciences
Social Architecture
Law

UNIVERSIDAD NACIONAL DE HUANUCO "HERMILIO VALDIZAN"
("Hermilio Valdizán" National University of Huanuco)
Huanuco

Rector: Ing. Pedro José Cuculiza de Villa

Faculties
Agronomy
Education
Economics

UNIVERSIDAD NACIONAL "FEDERICO VILLAREAL"
("Federico Villareal" National University)

Rector: Dr. Oscar Herrera Marquis

| Faculties | |
|---|---|
| Administrative Sciences | Ing. Luis Heysen I. |
| Architecture | Arq. Carlos Remar A. |
| Education & Human Sciences | Dr. Efraín Orbegoso R. |
| Oceanography & Fisheries | Dr. Victor Cárcamo M. |
| Economic & Commercial Sciences | Ing. Humberto Espinoza |

UNIVERSIDAD NACIONAL DE INGENIERIA
(National Engineering University)
Casilla 1301, Lima

Rector: Arq. Santiago Agurto Calvo (1966-70)
Vice-Rector: Roberto Heredia Zavala

Public institution
Founded: 1876. Present name & structure date from 1955.
Budget: $5,942,424 (1964)

Students: 6,000

The National Engineering University is going through a period of expansion and diversification. Integrated curricula and qualify instruction are emphasized.

## UNIVERSIDAD NACIONAL DE INGENIERIA (continued)

The university has a common first year program for all students. It carries on research studies and an active program of postgraduate work in the field of city planning. Several Latin American countries send graduate engineers for this program. The institutes of UNI revise curricula, give courses, conduct seminars and research, and work to promote the advancement of their specific fields.

| Faculties | Found | Deans | Stud | Fac. | Budget* |
|---|---|---|---|---|---|
| Mining | | Enrique Monge G. | 204 | 47 | $179,577 |
| Civil Engineering | | Miguel Bozzo Ch. | 1142 | 123 | 470,745 |
| Mechanical & Electrical Engineering | | Azi Wolfenson | 1106 | 228 | 416,950 |
| Architecture | | Luis Miró Quesada | 227 | 109 | 196,980 |
| Industrial Engineering | | Luis Macciavello | 411 | 67 | 165,250 |
| Sanitary Engineering | 1945 | Fernando Vargas C. | 123 | 45 | 110,315 |
| Petroleum Engineering | 1946 | Humberto Ruiz C. | 92 | 36 | 128,085 |
| Physical Sciences & Math | 1961 | Pablo Willstater | 124 | 44 | 107,435 |
| **Schools** | | | | | |
| Technology | 1964 | Germán de la Fuente | 141 | | 723,880 |
| Economics | 1963 | Jorge Succar Rahmé | 29 | 9 | 17,910 |
| **Institutes** | | | | | |
| Structures | | Miguel Bozzo Ch. | | | 19,780 |
| Transportation | | M. E. Echegaray | | 15 | 4,850 |
| Topography & Geodosy | | Nicolás Devoto | | 15 | 16,420 |
| Hydraulics & Fluid Mech. | 1964 | Alfonso Alcedán | | | 5,670 |
| Pure & Applied Math | | José Tola P. | | 6 | 32,090 |
| Production Engineering | | Jorge Succar Rahmé | | | 11,200 |
| Nat'l. Devel. Studies | | Jorge Succar Rahmé | | | 18,660 |
| Textile | 1955 | Ivan García C. | 26 | | 25,600 |
| Iron and Steel | 1963 | Enrique Monge G. | | | 7,090 |
| Urban Planning | 1962 | Luis Ortiz de Z. | 61 | | 116,420 |
| Electrical Studies | | Oscar Miranda G. | | | 2,650 |
| Mechanical Studies | | Roberto Molina C. | | | 2,650 |
| Energy Studies | | Roberto Heredia | | | 2,650 |
| **Laboratories** | | | | | |
| Materials Studies | | Manuel González | | | |
| Soils Mechanics | 1964 | José Tong Matos | | | |
| Mathematics | 1964 | Pablo Willstater | | | |
| Geol. & Applied Geomorphology | | Alberto Martínez | 792 | | |
| **Departments** | | | | | |
| Metallurgy | | César Sotillo P. | | 8 | |
| Cultural & Univ. Extension | | César Barrio | | | |
| Preparatory | | Directive Council (Deans, Rector, etc) | 243 | | |

*1964, in U.S. dollars

## UNIVERSIDAD NACIONAL DE LA AMAZONIA PERUANA
(National University of the Peruvian Amazon)
Iquitos

Rector: Dr. Emilio Gordillo Angulo

Public institution
Founded: 1961
Budget: $300,000 (1964)
Faculty: 31 (18 full-time)
Students: 400

| Schools | | Fac. | Stud. |
|---|---|---|---|
| Agronomy & Forestry | Ing. Alfonso Chacón D. | 17 | 62 |
| Industrial Chem. Eng. | Ing. José Reátegui C. | | |
| Pedagogy | Dr. José Ignacio Vigil | | |
| General Studies | | | |

| Institute | |
|---|---|
| Social Investigation | Lt. Col. José Bacletti |

## UNIVERSIDAD NACIONAL DE LAMBAYEQUE
(National University of Lambayeque
Lambayque

Rector: Dr. Elmer Mondoñedo Llontop

Public institution
Founded: 1962

| Faculties | Institute |
|---|---|
| Letters | Agriculture and Livestock |
| Education | |
| Law | |
| Sciences | |
| Medicine | |
| Veterinary Medicine | |
| Economic & Social Sciences | |
| General Studies | |

Schools
Geology
Nursing

UNIVERSIDAD NACIONAL DE SAN AGUSTIN DE AREQUIPA
(National University of San Agustín of Arequipa)
Calle San Agustín 104, Arequipa

Rector: Dr. Carlos Nuñes Valdivia
Vice-Rector: Dr. Enrique Asálgara Ballón

Public institution
Founded: 1825, became university in 1828

This is the second largest university in Peru. In cooperation with the Smithsonian and Carnegie Institutions, a satellite tracking station and a geophysical institute were installed in 1960 at the university for international studies and research in geomagnetism, meteorology and seismology.

| Faculties | Deans |
|---|---|
| Economics and Commerce | Aníbal Rivera M. |
| Law | Luis Taboada B. |
| Education | Roberto González V. |
| Philosophy | |
| Medicine | Felix Maquire V. |
| Sciences | Alfredo Bellido P. |
| Biology Institute | |
| Geology Institute | |
| Industrial Chem. Inst. | |
| Letters | Javier Mayorga G. |

| Institutes | Directors |
|---|---|
| Geophysical | Aníbal Rodríguez B. |
| Cultural Extension | Jorge Cornejo P. |

UNIVERSIDAD NACIONAL DE SAN ANTONIO ABAD DEL CUZCO
(National University of San Antonio Abad of Cuzco)
Apartado 167, Cuzco

Rector: Dr. Jorge Chavez Chaparro
Vice-Rector: Dr. Carlos Kalafatovich Valle

Public institution
Founded: 1598, officially inaugurated in 1696
Budget: $839,000 (1960)
Faculty: 242
Students: 3,100

| Faculties | Deans | Fac. | Budget |
|---|---|---|---|
| Law | Carlos F. Quadros | 27 | |
| Letters | Horacio Villanueva U. | 25 | |
| Science | José Angel Ramírez | 21 | |
| Education | Nilbert Salas R. | 27 | |
| Economics & Commerce | Mario Campana R. | 25 | |
| Chemistry | | 21 | |
| Civil Engineering | Abelardo Ugarte V. | 32 | |
| Agronomy | Hugo Pacheco G. | 33 | 13,500* |

*Professors salaries included in general budget.

UNIVERSIDAD NACIONAL DE SAN CRISTOBAL DE HUAMANGA
(National University of San Cristóbal of Huamanga)
Ayacucho

Rector: Dr. Efrain Morote Best
Vice-Rector: Ing. Luis González Carré

Public institution
Founded: 1677
Faculty: 60
Students: 600

This university was closed for nearly 50 years and reopened in 1962 under the direction of Fernando Romero, a distinguished Peruvian educator who initiated a program based on applied study and research. All students are required to take a one-year basic general course given at the university for admission. Extension work (community activities) is required from faculty members and students.

| Faculties | Deans |
|---|---|
| Engineering | Roberto Ishikama T. |
| Rural & Zootechnical Institute | |
| Mining Institute | |
| Chemical Engineering Institute | |
| Social Sciences | Luis Lumbreras S. |
| Education Institute | |
| Social Service Institute | |
| Anthropology Institute | |
| Natural Sciences | Angel Díaz Celis |
| Biological Sciences Institute | |
| Obstetrics and Nursing Inst. | |

UNIVERSIDAD NACIONAL DE TRUJILLO
(National University of Trujillo)
Calle Diego de Almagro, Trujillo

Rector: Dr. S. Virgilio Vanini de los Ríos

Public institution
Founded: 1824
Budget: $348,370 (1960)
Full-time Faculty: 100
Students: 6,000

The University of Trujillo is the third largest university in Peru. It has a strong students' organization which participates in strikes, labor disputes and other political, social and cultural activities.

| Faculties | Deans | Stud. | Budget |
|---|---|---|---|
| Law | Jorge Angulo A. | | |
| Pharmacy and Biochemistry | Jorge Canales G. | | |
| Chemical Engineering | Pedro Reyes P. | | |
| Economics and Commerce | Andrés Fukunaga S. | | |
| Business Administration School | | | |
| Public Accounting School | | | |
| Economics School | | | |
| Biological Sciences | Antonio Samanamud | | |
| Pure Biology Department | | | |
| Zoology Department | | | |
| Physical & Mathematical Sciences | Javier Trevisani C. | | |
| Mathematics-Physics Department | | | |
| Chemistry-Physics Department | | | |
| Letters and Education | Anibal Espino R. | | |
| Medicine | Jorge de Vinatea C. | 60 | $8,000[64] |
| Pathology Department | Percy Falcon | | |
| Physiology Department | | | |
| Microbiology Department | Hernán Miranda | | |
| Anatomy Department | Jorge de Vinatea | | |
| Biochemistry Department | | | |
| Pharmacology Department | | | |

## UNIVERSIDAD NACIONAL DEL CENTRO DEL PERU
(National University of the Center of Peru)
Calle Real 160, Huancayo

Acting Rector: Dr. Nilo Arroba

Public institution
Founded: 1962

When the National Academy of Sciences task force visited this university in the fall of 1964, class attendance was practically nil. The university has recently acquired one of SIPA's experiment stations.

| Faculties | Deans |
|---|---|
| Economics & Commerce | Adriel Osorio Z. |
| Administrative Sciences | José Bravo Gort |
| Oceanography & Fisheries | |
| Education | Maurillo Arriola G. |
| Architecture | Carlos Recoba C. |

## UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS
(National University of San Marcos)
Parque Universitario, Lima

Rector: Dr. Luis Sánchez Díaz
Vice-Rector: Dr. Ulises Montoya Manfredi

Public institution
Founded: 1551
Budget: $2,809.590 (1961)
Faculty: 1,638
Students: 14,900

The University of San Marcos is regarded as the oldest institution of higher learning in the Americas. It is the largest university in Peru and offers the most extensive programs.

| Faculties | | Stud[1] | Fac[2] | Budget | Found |
|---|---|---|---|---|---|
| Law | Guillermo García M. | 1532 | 25 | $927,766[1] | |
| Liberal Arts | Augusto Tamayo V. | 1751 | 45 | | |
| Sciences | Flavio Vega V. | 1308 | 22 | | |
| Economics & Commerce | Carlos Campuñay M. | 3000 | 21 | | |
| Pharmacy & Biochemistry | Julio López G. | 850 | 22 | | 1943 |
| Dentistry | Pedro Ayllón B. | 882 | 18 | | 1943 |
| Education | Emilio Barrantes | 1238 | 19 | | |
| Chemistry | Gastón Pons M. | 225 | 19 | | |
| Veterinary Medicine | Humberto Ruiz U. | 270 | 50 | 226,818[2] | 1946 |
| Medicine | Alberto Guzmán B. | 1840 | 14 | | 1856 |
| Biochemistry Dept. | Alberto Guzmán B. | | | | |
| Morphology Dept. | Olga Castro | | | | |
| Pathology Institute | Alberto Cuba C. | | | | |
| Andean Biology Inst. | Tulio Velásquez | | | | |

[1] 1961 [2] 1962

## UNIVERSIDAD NACIONAL "SAN LUIS GONZAGA"
("San Luis Gonzaga" National University)
Ica

Rector: Dr. Gregorio Garayar Pacheco
Vice-Rector: Dr. Manasés Ocampo Ríos

Public institution
Founded: 1961

A four-year liberal arts college.

| Faculties | Deans |
|---|---|
| Medicine | Anibal Casavilca R. |
| Economic & Social Sciences | Vigildo Roel Pineda |
| Letters & Education | César Angeles C. |
| Agronomy | Carlos Villagarcía U. |
| Law | Ramino Nique Espiritú |
| Pharmacy & Biochemistry | Humberto Zapata Rivas |
| Civil Engineering | |
| Veterinary Medicine | Carlos Llúncor E. |
| Odontology | Naldo Balaresco G. |

## UNIVERSIDAD PARTICULAR DE "SAN MARTIN DE PORRES"
("San Martin de Porres" Private University)

President of the Patronato: Sr. Juan Alfonso Vásquez Gómez

Private institution
Founded: 1962

This private Catholic university is an expansion of the former Instituto Dominicano de Ciencias Sociales.

Faculties
Education & Letters
Philosophy
Spanish & Literature
Journalism
Geography
History

## UNIVERSIDAD PEDAGOGICA "INCA GARCILAZO DE LA VEGA"
("Inca Garcilazo de la Vega" Pedagogic University)

Rector: Dr. Ezequiel Sánchez Soto
Private institution

| Faculties | Deans |
|---|---|
| General Studies | Eugenio Chan Cruz |
| Primary Education | Leopoldo Diaz H. |
| Secondary Education | Justo Avellaneda V. |
| Commercial & Industrial Education | Luis Salazar L. |
| Artistic Education | Percy Murillo G. |
| **Institutes** | |
| Physical Education | David Torres C. |
| Touristic Education | Eleonora Silva S. |
| Administrative Sciences | Armando Laos Rodriguez |
| Agropecuarian Education | Nemesio Campos C. |

## UNIVERSIDAD PERUANA DE CIENCIAS MEDICAS Y BIOLOGICAS
(Peruvian University of Medical and Biological Sciences)
Jiron Union 1146, Lima

Rector: Dr. Honorio Delgado
Vice-Rector: Dr. Oscar Soto

Private institution
Founded: 1960

As a result of the enforcement of co-gobierno under the 1960 New University Law, the Faculty of Medicine of San Marcos University resigned in a body and set up this privately-supported, independent medical school in Lima.

| Faculties | Deans | Fac. | Stud. |
|---|---|---|---|
| Medicine "Cayetano Heredia" | Alberto Hurtado | 209 | 197 |
| Anatomy | Federico Leon | | |
| Biochemistry | | | |
| Physiology | Enrique Fernandez | | |
| Bacteriology | | | |
| Pharmacology | Vicente Zapata O. | | |
| Histology | | | |
| Pathology | | | |
| High Altitude Research Institute | | 25 | |
| Humanities & Biological Sciences Institute of Investigation | Leopoldo Chiappo | 17 | 70 |
| **Schools** | | | |
| "Victor Alzamora Castro" Graduate | | | |
| Nursing | | | |
| Public Health | | | |
| Obstetrics | | | |
| Technicians | | | |

## UNIVERSIDAD TECNICA DE CAJAMARCA
(Technical University of Cajamarca)
Cajamarca

Rector: Ing. Ciro Arribaplata Bazán
Vice-Rector: Dr. Cesar Silva Rodriguez

Founded: 1962
Public institution

This university opened in 1962 with a Faculty of General Studies, six schools and seven institutes. It has established a Centro de Capacitación de Obreros (Worker's Training Center).

| Faculties | |
|---|---|
| Agronomy | Jorge Navarro Talavera |
| Engineering | Guillermo Urteaga Rocha |
| Education | Jesús Tejada Atalaya |
| Rural Medicine | José Uceda Perez |

## UNIVERSIDAD TECNICA DE PIURA

President of the Patronato: Ing. Rómulo Franco Calle

Founded: 1961, began to function in 1962
Public institution

This university has planned institutes which will admit elementary school graduates and train technicians at the secondary school level.

| Professional Schools | Deans |
|---|---|
| Economics | Alejandro Figueroa A. |
| Agronomy | |
| Veterinary Medicine | |
| Industrial Engineering | |
| Petroleum Engineering | |
| Navigation & Fisheries | |

| Institutes |
|---|
| Agriculture & Livestock |
| Metallurgy & Welding |
| Chemistry |
| Electricity |
| Mechanics |
| Construction |
| Commerce |

UNIVERSIDAD TECHICA DEL ALTIPLANO
(Technical University of the Altiplano)
Calle de Puno 415, Puno

Rector: Ing. J. Alberto Barreda Cuentas

Founded: 1961
Public institution
Students: 87 (1962)

This university opened in 1962 with 87 students, initiated in 1963 a general college program similar to a U.S. community college offering two-year terminal programs in agriculture and engineering. It has an experimental farm devoted to the improvement of alpaca, vicuna and llama. Programs in applied studies are intended for the Indians in the region.

Faculty of Agropecuarian Engin ering
Institute of Socio-Economic Studies
Regional Agricultural Service
Regional Livestock Service
Regional Fisheries Service

| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 |
|---|---|---|---|---|---|---|---|---|---|---|
| EDUCACION | 1078 | 1218 | 1263 | 1435 | 1779 | 3189 | 4284 | 6403 | 8514 | 10388 |
| Educación | 1078 | 1218 | 1263 | 1435 | 1779 | 3077 | 4164 | 6260 | 8366 | 10388 |
| Educación Familiar | - | - | - | - | - | 112 | 120 | 143 | 148 | - |
| HUMANIDADES | 6430 | 7985 | 9734 | 11265 | 11688 | 15559 | 16584 | 17733 | 21495 | 22698 |
| - Administración | - | - | - | - | - | 83 | 23 | 228 | 539 | 676 |
| - Artes Plásticas | - | - | - | - | - | 42 | 39 | 53 | 60 | 73 |
| - Artes y Ciencias | - | - | - | - | - | - | - | - | 115 | 295 |
| - Ciencias Económicas (Economistas) | - | - | - | - | - | 408 | 312 | 560 | 1841 | 1116 |
| - Ciencias Económicas (Contador Público) | - | - | - | - | - | 2944 | 3622 | 3012 | 4712 | 2683 |
| - Ciencias Económicas y Comerciales | 2040 | 2331 | 2708 | 3313 | 3922 | 1129 | 1286 | 2575 | 774 | 4755 |
| - Ciencias Sociales | - | - | - | - | - | 171 | 95 | 98 | 313 | 354 |
| - Derecho | 1814 | 2086 | 2406 | 2653 | 2987 | 3133 | 3619 | 3715 | 3680 | 4131 |
| - Estudios Generales | - | - | - | - | - | 1163 | 102 | 610 | 671 | - |
| - Estudios Religiosos | - | - | - | - | - | 23 | 36 | 30 | 45 | 65 |
| - Estudios Superiores (Femeninos) | - | - | - | - | - | 449 | 592 | 555 | 555 | 580 |
| - Letras | 2462 | 3441 | 4474 | 5168 | 4562 | 5649 | 6458 | 5874 | 7686 | 7613 |
| - Periodismo | 114 | 127 | 146 | 131 | 217 | 240 | 268 | 293 | 332 | 327 |
| - Servicio Social | - | - | - | - | - | 125 | 132 | 130 | 132 | - |
| - Teología | - | - | - | - | - | - | - | - | 40 | 30 |
| MEDICINA | 2944 | 2863 | 2809 | 3197 | 2937 | 3631 | 3932 | 4036 | 3935 | 3842 |
| - Medicina | 2625 | 2045 | 1866 | 2110 | 1772 | 2642 | 2988 | 3274 | 3374 | 3126 |
| - Obstetricia | 231 | 297 | 301 | 295 | 261 | 5 | 7 | 9 | 14 | 236 |
| - Odontología | 388 | 521 | 642 | 792 | 904 | 984 | 937 | 753 | 547 | 480 |
| CIENCIAS | 4532 | 4940 | 5701 | 5986 | 5750 | 3309 | 3642 | 3841 | 3973 | 4266 |
| - Biología | 175 | 212 | 258 | 272 | 197 | 493 | 566 | 597 | 725 | 817 |
| - Ciencias | 3192 | 3460 | 4017 | 4155 | 3847 | - | - | - | 8 | 1011 |
| - Farmacia y Bioquímica | 676 | 795 | 810 | 927 | 990 | 1364 | 1390 | 1271 | 1025 | 987 |
| - Física y Matemáticas | 115 | 141 | 223 | 215 | 140 | - | 50 | 76 | 299 | - |
| - Geología | 250 | 186 | 227 | 235 | 367 | 328 | 339 | 359 | 352 | 239 |
| - Matemáticas | - | - | - | - | - | 290 | 366 | 393 | 390 | 255 |
| - Medicina Veterinaria | 124 | 146 | 166 | 182 | 209 | 331 | 437 | 450 | 374 | 372 |
| - Peritos Agrimensores | - | - | - | - | - | 6 | 11 | 9 | - | - |
| - Pesquería | - | - | - | - | - | 66 | 19 | 195 | 291 | 340 |
| - Química | - | - | - | - | - | 431 | 464 | 491 | 509 | 245 |
| INGENIERIA | 2,883 | 3,182 | 3,727 | 4,237 | 4,686 | 4,772 | 6,114 | 6,863 | 7,511 | 8,833 |
| - Agrícola | - | - | - | - | - | - | 51 | 86 | 114 | 213 |
| - Agrimensores | - | - | - | - | - | - | - | - | - | 29 |
| - Agronomía | 657 | 800 | 873 | 900 | 819 | 1,265 | 1,421 | 1,643 | 2,095 | 2,226 |
| - Agropecuaria | - | - | - | - | - | - | - | 91 | 104 | 55 |
| - Arquitectura y Planeamiento | - | - | - | - | - | 265 | 274 | 413 | 494 | 604 |
| - Civil a/ | 1,906 | 2,090 | 2,514 | 2,968 | 3,406 | 1,460 | 1,856 | 1,836 | 1,838 | 1,786 |
| - Economistas | - | - | - | - | - | - | - | - | - | 55 |
| - Física Matemática | - | - | - | - | - | - | - | - | - | 113 |
| - Forestal | - | - | - | - | - | 42 | 17 | 18 | 24 | 45 |
| - Industrial | - | - | - | - | - | 389 | 390 | 463 | 368 | 572 |
| - Mecánica y Electricidad | - | - | - | - | - | 579 | 1,002 | 1,035 | 1,082 | 1,502 |
| - Minas y Metalurgia | - | - | - | - | - | 188 | 278 | 311 | 297 | 336 |
| - Petróleo | - | - | - | - | - | 76 | 114 | 105 | 96 | 106 |
| - Química | 320 | 292 | 340 | 369 | 461 | 274 | 350 | 433 | 484 | 561 |
| - Rural | - | - | - | - | - | 40 | 55 | 64 | 69 | 108 |
| - Sanitaria | - | - | - | - | - | 90 | 136 | 131 | 104 | 125 |
| - Zootécnica | - | - | - | - | - | 104 | 170 | 234 | 342 | 397 |
| TOTAL GENERAL | 17,867 | 20,188 | 23,234 | 26,120 | 26,840 | 30,460 | 34,556 | 38,876 | 45,428 | 50,027 |

a/ Entre 1955 y 1959 comprende todas las especialidades de Ingeniería, excluidas Química y Agronomía.

CUADRO N° 2-37 PERSONAL DOCENTE, POR NIVELES Y RAMA DE EDUCACION

| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 |
|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL | 41364 | 43911 | 54448 | 54396 | 58846 | 62781 | 67508 | 71444 | 99028 | 93426 |
| PRE-ESCOLAR Y PRIMARIA a/ | 29753 | 31679 | 32117 | 35258 | 38369 | 40700 | 43353 | 45902 | 48405 | 54226 |
| MEDIA | 9034 | 9629 | 10435 | 12113 | 13044 | 15848 | 17219 | 17783 | 18338 | 22133 |
| - SECUNDARIA COMUN | 6366 | 6706 | 7063 | 8307 | 8662 | 11017 | 12001 | 12574 | 13010 | 16043 |
| - SECUNDARIA TECNICA | 2668 | 2923 | 3372 | 3806 | 4382 | 4831 | 5218 | 5209 | 5328 | 6090 |
| - Agropecuaria | 185 | 227 | 263 | 274 | 318 | 425 | 450 | 628 | 602 | 817 |
| - Industrial | 1292 | 1312 | 1645 | 1871 | 2002 | 2114 | 2498 | 2109 | 2256 | 2760 |
| - Varones | | | | | | 1188 | 1549 | 1097 | 1173 | 1557 |
| - Mujeres | | | | | | 926 | 949 | 1012 | 1083 | 1203 |
| - Comercial | 1191 | 1384 | 1464 | 1661 | 2062 | 2292 | 2270 | 2472 | 2470 | 2513 |
| SUPERIOR | 2534 | 2560 | 2667 | 2896 | 2545 | 3378 | 3709 | 4485 | 5467 | 7288 |
| - NORMAL | 309 | 274 | 269 | 303 | 355 | 464 | 574 | 761 | 868 | 1293 |
| - UNIVERSITARIA | 2225 | 2286 | 2398 | 2593 | 2190 | 2914 | 3135 | 3724 | 4599 | 5995 |
| - Educación | | | | | | 157 | 171 | 203 | 224 | 455 |
| - Humanidades | | | | | | 742 | 769 | 883 | 1019 | 1498 |
| - Medicina | | | | | | 833 | 920 | 1308 | 1355 | 1484 |
| - Ciencias | | | | | | 736 | 802 | 752 | 791 | 856 |
| - Ingeniería | | | | | | 446 | 473 | 578 | 1210 | 1702 |
| OTRAS ENSEÑANZAS | 43 | 43 | 9229 | 4129 | 4888 | 2855 | 3027 | 3274 | 26818 | 9779 |
| - ALFABETIZACION | | | 9181 | 4067 | 4833 | 2778 | 2913 | 2903 | 26410 | 9097 |
| - ARTESANAL | 43 | 43 | 48 | 48 | 55 | 77 | 114 | 133 | 140 | 293 |
| - COMPETENCIA | | | | 114 | | | | 238 | 268 | 389 |

a/ Incluye primaria de adultos.

# SCIENTIFIC AND TECHNOLOGICAL RESEARCH ORGANIZATIONS AND PROFESSIONAL SOCIETIES

## Introduction

In this section we have attempted to describe major Peruvian organizations concerned with the development of science, technology, and education and economic planning. Because of the broad nature of this report, the listing is not all-inclusive. Undoubtedly some significant institutions have been omitted.

The organizations described here have been broadly grouped into sections according to various fields, e.g., Agricultural and Plant Sciences, Physics, Economics and Planning, and so on. Those organizations with activities encompassing more than one field have been placed in the section corresponding to their major concern.

Wherever possible, the data compiled for each organization includes structure, budget, officers, and a short description of the character and function of the organization.

An alphabetical index of the organizations described is included at the end of this section. Reference numbers refer to the numbered bibliography which follows section IV.

## SCIENTIFIC AND TECHNOLOGICAL RESEARCH ORGANIZATIONS AND PROFESSIONAL SOCIETIES

Academia Nacional de Ciencias Exactas, Físicas y Naturales de Lima*
(National Academy of Exact, Physical and Natural Sciences of Lima)
Apartado 1979, Lima

Under the Ministry of Education
Founded: October 23, 1939, by Supreme Decree

Directorate:

| | |
|---|---|
| President: | Dr. José Tola Pasquel |
| Vice-President: | Dr. Honorio Delgado |
| Secretaries: | Alberto Rodríguez S.J. |
| | Guillermo Orbegoso |
| Treasurer: | Carlos Miñano |
| Librarian: | Darío Acevedo |

Divisions: Exact Sciences
Physical and Chemical Sciences
Physics
Chemistry
Natural Sciences
Biology
Anthropology
Botany and Zoology
Geology and Cartography

40 members

President Belaúnde's Committee for the Creation of a National Research Council (not exact title)

President Belaúnde signed a Supreme Resolution on February 25, 1964, creating a committee of six members to prepare a plan for the establishment of a National Research Council, and in the meantime to act as a National Research Council. This committee has not yet met.

Dr. José Arias Stella from the Ministry of Health, Dr. Antonio Bacigalupo from the Agrarian University, and Dr. José Tola Pasquel of the National Engineering University are members of this committee, as well as representatives from the University of San Marcos, the Ministry of Education, and the Peruvian University of Medical and Biological Sciences (formerly known as the Escuela de Medicina "Cayetano Heredia").

---

*Revised by Dr. Tola, May 1966.

## AGRICULTURAL AND PLANT SCIENCES

Asociación de Agricultores de Cañete
(Association of Farmers of Canete)
Casilla 37, San Vicente de Cañete

Private non-profit organization
Founded: 1926
Budget: $75,000 (1960)

| | |
|---|---|
| President: | Jorge Correa Santiestaban |
| Vice President: | Luis Dibós Cauvi |
| Secretary: | Ing. Agr. Teodoro Boza Barducci |
| Treasurer: | Ing. Agr. Alfonso García Lawezzari |
| Directors: | Ings. Agrs. Dante Testino Guarderas and Carlos Tori Arena |
| Departments: | Agronomy and Genetics<br>Chemistry and Soils<br>Entomology and Phytopathology |
| Description: | The Association is dedicated to the improvement of the agricultural production of the valley and defense of the members, individually and collectively.<br><br>It has an agricultural experiment station directed by Ing. Teodoro Boza which carries on agricultural research and extension. [14] |

Asociación de Médicos Veterinarios del Perú *
(Peruvian Association of Veterinarians)
Apartado 78, Barranco, Lima

| | |
|---|---|
| President: | Dr. Elmo de la Vega |
| Description: | In addition to its society functions, the Association promotes the organization of congresses and conventions related to veterinary science and gives information about the various services veterinary science offers the community |

Centro Nacional de Patología Animal **
(National Center of Animal Pathology)
Calle Carrillo 402, Lima

Formerly the Instituto de Investigaciones Pecuarias, this institution was recently assigned to SIPA under the Ministry of Agriculture.

Description: The Center operates two main laboratories: one, located in Villa, is devoted to vesicular diseases; and the second, located in the Center's offices in Lima, to other diseases (those caused by bacteria, virus, fungi, and parasites.)

* Added in Peru, April 1966.
** Revised in Peru, April 1966.

Centro Nacional de Patología Animal (continued)

The Center's principal functions are: (1) research on animal pathology, (2) preparation of biological products, and (3) the Center is in charge of the Laboratory of Diagnosis, and has Regional Laboratories in Piura, Iquitos, and Arequipa.

Cerro de Pasco Corporation

President: Ing. Alberto Benavidez

This U.S. lead and zinc mining company operates half a million acres of sheep and cattle ranches. It has an experiment station for sheep and a veterinary clinic and has carried out some important research on sheep.

Instituto de Genética de la Sociedad Nacional Agraria
(Genetics Institute of the National Agrarian Society)
Apartado 4098, Lima

Under the National Agrarian Society
Founded: 1939
Budget: $37,270 (1960)

Director: Dr. Jose Giles

Description: The Institute was created for the improvement of cotton, especially Tanguis. It has a laboratory for cotton fiber and employs five full-time scientists. [14]

Instituto Veterinario de Investigaciones Tropicales y de Altura
(Veterinary Institute for Tropical and High Altitude Research)
Apartado 78, Barranco, Lima

Under the Faculty of Veterinary Medicine, San Marcos University
Founded: 1963 with the assistance of the U. N. Special Fund, which allocated $2,247,900 for a three-year period.

Project Manager: Dr. P.D.L. Guilbride
Co-Director: Dr. Manuel Moro

Description: The Agrarian University and the Servicio de Investigación y Promocion Agraria are collaborating bodies for the Institute. A main research station for research work at high altitude was constructed with funds ($50,000) from the Rockefeller Foundation in Huancayo at an altitude of about 11,000 feet. There is a subsidiary tropical research station at Pucallpa. Both stations are situated close to SIPA farms with whom the Veterinary College of San Marcos University has signed a cooperative agreement for an indefinite period of time.

Research is being conducted on such problems as incubation at high altitude, adaptation to high altitude and the tropical infectious disease and parasitic disease. There are about 50 scientists on the staff.

Oficina Técnica de Agricultura
(Technicial Office of Agriculture)

Private organization
Founded: 1953

Description: The Technical Office of Agriculture is equipped to conduct surveys and technical work of all types within and outside the territorial limits of Peru. It also prepares reports ar acts on a consultant basis at the discretion of its Board of Directors. During the first decade of operation the Office realized more than 120 projects including studies, research work, planning surveys, and complete administrative work in the different branches of agriculture, economics, industry, conservation, irrigation and sociology.

The Office is staffed by specialists in the fields of agriculture, economics, sociology, conservation, irrigation and agricultural industries. Several of the staff have obtainec their masters degrees from universities in the United States The majority of the staff teach in the universities.

Servicio de Investigación y Promoción Agraria (SIPA)*
(Agricultural Research and Development Service)
Edificio Ministerio de Trabajo, pisos: 10-11-12

Semi-autonomous institution under the Institute of Agrarian Reform and Promotion, Ministry of Agriculture

Founded: 1960

Head, General Direction: Ing. Oscar Fuster
Head, Technical Direction: Ing. Carlos Bohl
Head, Experimentation: Dr. Alexander Grobman
Head, Extension: Ing. Enrique Olivares
Head, Livestock Development: Ing. Grunther Meinhold
Head, Agricultural Development: Ing. Francisco Valencia

Function: Organization and administration of technical assistance in agropecuarian activities through research and extension, socio-economic studies and development of specific programs.

Organization and administration:

There are four units in SIPA: Experimentation, Extension, Agricultural Development and Livestock Development. The country is divided into 12 agrarian zones, each under a director and each divided into the four units mentioned above. Many members of the SIPA staff teach at the Universities and some University research is done in SIPA facilities.

* Revised in Peru, April 1966.

Servicio de Investigación y Promoción Agraria (continued)

SIPA has a system of branch stations scattered over the country. All branch station projects are approved and supervised from La Molina. In 1964, 2009 projects were budgeted, each to run about five years. Research interests in SIPA are presently concerned with corn, beans, potatoes, rice, forages, small grains, various aspects of animal husbandry and animal pathology, and soils.

The main experiment stations are: Junín (budget: $67,000), La Molina (budget: $302,475), Lambayeque (budget: $49,090), Tingo María (budget: $183,760). These are the 1962 budgets.

Sociedad Entomológica Agrícola del Perú
(Agricultural Entomology Society of Peru)
Apartado 4796, Lima

Private institution
Founded: 1956

Director: Dr. Pedro C. Aguilar

Description: The Society is dedicated to the development of agricultural entomology and exchange of ideas and knowledge between members. It holds regional conventions of agricultural entomologists; by the end of 1962 it had held seven.

There are 180 members who carry out their work at the institutions in which they are employed. The Society has no paid positions.[14]

Sociedad Nacional Agraria
(National Agrarian Society)
Antonio Miró Quesada 367, Lima

Private institution
Founded: 1824

President: Augusto Costa Elice
First Vice President: Gustavo Aspillaga
Second Vice President: Enrique Carrillo A.
Treasurer: Luis Picasso P.

Description: The Society was established to serve the needs of the cotton growers and other agriculturalists. It is concerned with cotton, sugar, grapes and wine, rice, seeds, potato products, stock farming, economics and coffee.[14]

The Society has 50 directors, 14 permanent committees, one arbitration tribunal, 107 local committees, and 9,258 members.[16]

## BIOLOGY

Estación Altoandina de Biología
(High Andes Biology Station)
Hacienda Checayani AZANGARO, Puno

**Private institution**
**Founded:** 1953
**Budget:** About $2,000 (1960)

**Director:** Hernando de Macedo

**Description:** The station is concerned with the study of the flora and fauna of the high regions of the Andes, especially of the Lake Titicaca valley, study of Andean man, and protection of animals and plants in danger of extinction.

It has a laboratory with scientific instruments and housing for zoological and botanical collections. A director and zoologist are employed without pay. The laboratory assistant is salaried. University professors and researchers with a scientific mission visit the station for days, weeks or months. The station provides gratis room and board as well as instruments and materials.[14]

Instituto Nacional de Biología Andina
(National Institute of Andean Biology)
Apartado 4073, Lima

**Affiliated with the Faculty of Medicine, San Marcos University**
**Founded:** 1930

**Director:** Dr. Tullio Velasquez

**Description:** The Institute conducts research on the physiology of inhabitants of the Andes and their resistance to high altitudes, acclimatisation and fertility of animals taken to high altitudes with a view to industrial use, methods of hygiene, adaptive faculties of men at great heights, chronic mountain sickness and remedies, ecology and sociological problems.

It occupies fairly cramped but reasonably well-equipped laboratories in the Loayza Hospital in Lima and has a high altitude laboratory in Morococha, a mining district about 14,500 feet above sea level.

Museo de Historia Natural - Departamento de Zoología
(Museum of Natural History - Department of Zoology)
Universidad Nacional de Cuzco, Casilla 167, Cuzco

A part of the National University of Cuzco
Founded: 1957
Budget: $200 (1960) for the acquisition of animal species

Director: Dr. Jorge Chávez Chaparro (Ad honorem)

Description: The museum studies the fauna of the Cuzco area. The only employee is an auxilliary collector of animal species who works about one and one-half days a week at a monthly salary of $24.[14]

Museo de Historia Natural "Javier Prado"
("Javier Prado" Museum of Natural History
Avenida Arenales 1256 (Apartado 1109), Lima

A part of San Marcos University
Founded: 1918
Budget: $1,030 (1960)

Director: Dr. Ramón Ferreyra R.

Description: The museum carries on a small research program in zoology, botany and geology. Eight part-time (half-day) scientists are employed. Though lacking adequate facilities and budget, it reputedly does remarkably well and is always willing to give aid and workspace to visiting scientists, besides facilitating their travel into the field. Among its collections are a herbarium of 100,000 specimens and collections of insects, parasites, fishes, amphibians and reptiles, birds, mammals and fossils.[4]

## MARINE RESOURCES (Revised Paracas, Peru, April 1966)

Corporación Nacional de Fertilizantes
(National Corporation of Fertilizers)
Jr. Junín 455, Lima

Founded: 1909 under the name Compañía Administradora del Guano. In 1963, the present name was assumed.
Budget: Between $18,660 and $22,400 annually

President of the Directorate: Dr. Ernesto Arias Schreiber
Administrative Manager: Ing. Octavio Diez Canseco
Technical Manager: Ing. Luis Gamarra Dulanto

Corporación Nacional de Fertilizantes (continued)

Description: The policy of CNF is established by the Directorate which consists of representatives from: the Agricultural Ministry (1), the Development and Public Works Ministry (2), the Finance and Commerce Ministry (1), Agrarian University (1), the National Federation of Chemical Engineers (1), and the National Agrarian Society (1).

Its activities are directed to the exploitation and commercialization of the guano from the islands and the Peruvian coast. It has three grinding and treatment plants and one Laboratory of Chemical Analysis. It carries out bird censuses and combats avian parasitosis. It takes on the plans for installation of fertilizer plants in different zones of Peru.

It publishes the Bulletin monthly.

Instituto del Mar del Perú
(Peruvian Sea Institute)
Avenida Bolognesi 24 (Apartado 3747), La Punta, Callao

Government organization

Founded: 1960, under the name Research Institute for Marine Resources, by the Peruvian Government with the financial assistance of the U.N. Special Fund and the technical assistance of the Food and Agricultural Organization. In 1964, Special Fund support was ended and the present name taken.

Budget: For the period 1960-64, $1,766,500 from the Special Fund and $812,000 from the Peruvian Government. The present budget is $52,000 from the Peruvian Government and the National Fisheries Society.

| | |
|---|---|
| President of the Directive Council: | Vice-Admiral Miguel Chávez Goytizolo |
| General Director: | Captain Alfredo V. Freyre V. |
| Technical Director: | Dr. Jorge Sánchez R. |
| Administrative Director: | Commander Juan Manuel Castro |

Departments: Biology
Oceanography
Technology
Statistics and Economy

Description: The function of the Institute is to plan, direct and execute the hydrobiological investigations with the objective of assisting the Government and private industry to make maximum economic use of Peru's marine resources.

Instituto del Mar del Perú (continued)

The Directive Council consists of a President, Vice-President, the Director of the Fisheries Service, the Manager of the National Corporation of Fertilizers, the President of the Committee of Oceanography from the Geographical Society, the Rector of the Agrarian University, two delegates from the National Fisheries Society, and the General Director of the Institute.

The Institute's activities include: research on anchovy, guano bird populations, and whales; taxonomic studies for the inventory of the icthio-fauna of Peru; wide oceanographic research programs; technical chemical studies on fisheries products and technical industrial investigations; & studies on fish for human consumption. In collaboration with other countries, the "El Niño" phenomenon is studied. The Institute collaborates with scientists and organizations from other nations.

The Institute has coastal laboratories in Paita, Chimbote, Pisco, and Ilo, and operates two research vessels. Postgraduate students may work in the Institute's laboratories and installations. The Institute employs some 130 scientists, technologists, and administrative personnel.

The results of the Institute's investigations are published in Boletines and Informes.

Servicio de Pesquería
(Fisheries Service)
Edificio Ministerio de Educación Pública, Parque Universitario, Lima

Under the Ministry of Agriculture
Founded: 1944, as the Department of Fisheries, under the Ministry of Development and Public Works, transferred in 1946 to the Ministry of Agriculture, became the present Servicio in 1961.
Budget: Approximately $66,700.

Director: Commander Germán Castillo Z.

Divisions:

| | |
|---|---|
| Hydrobiology | Fishery Promotion |
| Fishery Control | Fishery Technology |

Description: The Service executes Government fisheries policy and conducts scientific, technical and administrative work on fisheries. It has a hydrobiological laboratory and stations at Loreto, Junín, Tumbes and Arequipa.[14] The hydrobiology division does research on the interior waters, in the Service's experiment stations.

Servicio de Pesquería (continued)

The Director represents the Ministry of Agriculture in the National Fisheries Council, has an Advisory Committee and is connected to the National Planning Institute and to the Intersectoral Committee.

It publishes monthly Boletines and Informes.

Sociedad Nacional de Pesquería
(National Fisheries Society)
Avenida Wilson 911, piso 2, Lima

President of the Directorate: Mr. Arturo Madueño
General Manager: Mr. Carlos Otero Lora

Departments: Economic Studies, Industrial Relations, Public Relations, Technical, Local Committees

Description: The Directorate consists of a President, Treasurer, General Advisor and 26 directors from various fisheries and industries.

All persons connected with the fishing industry are engaged in some way with this Society. The Society has adequate representation in the National Fisheries Council, and collaborates the Agrarian University, the University of San Marcos, and with the National Planning Institute through the Fishery Sectoral. It maintains relations, through its departments, with all Government organizations, with FAO, UNICEF, the Fish Meal Exporters Organization, CIT, and the Instituto del Mar. The Technical Department maintains permanent relations with the scientific and foreign entities and frequently represents the Society in international scientific and technological conferences.

## DENTAL SCIENCES

Asociación Odontológica del Perú
(Odontological Association of Peru)
Lampa 306, Lima

Founded: 1945
President: Victor A. Casagrandi
Secretary-General: V. Raúl Iparraguirre
200 members

Comité Nacional de la Federación Dental Internacional (F.D.I.)
(National Committee of the International Dental Federation)
Edificio Dall Orso, Plaza de San Martín 917, Lima

Secretary: Dr. Pedro Ayllón

Consejo Peruano de la Federación Odontológica Latinoamericana (F.O.L.A.)
(Peruvian Council of the Latin American Odontological Federation)
Plaza San Martín 917, Oficina 208, Lima

Private organization
Founded: 1917

President: Dr. Pedro Ayllón

Members: Felipe Plaza, Victor Raúl Iparraguirre, Augusto Iparraguirre, Augusto Taiman and Benjamín Basauri

## MEDICAL SCIENCES

Academia de Estomatología del Perú
(Peruvian Stomatology Academy)
Apartado 2467, Lima

President: Dr. Julio Begazo Sanz
Secretary: Dr. Oscar del Aguila

Academia Médica Peruana "Daniel A. Carrión"
("Daniel A. Carrión" Medical Academy of Peru)
Jirón Ucalayi 218, Calle Villalta, Lima

Private organization
Founded: 1930
Budget: $1,343 (1960)

Director: Dr. Gilberto Morey Sotomayor
President: René Gastelumendi Velarde
300 members (medical doctors)

Academia Nacional de Medicina
(National Academy of Medicine)
Unión 876, Lima

Founded: 1884
President: Dr. Francisco Grana
Permanent Secretary: Dr. Carlos E. Paz Soldán
40 members; 60 honorary members

Academia Peruana de Cirugia
(Peruvian Academy of Surgery)
Camaná 733, Lima

Private organization
Budget: $7,836
President: Dr. Gilberto Morey Sotomayor
Membership: Medical and surgical institutions and scientists.

Anglo-American Hospital

The Anglo-American Hospital is a private hospital and a very excellent research laboratory is being maintained there. Dr. George Graham, the foremost specialist on nutritional problems in Peru, worked there from 1960-1965 with NIH grants. The collaborators in his research grants were Dr. Antonio Bacigalupo (Ph.D. in nutrition from Michigan State University) and Dr. Juan C. Baertl (postgraduate training at Mt. Auburn, Cambridge, Massachusetts, and at Cleveland Metropolitan Hospital).

Dr. Graham's group had excellent facilities for pediatric research, including metabolic studies, very well-equipped biochemical laboratories specializing in nutritional research, and during the years acquired an unusual knowledge of the nutritional situation in several areas of Peru where experimental stations were maintained.[7]

Federación Médica Peruana
(Peruvian Medical Federation)
Apartado 4136, Lima

Founded: 1942
President: Dr. Vincente Ubillús
Secretary: Dr. Luis G. Castillo
1,230 members

Fondo Nacional de Salud y Bienestar Social
(National Health and Welfare Fund)

Under the Ministry of Public Health and Welfare

This organization was used as a biomedical research granting agency under the military junta which ruled before President Belaúnde was elected. The present Minister of Health, Dr. Javier Arias Stella, intends for the Fund to be used for projects of public health and social welfare. [7]

Hospital Materno-Infantil San Bartolomé
(Maternal and Children's Hospital San Bartolome)

The hospital is an extremely well-equipped, modern hospital which works in collaboration with the Departments of Obstetrics and Pediatrics of the medical school "Cayetano Heredia." Dr. Meilach Burstein is doing clinical studies in this hospital on icterus of newborns correlated to maternal malnutrition, a serious problem in Peru. He is doing needle biopsies and liver tests and correlates his findings with the results of autopsies (50 percent of the patients die). [7]

Instituto de Bioquímica y Nutrición
(Biochemistry and Nutrition Institute)
755 Grau, Lima

Under the School of Medicine of San Marcos University

Director: Alberto Guzman Barrón

Description: Publications indicate that studies of levels and qualities of diets of some elements of the population have been made. In comparison to similar work done in other countries, this Institute seems to have been more concerned with learning more about phosphorus, calcium, amino acids, iron and anemias. [5] There are 18 on the staff.

Instituto de Nutrición
(Institute of Nutrition)
S/N Salaverry, Piso 5°, Lima

Under the Ministry of Public Health and Welfare
Founded: 1944
Budget: $37,313 (1960)

Instituto de Nutrición (continued)

Director: Dr. Carlos Collazos Chiriboga

Description: This Institute designs and administers programs for the improvement of Peruvian human nutrition.

Instituto Nacional de Cardiologia
(National Institute of Cardiology)

Founded: 1964

This institute was founded to advance research and epidemiology of cardiovascular disease in Peru. Mostly under the prodding of Dr. Farael M. Alzamora Freundt, Professor of Medicine in San Marcos University, the Institute will be organized by a committee which will consist of one delegate from the Ministry of Public Health, three delegates from the Peruvian Society of Cardiology, one delegate from the National Health and Welfare Fund, one delegate from each of the four medical schools, and a juridical advisor from the Ministry of Public Health and Welfare. This Institute is mentioned because it seems probable that a great deal of emphasis will be given to infarcts and other cardiac diseases from the public health point of view.[7]

Instituto Nacional de Enfermedades Neoplásticas
(National Cancer Institute)
Avenida Alfonso Ugarte 825, Lima

Under the Minstry of Public Health and Welfare
Founded: 1939
Budget: $405,675 (1960)

Director: Dr. Eduardo Cáceres Graziani

Description: Dedicated to epidemiological work on cancer, cancer survey programs and cancer treatment.[14]

Institutos Nacionales de Salud Pública
(National Institutes of Public Health)

Director: Dr. Oscar Miró Quesada
Budget: Around $2,000,000 annually.

There are rather ambitious plans to increase the activities of these Institutes, particularly in the direction of basic research, but for the time being relatively little research is going on in their moderately well-equipped labs. This is due mostly to a lack of funds but also for a lack of cooperation on the part of the universities.

Institutos Nacionales de Salud Pública (continued)

One research project on "Epidemiological Studies of Arthropodborne Viruses in Peru" would be undertaken by José Madalengoitia. Another investigation in the Institutes is concerned with parasitic diseases, particularly Chagas Disease, and is being conducted by Dr. Aristides Herrer.[7]

Sociedad Peruana de Cancerología
(Peruvian Cancerology Society)
Avenida Alfonso Ugarte 825, Lima

Private institution
Founded: 1958

President: Dr. Jorge Campos R. de C.

Description: The Society groups together the medical doctors of the country dedicated to research, diagnosis, treatment and education in cancer.[14]

## ASTRONOMY

Asociación Peruana de Astronomía
(Peruvian Association of Astronomy)
Enrique Palacios 359, Chorrillos, Lima

Private institution
Founded: 1946, officially recognized 1948.

Director: Ing. Víctor Estremadoyro

Description: Scientific divulgation. The Association has a planetarium and carries on methodical observation in collaboration with national and foreign institutions.[14]

## CHEMISTRY

Asociación de Químicos de la Universidad Nacional Mayor de San Marcos
(Association of Chemists of the University of San Marcos)
' Paseo Colón 323, Lima

Private organization, officially recognized by San Marcos University and the Ministry of Education.
Founded: 1942
Budget: $2,690

Description: The Association represents, gathers and coordinates scientific, technical and professional activities of the chemists graduated from San Marcos. It promotes chemical and industrial activities in the country.[14]

Sociedad Química del Perú
(Chemical Society of Peru)
Apartado 891, Lima

Officially recognized scientific institution
Founded: 1933

President: Ing. Alejandro Freyre
Vice President: Gastón Pons Muzzo
Secretary-General: Dr. Juan de Díos Guevara

Description: The objectives of the Society are to promote research and spread knowledge in the different branches of chemistry and related sciences.[14]

## ENGINEERING

Although research in the physical sciences is not strong, Peru has many capable engineers, especially in the electrical field. In Peru all types of engineering are well organized and each type of engineer, whether petroleum, chemical, mechanical, electrical, or civil, has a strong belief in the future of Peru. This attitude, which is reflected in greater relative output, is based on their economic, social and technological development during the past few years as well as on their future capabilities.

The number of engineering graduates is roughly 500 per year, but the number of physical scientists is less than 100, the majority of whom are chemists.[6]

Asociación de Ingenieros Civiles del Perú
(Peruvian Association of Civil Engineers)
Nicolás de Piérola 788, 4° piso, Lima

Private institution
Founded: 1955

Asociación Electrotécnica Peruana
(Peruvian Electrotechnical Association)
Avenida República de Chile 284, Oficina 201, Lima

Private organization with official character
Founded: 1943

President: Ing. Juan Orellana Zúñiga
Chief: Ing. Manuel Alberto Villarán C.

Description: Besides defending its professional interests, the Association a) foments the advance and the dissemination of information on the theory and applications of electricity, especially with relation to engineering; b) contributes to the improvement of teaching of courses related to electricity; c) collaborates with politicians, universities and public and private entities related to electricity for its better utilization and for the technical-economic development of the country; d) assists and organizes conventions and congresses; and e) foments intimate collaboration among similar institutions of the continent.[14]

The Association's bimonthly journal Electrotécnia is extremely well done.

Asociación Peruana de Ingeniería Sanitaria
(Peruvian Association of Sanitary Engineering)
Colmena 788, 4° piso, Lima

Private institution, forming part of the Sociedad de Ingenieros del Peru, officially recognized by the Government.
Founded: 1948
Budget: Administrative expenses of about $5,000 (1962)

President of the Directorate: Ing. Juan Alfaro Somontes.

Instituto de Ingenieros de Petroleo del Perú
(Peruvian Institute of Petroleum Engineers)
Apartado 94, Talara, Piura

Private institution
Founded: 1953, officialized by the Government of Peru in 1962.
Budget: Around $1,500 (1960)

President: Ing. Nicanor Arteaga L.
Secretary: Ing. Hernán Coloma
Committee of Economics: Ing. Rodolfo Stumpfle
Technical Committee: Ing. Alberto Pascó-Font
Ethical and D. P. Committee: Ing. Carlos Oré
Culture Committee: Ing. Víctor M. Cabrejo
Membership Committee: Ing. Eduardo Ríos

Description: The objectives of the Institute are to diffuse knowledge on petroleum science and technology, promote and propitiate pertinent study and research. It acts as an orienting entity to the petroleum industry and, when invited, advises the Government on technical, economic and legal aspects of the petroleum industry.[14]

Instituto Peruano de Ingenieros Mecánicos
(Peruvian Institute of Mechanical Engineers)
Avenida República de Chile 284, Oficina 201, Lima

Private organization
Founded: 1959
Budget: $750 (1960)

President: Azi Wolfenson
Vice President: Jirosi Shoji
Secretary: Carlos Navarro
Pro Secretary: Oscar Huapaya
Treasurer: Roberto Molina
Pro-Treasurer: Jorge Vigil

Description: The objectives of the Institute are: a) promote the advance of mechanical engineering theory and practice and sciences and activities related, as well as spreading information; b) work toward formulation of codes and standards, as well as laws, regulations and plans of development related to the application of mechanical engineering in the country; c) work toward the improvement of technical and scientific education in mechanical engineering at all levels and promote research in this field; d) represent officially the mechanical engineers; e) to collaborate with Government,

Instituto Peruano de Ingenieros Mecánicos (continued)

private and public instititions and universities for the better application and knowledge of mechanical engineering and to foment economic and industrial development; f) to procure permanent recognition of the Institute as an official consultive center.[14]

Sociedad de Ingenieros del Perú
(Peruvian Society of Engineers)
Avenida Nicolás de Piérola 788, Lima

Autonomous organization
Founded: 1898

Secretary: Ing. Adolfo Bustamente T.

Activities: Promotion of professional interests, publications, public relations, legal activities.[14]

## GEOGRAPHY

Instituto Geográfico Militar
(Military Institute of Geography)
Apartado 2038, Lima

Director: Colonel Luis F. Montezuma Delfin

Description: The Institute publishes topographical, physical and political maps of Peru on various scales.[14]

Sociedad Geográfica de Lima
(Geographic Society of Lima)
Jirón Puno 456, Lima

Founded: 1888, reorganized by the Government in 1945.
Budget: Subsidies from the Peruvian Government, dues from members, private donations.

President: Dr. Emilio Romero

Description: The Society's objectives are the promotion of scientific investigation of Peruvian territory, maintenance of cultural relations with foreign societies.[14]

## GEOLOGY - MINING

Banco Minero
(Bank of Mining)

The Mining Bank is the Government agency charged with exploiting natural mineral resources. Its laboratories were equipped under Point IV.

Comite de la Carta Geológica Nacional
(Committee of the National Geologic Map)
Lima

Under the Ministry of Development, Office of Mining
Founded: 1959

Director: Julio Bellido

Description: The Committee has the principal duty of preparing geologic quadrangle maps of Peru. It also undertakes other kinds of geological investigations, such as studies of minerals and water.

Instituto Nacional de Investigación y Fomento Minero
(National Institute of Mining Research and Development)
Camilo Carrillo 300, Lima

Under the Ministry of Development, Office of Mining
Founded: 1902, under the name "Cuerpo de Ingenieros de Minas y Aguas." Restructured and renamed in 1956.
Budget: About $112,000 (1960)

Divisions: Mines and Metallurgy
Geology of Mining
Statistics and Economics of Mining
Surveying

Description: The Institute is charged with the study and resolution of all matters concerning the development of the mining industry in scientific and technological research, consultation and service. It has chemistry, microscopy and spectrography laboratories, and plants for the concentration and refining of minerals. Approximately 80 persons are employed, 8 or 10 of whom are engineers or geologists.[6,16]

Sociedad Geológica del Perú
(Geological Society of Peru)
Calle Camilo Carrillo 300, Lima

Private institution
Founded: 1924

President: Georg Petersen
Secretary: Alejander Chalco

Description: The Society is dedicated to geological research and its application, extension of geological knowledge and strengthening the bonds between its members and those of other similar organizations.[14]

## GEOPHYSICS

Instituto Geofísico del Perú*
(Geophysical Institute of Perú)
Avenida Arequipa 701, Lima

Under the Ministry of Development and Public Works
Founded: 1919 by the Carnegie Institution under the name Huancayo Magnetic Observatory and operated under its guidance until 1947 when it was transferred to the Government of Peru and expanded to become the Huancayo Geophysical Institute. Its present name dates from 1961.
Budget: $50,000 from the GOP and $675,000 from cooperative projects. (1966)

Directive Committee: President: Dr. Jorge A. Broggi, Members: Dr. Carlos Monge M., Ing. Ricardo Valencia, Dr. Enrique Silgado and three representatives of the Carnegie Institution of Washington.
Executive Director: Dr. Alberto A. Giesecke Matto

Departments:

| | |
|---|---|
| Meteorology | Ionospheric Physics |
| Solar Activity | Seismology and Gravimetry |
| Geomagnetism | Satellite Tracking |
| Infrasonics | Ionosphere and Exosphere |

Description: The Institute has observatories in Huancayo, Talara, Naña and Cuzco. The Observatories at Ancon and Jicamarca operate under a cooperative agreement with NASA and the National Bureau of Standards. Cooperation also exists with the Arequipa observatory of the Smithsonian Institution of Washington. The Geophysical Institute of the Universidad Nacional de San Agustín is a cooperating agency.

* Revised in Peru, April 1966.

Instituto Geofísico del Perú (continued)

Work done at Huancayo during the past 40 years includes observations of geomagnetic ionospheric physics, meteorology, solar activity, cosmic radiation, seismology, gravimetry, nuclear radiations, airglow, atmospheric electricity, and earth currents; recently optical tracking of artificial earth satellites has been added. In response to the program of the International Geophysical Year, the work at the Institute was increased considerably and numerous additional observatories and observing posts were established elsewhere in Peru.

## METEOROLOGY

Dirección General de Meteorología
(National Meteorological Service)
Avenida Arequipa 5200, Miraflores, Lima

Founded: 1928

Director-General: Major-General FAP* Hernán Salazar L.
National Coordinator: Major-General FAP Jacob del Mar Correa
Head of Forecasting: Major FAP Oscar Alvarez Carrillo
Head of Operations: Captain FAP Hugo González
Head of Climatology: Captain FAP Francisco Castilla Z.

Description: The National Meteorological Service has 120 primary stations. The meteorological station in Huancayo is one of the best in the country. The Service's activities include: a) measurement of air for radioactive particle content; b) daily launching of pilot globes to measure winds; c) atmospheric polution studies in Lima and surrounding area; d) collaboration in higher education through seminars on theoretic microclimatology and basic and applied meteorology.

*Peruvian Armed Forces

## NUCLEAR PHYSICS

Junta de Control de Energía Atómica
(Atomic Energy Control Commission)
Avenida Nicolás de Piérola 611, Lima

Under the Ministry of Development and Public Works
Founded: 1954
Budget: $144,200 (1960)

Director: Dr. Enrique Monge
Institute Director: Coronel Ing. Marco Fernández Baca

Departments: Department of Radioactive Substances Control
Department of Reactors
Higher Institute of Nuclear Energy
Laboratory of Radioisotopes
Laboratory of Chemistry
Electronics Laboratory

Description: The objectives of the Junta are: a) search for uranium and thorium in Peru; b) nuclear education; c) peaceful uses and applications of atomic energy.

The Instituto Superior de Energía Nuclear was founded in 1955 to contribute to the better education in the pacific uses of nuclear energy at a post-graduate level so that this knowledge can be applied in various professional fields: medicine, engineering, industry, agricultural engineering, biology, etc., and to prepare specialized personnel for the Junta and other Government agencies. Academic activities began in 1957 and courses have been developed in advanced mathematics, modern physics, atomic and nuclear physics, engineering of reactors, applications of the radioisotopes to medicine, agriculture, industry and geology.

Studies have been made on: a) possibilities of installing a reactor for education, preparation of technicians, production of radioisotopes and utilization in medicine, agriculture and industry; b) utilization of the waters of Lake Titicaca for hydroelectric power and for the irrigation of 50 to 100 thousand hectars; c) utilization of the waters of Laguna Lagunillas and draining of 10 cubic meters into the Chili River; d) utilization of atomic explosives in mining and the petroleum industry; e) utilization of atomic energy for the distillation of sea water; and f) study of radioactive rain.

## INDUSTRY, PLANNING AND ECONOMICS

Banco Industrial del Perú
(Industrial Bank of Peru)

Government agency
Founded: 1936
Authorized capital of the bank: $18,700,000 (1960)

Description: The Bank is charged with developing policy to assist the manufacturing industry of the country. It acquired more importance with the passing of the Industrial Development Law in 1959. The Governing Board consists of 10 members: 4 appointed by the Executive Branch, 2 by the Sociedad Nacional de Industrias and 3 by stockholders.

Centro Nacional de Acción para el Incremento de la Productividad (CENIP)
(National Center for the Increase of Productivity)

Began activities in 1960.

Patrons: Faculty of Economics and Commerce, San Marcos University
Faculty of Industrial Engineering, National Engineering University
Faculty of Economics and Commerce, Catholic University
National Industrial Society
Corporation of Merchants of Peru
Confederation of Workers of Peru

Description: The Center is directed and administered by a National Committee composed of representatives of patron organizations. The president is elected by the members. The president and the delegates of the patron organizations compose the Directive Council. Funds will come from the patrons and firms and institutions to which it lends its services.

The objective of the Center is to help industrial, commercial, agricultural, mining, banking, etc. organizations to take best advantage of the resources at their disposal.

Activities include: promotion and spreading of principles and techniques of production; training through courses, seminars, and round tables; advising firms; coordination and collaboration with national, international and foreign organizations interested in programs of production.

Instituto de Estudios Económicos
(Institute of Economic Studies)
Lima

Autonomous institution sponsored by the Society of Engineers.
Founded: 1957

Departments: Conferences and Seminars
Research and Statistics
National Economy
Industrial Economy
Publications and Distribution
Library and Archives

Description: The Institute is administered by a board of 17 members, 12 of whom are elected and five appointed. It obtains funds from donations, fees, publication sales. Otherwise, the studies it conducts are remunerated by the contractors.

The Institute has conducted a series of investigations closely related to the study on Peru carried out by the Economic Commission for Latin America. It is carrying out a five-year program, initiated in 1960, for studies on the following areas: curriculum studies; academic studies (on seminars, forums, conferences, etc.); research on family life and public works; and studies on dissemination of information or mass media.[6]

Instituto de Relaciones Humanas y de Productividad
(Institute of Human Relations and Productivity)
Lima

At the University of San Marcos
Founded: 1956
Budget: $39,000 (1960)

Departments: Basic Studies
Investigation
Management, Industrial Engineering and Training
Work and Peroonnel Relations

Description: The Institute is administered by a Director and a Directive Council composed of deans of the faculties of San Marcos University and the Rector.

It offers four-year postgraduate courses to students from San Marcos University, the National Engineering University and personnel of the Armed Forces; and

Instituto de Relaciones Humanas y de Productividad (continued)

extension courses in theory, practice and techniques of human relations for personnel from industry, business, banking, and educational and administrative centers of the Government. The Institute had an initial enrollment of 400 graduate students, and an additional 200 employees from industry and 100 teachers. It has been able to grant fellowships for study, and has brought U.S. experts to Peru for lectures and teaching. Centers are being formed in the University of Trujillo, in Arequipa, Nazca and other interior cities.[6]

Instituto Nacional de Planificación (INP)
(National Planning Institute)
Avenida Uruguay, 163, Lima

Government institution, under the President of the Nation
Founded: 1962

Director: Carlos Pectaña

Divisions: Macro-Economy (Armando Dam, Head)
Sectoral Planning
Office of Education Programming and Human Resources
Regional Planning
Public Sector
Projects

Description: The INP is the central technical organism of the National Planning System created in 1962. The highest organism of the System is the National Council of Economic and Social Development. The private sector participates in the system at the national level through the Consultive Council of Planning, composed of 20 members, presided over by the Head of the INP.

The Technical Office is charged with formulating projects and policies of development, of advising on the preparation of means of implementation, and of evaluating the results of application of the plans and programs of social and economic development. The five offices listed above assist in carrying out these responsibilities.

In collaboration with an OAS-IDB-ECLA technical assistance mission, the INP prepared a diagnosis of the economy which was published in 1963. This was followed by a program of public investments for 1964 and 1965. Other investment programs for 1966-68 and 1968-72 are now in preparation.

Instituto Nacional de Promoción Industrial
(National Institute for Industrial Development)

Under the Ministry of Development, Office of Industry and Electricity, enjoying technical and administrative autonomy.
Founded: 1960

Divisions: Council of Industrial Development
Technical Office of Industrial Development

Instituto Nacional de Promoción Industrial (continued)

Description: The Council is composed of the President and Chief of the Industrial Bank and the presidents of the National Industrial Society, the National Agrarian Society, the National Society of Mining and Petroleum and the Peruvian Society of Engineers, and the Director of the Military Center for Higher Studies. Besides these ex-officio members, there will be representatives elected by the President of Peru, the commercial banks, the Director of the Technical Office of Industrial Development, and three experts designated by the Industrial Society. The Technical Office of Industrial Development will be headed by a Director and its personnel will be named by the Ministry of Development.

The Institute was created by the Law of Industrial Development to prepare, in collaboration with other organizations, the "Inventory of Natural Resources of the Nation," to analyze industrial statistics, publish comments, studies, conclusions on the same, to carry out studies of the industrial possibilities of Peru, to orient and stimulate private activity in industrial projects, etc..[6]

Instituto Textil
(Textile Institute)
Casilla 1301, Lima

At the National Engineering University
Founded: 1955
Budget: $27,000 (1962): 79% for research, 21% for teaching.

Director: Ing. Ivan García Cabrejos

Departments: Textile Chemistry
Weaving
Textile Testing

Description: The Institute was created as a result of an agreement signed in 1955, between the Textile School of the University of North Carolina and the National Engineering University, with economic assistance from ICA. Its objectives are to assist the textile industry of Peru in the education and training of textile technologists, and to serve groups associated with the growth and improvement of cotton, the woolen and synthetic fiber industries, and other Peruvian textile interests.[5]

Instituto Textil (continued)

The Institute is well equipped to do research in processing, physical testing and chemical testing of fibers and textiles.[5] The principal laboratories are cotton spinning, combed wool spinning, weaving, instrumentation, textile testing, microscopes, textile chemistry, and teaching equipment.[6]

Initially it had ten U. S. textile experts and provided scholarships for Peruvian graduates of the Engineering University for study in the U. S. The North Carolina University maintains one person in residence in Lima, who teaches advanced courses and evaluates the Institute's programs. In addition to textile engineering, the Institute is now offering a service to industry for consultation and research.[6]

Textiles are very important to Peru for there are over 350 textile factories giving employment to some 33,000 people. According to the Institute's past director, George Schofield, the Institute is the best of its kind in Latin America.[8]

Oficina Nacional de Evaluación de Recursos Naturales (ONERN)
(National Office of Evaluation of Natural Resources)
Lima

Under the Ministry of Development
Founded: 1962

Director: Ing. José Lizárraga Reyes

Departments: Soils
Hydrometeorology
Geology
Socioeconomy
Cartography
Photo Interpretation

Description: The National Office of Evaluation of Natural Resources depends technically on the National Planning Institute, retaining, however, its administrative autonomy. Its functions are to produce, elaborate and analyze basic information and documents for the Economic and Social Development Plan on the utilization of natural resources, and to carry out specific studies on natural resources with which it is charged.[12]

Sociedad Nacional de Industrias
(National Industrial Society)
Lima

Founded: 1896

Description: The National Industrial Society is the organization that joins the industrialists of Peru. Members are divided into five active and one adhering categories. The Society is primarily a guild of approximately 32 committees and commissions which designate representatives to the Directorate of the institution, from which is selected the Executive Board.

It maintains permanent delegations in the principal banks and business concerns of Peru, such as the Central Reserve Bank, the Industrial Bank of Peru, and the Chief Council of Industries.

Besides defending the interests of the industrial community, it carries out activities of general economic character related to the development of industry.[6]

## EDUCATION

Instituto Peruano de Fomento Educativo (IPFE)
(Peruvian Institute of Educational Development)

Private institution
Founded: 1962
Budget: $246,800 (1962/63)

President: Guillermo Garrido Lecca
Director: Dr. Leopoldo Chiappo

Description: The Institute was constituted as a result of a study by the Marcona Mining Company to determine the best way to help Peru in its educational efforts. It is privately financed. The members of the Institute were selected from among prominent Peruvian representatives of industry, commerce, mining and agriculture, and capable personnel specialized in education were selected to work under Dr. Leopoldo Chiappo, a well-known university advisor specialized in the selection of students an scholarships. The primary purpose of IPFE is to grant scholarships.

Instituto Peruano de Fomento Educativo (continued)

Programs:

1. Scholarships for postgraduate, university and secondary school students. AID has contributed $159,000.
2. Improvement in the teaching of biological sciences. The total cost of the program ($8,393) to be paid by the Ford Foundation.
3. Installation of university students libraries to foster free discussion of ideas in such places, which at present are under the influence of extremist political parties.
4. Pan American Exchange Training Program in Psychiatry.
5. Andean Seminar for 100 Peruvian university students.
6. Procedures of selection of candidates to enter universities. The National Health and Welfare Fund has contributed $2,000 to give the program a start.
7. Program for modernizing the teaching of law (for San Marcos University professors)
8. Eleven deans, professors and heads of departments of Peruvian universities were sent to the U.S. on full scholarships for intensive training in the adequate organization and administration of faculties and departments in 1962 and 1963.

## SOCIOLOGY

Centro de Estudios sobre Población y Desarrollo*
(Center of Studies on Population and Development)
Lima

The Government officials in Peru, university scholars, and other concerned with the Center have agreed that it will concern itself with these activities: organize conferences and technical seminars on population problems; inventory existing studies and sources of information; publish reports and analyses of population problems in forms meaningful to policy-makers, practitioners, and the general public; identify research priorities and stimulate and facilitate needed research; facilitate communication among Government agencies, business and professional organizations, and university and other groups concerned with study of population and development; provide fellowships for training in the field of population;

*May not be correct title.

SOCIOLOGY

Centro de Estudios sobre Población y Desarrollo (continued)

develop and maintain contacts with other countries and international organizations on population matters; and raise funds, both within and outside Peru, for expansion of the Center's program and related activities. The Ford Foundation contributes to the Center in the form of salaries, research activities, fellowships for study abroad and technical advisory services. (From letter from James Trowbridge, Ford Foundation, January 21, 1966.)

Instituto de Relaciones Humanas y de Productividad (see page 45 ).

SUPPLEMENTARY LISTING OF PERUVIAN ORGANIZATIONS*

Asociación Cultural Peruano-Británica, Camaná 787 79380
(Peruvian-British Cultural Association)

Asociación CAJP (Clubes Agrícolas Juveniles del Perú) 43240
(CAJP Association - Peruvian Agricultural Youth Clubs)

Asociación Nacional de Geógrafos Peruanos, Carabaya 719 70661
(National Association of Peruvian Geographers)

Asociación Nacional de Médicos del Seguro Obrero, Avenida Grau 700 43473
(National Association of Doctors for Worker's Security)

Asociación Nacional de Profesores de Educación Secudaria, Lampa 1043 80762
(National Association of Secondary Education Teachers)

Asociación Peruana de Autores y Compositores - APDAYC, Av. Uruguay 390 30954
(Peruvian Association of Authors and Composers)

Asociación Peruana de Caminos, Avenida Corpac 190 28204
(Peruvian Association of Roads)

Asociación Técnicos del Perú, Washington 1308 47905
(Peruvian Association of Technicians)

Comite Peruano Colaboración con las Naciones Unidas - COPENU, Tacna 543 8018
(Peruvian Committee for Collaboration with the United Nations)

Consejo Peruano de Seguridad, Camaná 565 77248
(Peruvian Security Council)

Federación Nacional de Farmacéuticos, José Díaz 382 44720
(National Federation of Pharmacists)

Instituto Interamericano de Ciencias Agrícolas de la O.E.A.,
La Molina, Km. 7 Carretera Central 46490
(Inter-American Institute of Agricultural Sciences of the O.A.S.)

Instituto Para la Promoción de la Enseñanza de las Matemáticas - IPEM,
Universidad Nacional de Ingeniería
(Institute for the Promotion of Mathematical Education, National Engineering
University)

*Added in Peru, April 1966

## Alphabetical Index of Scientific Organizations and Societies

# FOREIGN AID AND LOANS TO PERU
1960-1965

## Introduction

This section contains a compilation of projects having components of science, technology, economic planning and/or education supported by U.S. (private and governmental) and international organizations from 1960 to 1965 in Peru. (Only projects of the three major private foundations, Ford, Kellogg, and Rockefeller, are included.)

The projects are listed under the following headings: Agricultural and Plant Sciences; Marine Resources; Medical and Biological Sciences; Dentistry; Mathematics; Chemistry; Engineering; Physics; Meteorology; Geophysics; Natural Resources (Geology, Hydrology, Soils, etc.); Industry and Business Administration; Public Administration; Economics and Planning; Transportation and Communication; Sociology; and Education.

It was not always possible to determine the exact amounts of money spend during this period on the projects. In some cases, the amount indicated includes years previous to 1960; in others, the funding extends several years into the future. However, since this situation was encountered in most of the fields, the resulting figures indicate fairly accurately where the emphasis in foreign aid lies. Not included in the following tables and program descriptions is $280,000 spent by the OAS on fellowships for Peruvians.

The tables on the following pages show distribution of funds by agency and field.

# ABBREVIATIONS USED IN TABLES

## Granting and Lending Organizations

| | |
|---|---|
| AEC | Atomic Energy Commission |
| AID | Agency for International Development |
| EX-IM | Export-Import Bank |
| FORD | Ford Foundation |
| IDB | Inter-American Development Bank |
| KEL | Kellogg Foundation |
| MIL | Army, Air Force |
| NBS | National Bureau of Standards, Department of Commerce |
| NIH | National Institutes of Health |
| NSF | National Science Foundation |
| OAS | Organization of American States |
| ROCK | Rockefeller Foundation |
| UN | Agencies of the United Nations |
| USDA | U.S. Department of Agriculture |
| WB | World Bank |

## Fields

| | |
|---|---|
| AGR | Agricultural and Plant Sciences |
| MR | Marine Resources |
| MED | Medical and Biological Sciences |
| DENT | Dental Sciences |
| MATH | Mathematics |
| ENG | Engineering |
| PHYS | Physics |
| METO | Meteorology |
| GEOP | Geophysics |
| NR | Natural Resources (Geology, Hydrology, Soils, etc.) |
| I&BA | Industry and Business Administration |
| PA | Public Administration |
| ECON | Economics and Planning |
| T&C | Transportation and Communication |
| SOC | Sociology |
| EDUC | Education and General Science Development |

During the Approximate Period 1960-1965*
(in thousands of U.S. dollars)**

| | EX-IM | WB | IDB | OAS | UN | AID | AEC | NBS | MIL | NIH | NSF | USDA | FORD | KEL | ROCK | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGR | 1,278 | 26,000 | 12,110 | 13 | 8,963 | 19,913 | | | | 221 | 194 | 258 | 300 | | 1,185 | | 70,434 |
| MR | | | | | 1,768 | | | | | | | | | | | | 1,768 |
| MED | | | | | 883 | 143 | 29 | | 66 | 1,545 | 8 | | 13 | 253 | 296 | | 3,235 |
| DENT | | | | | | | | | | | | | | 56 | | | 56 |
| MATH | | | | | | | | | | | 74 | | | | | | 74 |
| ENG | | | 2,500 | | 2,470 | | | | | | | | 570 | | | | 5,540 |
| PHYS | | | | | | | | | | | 12 | | | | 4 | | 16 |
| METO | | | | 9 | 2,685 | | | 3,668 | 102 | | | | | | | | 6,463 |
| GEOP | | | | | | | | | 6 | | 324 | | | | | | 330 |
| NR | | | | | 1,743 | | | | | | 18 | | | | | | 1,762 |
| I&BA | | | 8,250 | 8 | 256 | 968 | | | | | | | | | | | 9,481 |
| PA | | | | | 53 | 714 | | | | | | | | | | | 767 |
| ECON | | | 43 | 300 | 3,597 | 3,548 | | | | | | | | | 17 | | 7,504 |
| T&C | | 10,000 | 475 | | 299 | 414 | | | | | | | | | | | 11,188 |
| SOC | | | | 6 | 52 | | | | | | 88 | | 532 | | 155 | 282 | 1,115 |
| EDUC | | | 1,517 | | 974 | 807 | | | | | | | 2,284 | | | | 5,582 |
| TOTAL | 1,278 | 36,000 | 24,894 | 336 | 23,743 | 26,507 | 29 | 3,668 | 174 | 1,766 | 718 | 258 | 3,699 | 309 | 1,657 | 282 | 125,315 |

*See Introduction, p. 54, paragraph 3.

**Due to rounding, the rows and columns may not equal total.

DISTRIBUTION OF FUNDS BY ORGANIZATION AND FIELD
Loans and Grants Included
Thousands of U.S. Dollars

AGRICULTURAL AND PLANT SCIENCES

| | EX-IM | WB | IDB | OAS | UN | AID | NIH | NSF | USDA | FORD | ROCK | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surveys, Irrigation, Land Reclamation Colonization | | 26,000 | 10,110 | 13 | 4,132 | 362 | | | | | | 40,617 |
| Development Programs, Productivity | | | | | 10 | 16,600 | | | | | | 16,610 |
| Agricultural Planning | | | | | 56 | | | | | | | 56 |
| Education, Institut'l Development | | | 2,000 | | 4,747 | 2,952 | | | | | 69 | 9,767 |
| Research | | | | | 17 | | 221 | 194 | 258 | 300 | 1,116 | 2,106 |
| Unspecified | 1,278 | | | | | | | | | | | 1,278 |
| TOTAL | 1,278 | 26,000 | 12,110 | 13 | 8,963 | 19,913 | 221 | 194 | 258 | 300 | 1,185 | 70,325 |

See pages 65 through 75 for programs.

## MARINE RESOURCES

| | UN | TOTAL |
|---|---|---|
| Institutional Development | 1,768 | 1,768 |
| TOTAL | 1,768 | 1,768 |

See page 76.

## MEDICAL AND BIOLOGICAL SCIENCES

| | UN | AID | NIH | NSF | FORD | AEC | MIL | KEL | ROCK | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| Institutional Development | | | | | | | | 4 | 213 | 217 |
| Public Health Services | 439 | 143 | | | | | | | | 582 |
| Education: Symposia, Teacher Preparation | 127 | | | 8 | 13 | | | 241 | | 388 |
| Books and Equipment for Teaching | | | | | | | | 9 | 77 | 86 |
| Research | 317 | | 1,545 | | | 29 | 66 | | 6 | 1,962 |
| TOTAL | 883 | 143 | 1,545 | 8 | 13 | 29 | 66 | 253 | 296 | 3,234 |

See pages 77 through 84.

DENTISTRY

| | KEL | TOTAL |
|---|---|---|
| Institutional Development | 16 | 16 |
| Equipment | 40 | 40 |
| TOTAL | 56 | 56 |

See page 85.

MATHEMATICS

| | NSF | TOTAL |
|---|---|---|
| Summer Courses | 74 | 74 |
| TOTAL | 74 | 74 |

See page 86.

ENGINEERING

| | IDB | UN | FORD | TOTAL |
|---|---|---|---|---|
| Institutional Development | 2,500 | 2,470 | 570 | 5,540 |
| TOTAL | 2,500 | 2,470 | 570 | 5,540 |

See pages 88, 89.

PHYSICS

| | NSF | ROCK | TOTAL |
|---|---|---|---|
| Summer Course, Conference | 12 | 4 | 16 |
| TOTAL | 12 | 4 | 16 |

See page 90.

METEOROLOGY

| | OAS | UN | MIL | NBS | TOTAL |
|---|---|---|---|---|---|
| Institutional Development | | 2,625 | | | 2,625 |
| Training | 9 | 60 | | | 69 |
| Research | | | 102 | 3,668 | 3,769 |
| TOTAL | 9 | 2,685 | 102 | 3,668 | 6,463 |

See pages 91, 92.

GEOPHYSICS

| | NSF | MIL | TOTAL |
|---|---|---|---|
| Research | 324 | 6 | 330 |
| TOTAL | 324 | 6 | 330 |

See page 93.

NATURAL RESOURCES

| | UN | NSF | TOTAL |
|---|---|---|---|
| Surveys | 1,743 | | 1,743 |
| Research | | 18 | 18 |
| TOTAL | 1,743 | 18 | 1,762 |

See page 94.

INDUSTRY AND BUSINESS ADMINISTRATION

| | IDB | OAS | UN | AID | TOTAL |
|---|---|---|---|---|---|
| Industrialization Projects | 8,250 | | | | 8,250 |
| Industrial Development Studies | | | 197 | | 197 |
| Productivity and Manpower | | | 159 | | 159 |
| Administration | | 8 | | | 8 |
| TOTAL | 8,250 | 8 | 256 | 968 | 9,481 |

See pages 95, 96.

PUBLIC ADMINISTRATION

| | AID | UN | TOTAL |
|---|---|---|---|
| Institutional Development | 714 | | 714 |
| Unspecified | | 53 | 53 |
| TOTAL | 714 | 53 | 767 |

See page 97.

ECONOMICS AND PLANNING

| | IDB | OAS | UN | AID | ROCK | TOTAL |
|---|---|---|---|---|---|---|
| Institutional Development | 43 | 300 | 261 | | 7 | 611 |
| Development Planning and Surveys | | | 3,336 | 3,548 | | 6,884 |
| Research | | | | | 10 | 10 |
| TOTAL | 43 | 300 | 3,597 | 3,548 | 17 | 7,504 |

See pages 98 through 101.

TRANSPORTATION AND COMMUNICATION

| | WB | IDB | UN | AID | TOTAL |
|---|---|---|---|---|---|
| Highway Feasibility Studies | 10,000 | 475 | | 414 | 10,475 |
| | | | | | 414 |
| Aviation School | | | 240 | | 240 |
| Telecommunications | | | 42 | | 42 |
| Transportation and Communication | | | 18 | | 18 |
| TOTAL | 10,000 | 475 | 299 | 414 | 11,188 |

See pages 102, 103.

SOCIOLOGY

| | OAS | UN | FORD | ROCK | NSF | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|
| Demography | 6 | 13 | | | | | 19 |
| Education and Institutional Development | | 39 | 282 | | | | 321 |
| Research | | | 250 | 155 | 88 | 282 | 775 |
| TOTAL | 6 | 52 | 532 | 155 | 88 | 282 | 1,115 |

See pages 104, 105.

EDUCATION AND GENERAL SCIENCE DEVELOPMENT

| | IDB | UN | AID | FORD | TOTAL |
|---|---|---|---|---|---|
| Development of Science and Advanced Teaching Facilities | 1,509 | 46 | 31 | 1,468 | 3,053 |
| Primary, Secondary and Technical Education | | 874 | 776 | | 1,650 |
| Education Planning | | 54 | | | 54 |
| Administration | 8 | | | 811 | 819 |
| Other | | | | 5 | 5 |
| TOTAL | 1,517 | 974 | 807 | 2,284 | 5,581 |

See pages 106 through 108.

## AGRICULTURAL AND PLANT SCIENCES

Export-Import Bank

Republic of Peru (1964) — $1,278,055
Livestock, etc. Agricultural program.

World Bank

San Lorenzo Project (1965) — $11,000,000
The loan will benefit the San Lorenzo project for the irrigation and settlement of once arid land on the coast of northern Peru -- an area which may eventually involve about 125,000 acres. The project brings together irrigation, farm credit, and a wide range of technical services for the purpose of increasing the output of food and cash crops, both for domestic consumption and export. The project is serving as a model for the development of irrigation, land settlement, agricultural education and social services in other parts of Peru.

Banco de Fomento Agropecuario del Peru (1965) — $15,000,000
The Bank will provide supervised credit to farmers for irrigation facilities, improved soil preparation and water management, mechanization, increased use of fertilizers and pesticides, and the introduction and multiplication of improved plant and animal breeding stock. In the course of its operations, it also provides comprehensive technical services. (A loan of $5,000,000 was made to this project by the Bank in 1960.)

T O T A L - World Bank — $26,000,000

Inter-American Development Bank

Compañía Irrigador Pativilca, S.A. (1963) — $1,410,000
Project for the reclamation of approximately 16,000 acres of arid coastal land. To be devoted mostly to orchards, vegetables and cereals, and dairy and beef production.

Peruvian Government (1964) — $3,500,000
To help finance irrigation systems in the Sierra (42,000 acres). Expected that project will triple the region's agricultural production, which consists of such crops as corn, wheat, barley, potatoes, vegetables and fruits.

## AGRICULTURAL AND PLANT SCIENCES

### Inter-American Development Bank (continued)

**Agrarian University (1964)** — $2,000,000

**To help finance a program to improve and expand research and teaching facilities in the school. Calls for the construction of buildings and the provision of equipment for laboratories, the library, classrooms, offices, dormitories, workshops and other University facilities. Total cost of the program is $8.7 million which is being** jointly financed by the GOP, AID and the Bank. The Bank's loan will be used exclusively to cover costs of building laboratories and classrooms for the School of Agricultural Engineering and to provide equipment for the library. The plan is the culmination of a program begun in 1960, when the University embarked on reforms of its study plans and its administrative structure, with the help of AID, the U.N. Special Fund, Ford and Rockefeller and N. Carolina State College. The program is expected to permit an increase in student enrollment from 1,000 to 2,000.

Ministry of Agriculture (1964) — $3,500,000

For irrigation projects, penetration roads, farm credit, and technical assistance in the communities of Asillo, Taraco, Soras, Santiago de Chuco, Layo, Julcamarca, and Chuyas-Huaychao. (Social Progress Trust Fund)

Compañía Irrigadora Chimbote, S.A. (1964) — $1,700,000

Project for the reclamation of 66,000 acres of arid land. Nearly 55,000 acres will be subdivided by the company and sold to farmers on easy terms; the remaining 14,000 acres will be turned over to the Government for distribution. Irrigation systems will become Government property. Lands will be devoted primarily to citrus fruits, rice, beef cattle, cotton and dairy production. Some acreage will be set aside for complementary crops such as peanuts, peas, melons, tomatoes and alfalfa.

T O T A L - Inter-American Development Bank — $12,110,000

### Organization of American States

Consejo Superior del Fondo Nacional de Desarrollo Económico (60/61; 3 mos) — $12,808

Advise on flood and erosion control and exploitation of hydraulic resources. Two experts.

## AGRICULTURAL AND PLANT SCIENCES

### International Labour Organization (UN)

Andean Indian Mission (61-65) — $224,832
Improvement of agricultural techniques is of major concern: afforestation, anti-erosion and soil conservation, development of grassland. Educational, housing, health and sanitation measures have been instituted; rural welfare committees set up; vocational training centers have been built, equipped, staffed, and brought into operation; communal workshops are being set up.

### Food and Agriculture Organization (UN)

Rural Institutions and Services (61-65) — $59,284

Agricultural Planning (61, 62) — $39,652

Forestry Development (61-64) — $95,318
Cooperate with the implementation of the programs of the Colonization and Forest Division, Ministry of Agriculture and with SIPA and to follow up work carried out during the last biennium and give technical cooperation for the implementation of the plan prepared by the Forestry Institute of the Agrarian University.

Nutrition (61-65) — $63,078
Expert assistance to the GOP in tackling the problems of technological and sanitary control of processed foods, initiating technical research on new food processing methods not previously used; assisting the Agrarian University in the organization and functioning of a department of agricultural technology.

Animal Production and Health (64, 65) — $9,660

### International Atomic Energy Agency (UN)

SIPA - La Molina Experiment Station (62) — $3,750
Isotopes in agriculture.

Junta de Control de Energia Atómica (65)
Isotope application (agriculture). — $13,450

Fellowships
Application of radioisotopes in agriculture (12 mos) 1962
Plant protection and pest control (12 mos) 1965

## AGRICULTURAL AND PLANT SCIENCES

### U. N. Special Fund

Agrarian University
Faculty of Agricultural Engineering. FAO. (12/60; 5 yrs) $985,500
Forestry Research and Training Project. FAO (5/62; 5 yrs) $1,289,800
The Special Fund approved the establishment of a forestry faculty at the University and Ranger School and Forestry Research Institute at Iquitos. The Special Fund will contribute six experts in silviculture, inventory mensuration, sawmilling, seasoning, and preservation; a total of 19 man-years of experts' services, and equipment estimated to cost $229,000.

Pre-Land Settlement Survey of the Department of Puno. FAO. (12/59; 4 yrs) $426,700

Irrigation of the Pampas de Olmos. FAO. (1/62; 3 yrs) $1,752,700

Veterinary Institute for Tropical & High Altitude Research $2,247,900
The effect of animals of extreme altitudes or severe heat is being studies under a project aimed at determining the strains of cattle, sheep, goats or poultry which thrive best under such conditions. The research programs are mainly concerned with studying animal diseases, testing for genetic strains of cattle, sheep or poultry suited to local conditions and introducing improved animal husbandry and nutrition techniques. Small herds of Holstein and Swiss cattle have already been acquired for high altitude adaptation tests, and other animals have been imported from the U.S. and Denmark for experiments at sea levels. An important component of this project is the training of Peruvian veterinary assistants. FAO. (1/62; 3 yrs)

Land and Water Use Surveys for the Development of the Huara River Basin. FAO. (6/64; 3 yrs) $1,742,500

## AGRICULTURAL AND PLANT SCIENCES

Pan American and World Health Organizations (UN)

Studies on Promotion of Rural Health and Agriculture (64- ) $18,837
In continuation of previous projects in cooperation with the Inter-American Development Bank in making studies on the promotion of rural health and agriculture, a consultant is cooperating in planning for the development of the health aspects of a program in Peru for the promotion of agriculture, livestock production, and rural welfare in the Department of San Martín; in the development of an institute of bacteriology in Bolivia; and cooperating in similar programs including the organization of public health laboratory and diagnostic services in other countries.

Veterinary Medicine Education (65- ) $3,200
The objective of this project is to provide assistance to the Faculty of Veterinary Medicine of the University of San Marcos in improving teaching methods and in organizing a department of veterinary public health.

T O T A L - Agencies of the United Nations $8,963,161

Agency for International Development

Agrarian Reform and Agricultural Credit (62-71) Spent thru 6/64: $420,000
To develop institutions for carrying out a program of agrarian reform and for the agricultural credit needed to make the program succeed. The GOP has placed the highest priority on developing the agricultural sector and carrying out a meaningful agrarian reform. (Estimated total cost: $4,895,000)

Iowa State U. of Science & Technology and State U. of Iowa - Institute of Agrarian Reform and Promotion (10/62-6/67) $1,578,060.
Agricultural Production. To help formulate and analyze agrarian reform alternatives conducive to national economic growth, appraise land ownership credit needs, analyze marketing methods and institutional arrangements and appraise means for improving agricultural laborers' productivity, working and social conditions and economic status. Includes training of 20 specialists per year, development of economics staff and execution of pilot projects. Special emphasis on "Southern Peru Development."

## AGRICULTURAL AND PLANT SCIENCES

Agency for International Development (continued)

Basic Agricultural Institutional Development (62-71) Thru 6/64: $1,330,000
To support agricultural production and proposed land reform program by the improvement and expansion of education, research and reforestation. (Estimated total cost: $8,884,000)

N.C. State College of Agriculture & Engineering - Agrarian U. (1/61-6/66) $3,396,380.
Curriculae of several faculties being revised and extended, teaching & research activities brought together; field programs have been conducted in southern Peru; agricultural research service (SIPA) has been established in the Ministry. (The North Carolina program began in 1954.)

Institute of Agrarian Reform and Promotion (LOAN) $16,600,000
To support the first phase of a five-year national agricultural development program. This includes programs for supervised credit and technical assistance to small and medium farms on the coast and in the sierra, support for colonization projects, and other extension and development projects through such agencies as ONRA (National Office of Agrarian Reform), SIPA, and the Finance Corporation of Agrarian Reform.

Agrarian University (PL-480 LOAN, 1964) $1,000,000
To finance the first stage of a major expansion program for the University.

Ministry of Development and Public Works (PL-480 LOAN, 1964)
For the construction of the first stage of a 43-kilometer irrigation canal along the left bank of the Ica River. $212,687

For reconstruction and termination of the Huallabamba irrigation canal, in the Department of Lambayeque. $149,254

Ministry of Agriculture (PL-480 LOAN, 1964) $201,493
For expansion and new construction of agricultural experiment stations at Lambayeque, Tulumayo, Bellavista, Juanjuí and Yurimaguas, and for equipment for about 30 agricultural extension offices.

TOTAL GRANTS $1,750,000
TOTAL LOANS $18,163,434
T O T A L - Agency for International Development $19,913,434

## AGRICULTURAL AND PLANT SCIENCES

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| University of Cuzco | | | |
| Jorge Kuon Cabello | Soils, foods & plants | U. Cal., Davis | 60-61 |
| Guillermo Garnica T. | Soil chemistry, use of nitrogen fertilizers | N.C. State College | 62-63 |
| San Marcos University | | | |
| Javier Barua C. | Use of radioisotopes in animal nutrition | U. Tenn, AEC Agr. Exp. Station, Oak Ridge | 62-64 |

### National Institutes of Health

| | |
|---|---|
| Anglo-American Hospital, Dr. George Graham | |
| Development of indigenous food supplements (63,64,65) | $111,300 |
| San Marcos University | |
| A. Cuba: Epidemiological studies in sheep pulmonary adenomatosis (62,63,64) | $79,713 |
| C. Reynafarje: Erythocytic balance in high altitude adapted animals (63,64,65) | $29,580 |
| T O T A L - NIH | $220,593 |

### National Science Foundation*

| | |
|---|---|
| Los Angeles State College Foundation, Richard Straw | |
| Monographic studies in the genus Calceolaria. (5/60; 4-1/2 yrs) | $14,000 |
| Harvard University | |
| R. Tryon: Fern Flora of Peru (12/60; 4 yrs) | $5,100 |
| O. Solbrig: S. American species of Gutierrezia (Compositae) (12/60; 4 yrs) | $8,100 |
| Smithsonian Institution | |
| J. Wurdack: Paramo Flora of Northeastern Peru (12/61; 1 yr) | $10,800 |
| J. Cuatrecasas: Taxonomic study of Phanerogams (7/63; 3 yrs) | $52,500 |
| University of California | |
| M. Mathias: Taxonomic studies in the Umbelliferae (7/63; 2 yrs) | $17,900 |
| L. Constance: Amer. Umbelliferae & Hydrophyllaceae (1/63; 1 yr) | $4,200 |

*In most cases NSF grants to U.S. institutions for research apply to a larger geographical area of which Peru is only one part.

## AGRICULTURAL AND PLANT SCIENCES

National Science Foundation (continued)

| | |
|---|---|
| Fairchild Tropical Garden, Miami, P. B. Tomlinson<br>Systematic anatomical and other studies in Monocotyle.<br>(11/64; 2 yrs) | $30,400 |
| Cornell University, H. E. Moore Jr<br>Studies in the floral morphology and anatomy of palms.<br>(4/65; 3 yrs) | $34,600 |
| Chicago Natural History Museum, Gabriel Edwin<br>Flora of Peru (5/65; 2 yrs) | $16,400 |
| T O T A L - National Science Foundation | $194,000 |

USDA - Foreign Agricultural Research Agreements (PL-480)

| | |
|---|---|
| Ministry of Agriculture, Forest Service<br>Collection of wood samples and herbarium voucher specimens from the forest trees of Peru. (5/61; 5 yrs) | $92,201 |
| SIPA, Entomology Department, La Molina<br>Investigations of the golden nematode, a potato pest.<br>(5/61; 5 yrs) | $75,686 |
| San Marcos University, School of Veterinary Medicine<br>Environmental factors influencing parasites and parasitic diseases of economic importance in ruminants (cattle, sheep, etc.) (11/61; 5 yrs) | $90,485 |
| T O T A L - USDA | $258,372 |

Ford Foundation

| | |
|---|---|
| Agrarian University<br>Teaching & research in agricultural economics & rural sociology. (1/63; 3 yrs) | $300,000 |

## AGRICULTURAL AND PIANT SCIENCES

Rockefeller Foundation

| | |
|---|---|
| Agrarian University | |
| Development of postgraduate agricultural teaching and research program. (60; 4 yrs) | $300,000 |
| Ferruccio Accame, Dean, Faculty of Zootechnology, to visit departments of animal husbandry at colleges and research centers in the U.S., Mexico, Costa Rica, Brazil and Colombia. (61) | 3,950 |
| To help meet expenses of a national scientific symposium on animal husbandry held in Lima under the auspices of the School of Animal Husbandry during May 1961. | 2,900 |
| Antonio Bacigalupo, Head, Institute of Research and Advanced Studies, to observe organizational patterns, program and curriculum planning, administrative procedures, and study progress in animal nutrition centers in Colombia, Central America, Mexico and the U.S. (61) | 2,150 |
| F. Accame to attend the meeting of the American Dairy Science Association in College Park, Maryland. (62) | 1,125 |
| Octavio Velarde, Dean, Faculty of Agriculture, to attend the Inter-American Meeting of Deans in Medellín, Colombia, and to visit Rockefeller Colombian Agricultural Program. (62) | 900 |
| Orlando Olcese, Rector, to attend the World Food Congress in Washington, D.C., and the annual meeting of the American Society of Agronomy in Denver. (63) | 2,315 |
| Support of a basic food crop and livestock teaching and research program conducted mainly at the postgraduate level in cooperation with SIPA. (63; 3 yrs) | 340,000 |
| Agricultural Research and Extension Service (SIPA) | |
| Development of research centers and of crop research projects by the Cooperative Program of Agricultural and Livestock Experimentation. (60) | $75,000 |
| Benjamin Quigandría, Assistant Director, to study research, extension and teaching at experiment stations and research centers in Latin America and the U.S. (61) | 4,410 |
| Amalia Cavero y Cornejo, Chief Librarian, to visit agricultural libraries in U.S. for inservice training. (61) | 3,250 |
| Abelardo Baracco, Technical Director, to visit agricultural and livestock development programs in Colombia, Costa Rica, Mexico, and the U.S. (62) | 2,250 |
| Alexander Grobman, Director, Research Division, to attend the 11th International Contress of Genetics at The Hague. (63) | 240 |
| Support of a basic food crop and livestock research program conducted in cooperation with Agrarian University. (63; 3 yrs) | 260,000 |

## AGRICULTURAL AND PLANT SCIENCES

Rockefeller Foundation (continued)

| | |
|---|---|
| **San Marcos University** | |
| Support of an international program of postgraduate training. (63; 3 yrs) | $138,000 |
| Carlos Chavez to review experimental techniques for determining the effect of parasites and parasitic diseases on ruminants at laboratories in U.S. (60) | 2,975 |
| Teodoro Ramos Saco, Dean, to serve as consultant & advisor to the U. of South Valdivia, Chile, and the U. of San Carlos, Guatemala. (60) | 2,695 |
| Development of a postgraduate short course in clinical medicine for the treatment of large animals. (62) | 10,000 |
| Max Lombardi, veterinary science studies. (62; 3 yrs) | 25,000 |
| Arturo Tello Garust, Head, Poultry Pathology Laboratory, to attend a symposium on Newcastle disease virus in Madison, Wisconsin, and to visit poultry disease research centers in the U.S. (63) | 2,725 |
| Manuel Moro, Dean, to visit faculties of veterinary medicine in U.S. and Colombia. (63) | 2,705 |
| Ramos Saco to attend the 17th World Veterinary Congress in Hanover, Germany, and to visit centers of veterinary medicine in Scotland and faculties of veterinary medicine and research institutions in Brazil. (63) | 1,865 |
| **T O T A L - Rockefeller Foundation** | $1,184,455 |

**Fellowships:**

| | | | |
|---|---|---|---|
| **Agrarian University** | | | |
| Alexander Grobman | Plant Science-Genetics | USA | 1960 |
| Miguel del Campo | Veterinary Medicine | USA | 1960 |
| Antonio Manrique C. | Corn Breeding | USA | 1961 |
| Hector Rafael Pimentel | Food Technology | USA | 1961 |
| Mario Rondon Olazaval | Plant Genetics & Breeding | USA | 1961 |
| Luisa Indacochea P. | Library Science | USA | 1962 |
| Ulises Moreno | Plant Science-Botany | USA | 1961 |
| Raúl Soikes | Animal Sciences | USA | 1962 |
| Francisco Pautrar | Dairy Husbandry | USA | 1962 |
| Manuel Arca Bielick | Soil Science | USA | 1963 |
| Hernan Barreto B. | Food Science-Nutrition | USA | 1963 |
| Guillermo Burgo | Poultry Science | USA | 1963 |
| Fausto Cisneros | Entomology | USA | 1963 |
| Abraham Febres Cruz | Economics | USA | 1963 |
| Guillermo Gomez | Animal Nutrition & Physiology | USA | 1963 |
| Friedrich Scheuch H. | Plant Science-Agronomy | USA | 1963 |
| Ricardo Sevilla | Plant Genetics & Breeding | USA | 1963 |
| Oscar de Córdova D. | Plant Genetics & Breeding | USA | 1964 |
| Juan Flórez Martínez | Plant Science-Agronomy | USA | 1964 |
| Miguel Holle Ostendorf | Horticulture | USA | 1964 |

AGRICULTURAL AND PLANT SCIENCES

Rockefeller Foundation (continued)

| | | | |
|---|---|---|---|
| Ministry of Agriculture | | | |
| Marino Romero Loli | Genetics & Plant Breeding | USA | 1960 |
| Jorge Christiansen G. | Genetics & Plant Breeding | Mexico | 1961 |
| Dongo Denegri Segundo | Plant Pathology | Mexico | 1961 |
| Oswaldo Voysest V. | Genetics & Plant Breeding | USA | 1961, 63 |
| Julio Arroyo Vergara | Experimental Statistics | USA | 1962 |
| Pedro López Camarena | Genetics & Plant Breeding | Mexico | 1963 |
| Felix Quevedo | Soil Science | USA | 1963 |
| Fermín de la Puente C. | Genetics & Plant Breeding | USA | 1964 |
| San Marcos University | | | |
| Max Lombardi Lombardi | Veterinary Medicine | USA | 1960 |
| German Orbezo Suarez | Animal Science | Mexico | 1961 |
| Quiterio Núñez | Veterinary Science | USA | 1962 |

TOTAL GRANTS: $12,882,750
TOTAL LOANS: $57,551,489

TOTAL: AGRICULTURAL AND PLANT SCIENCES $70,434,239

## MARINE RESOURCES

Food and Agriculture Organization (UN)

| | |
|---|---|
| Execution of UNSF project at Instituto del Mar. (61) | $1,431 |

U. N. Special Fund

| | |
|---|---|
| Marine Resources Research Institute<br>To help establish a research institute for marine resources (Instituto del Mar). (12/59; 4 yrs) | $1,766,500 |

| | |
|---|---|
| **TOTAL; MARINE RESOURCES** | **$1,767,931** |

## MEDICAL AND BIOLOGICAL SCIENCES

### Pan American and World Health Organizations*

Government of Peru - Plague Control — $15,589
To assist the Government in planning and carrying out an epidemiological study of the problem of plague in the country and in establishing a control program. (63-67)

National Health Services — $291,322
The objective of this project is to improve the health services at the national, regional, and local levels and to develop health areas, beginning with the Junín area. For the Junín area a five-year plan has been developed and programs in training, environmental sanitation, communicable disease control, medical care, maternal and child health and applied nutrition have been started. (56-67)

Andean Region Development Program — $9,932
To promote the economic and social development and the health of the indigenous populations of the Andean highlands so as to facilitate their integration into the national community. In the field of health, activities have been intensified with respect to medical care, rural sanitation, nutrition and training. (55- )

Tuberculosis Control (Tacna) — $17,978
To establish in the Tacna health area a demonstration area for the application and evaluation of practical methods of tuberculosis control and for training medical and auxiliary personnel, in order to extend the program gradually to other areas of the country. (61-66)

Tuberculosis Control (Junín) — -----
To develop a tuberculosis control program in the Province of Huancayo, Department of Junín, including the training of professional and auxiliary personnel. (64, 65)

George Graham, Anglo-American Hospital — $278,444
Infant Diarrhea and Malnutrition. Study of the nature of the water metabolism and electrolyte changes in children suffering from diarrhea and malnutrition and find the best ways of treating such children. (60; 5 yrs. Money from NIH)

School of Public Health, Ministry of Public Health — $11,810
The objective of this project is to promote the training of professional, technical, and auxiliary personnel for the public health services. In 1964 the Personnel Training Center of the Ministry of Public Health was made a School of Public Health and during the year the School presented 18 courses benefitting 457 professional and auxiliary students. (63-66)

*Program costs are actual 1960 through 1964 and estimated 1965. Years in parentheses are estimated program duration.

MEDICAL AND BIOLOGICAL SCIENCES

Pan American and World Health Organizations (continued)

Fellowships for Health Services — $119,529
Provision is made for fellowships in order to collaborate with the Government in the improvement and expansion of its health services. (61-65)

Medical Education — $3,985
To improve the medical education programs of the Schools of Medicine through adequate planning, not only of teaching activities but also of scientific research and by improving the organization and administration of the Schools. The five faculties of medicine in Peru have expressed interest in receiving this assistance from PAHO. (64- )

Nursing Education — $111,568
The objective of this project is to organize or strengthen basic nursing education within several of the existing universities. In addition to the University of San Marcos, which originally asked for assistance in organizing a new school of nursing, three other universities in Peru requested in 1964 that aid be given to their existing schools. The first step has been the organization of a course to help provide well-prepared nursing instructors. In July 1965, a seminar was held to acquaint university and health officials with the needs of a good school of nursing in regard to organization, budget, faculty, students, curriculum and facilities. (59-68)

T O T A L - PAHO and WHO — $860,157

International Atomic Energy Agency (UN)

Institute of Neoplastic Diseases
Health physics and radiation protection. (63,64) — $22,894

Fellowships
Nuclear medicine (12 mos) 1961
Radio and Teletherapy (10 mos) 1965

T O T A L - United Nations Agencies — $883,051

## MEDICAL AND BIOLOGICAL SCIENCES

### Agency for International Development

**Improvement and Expansion of Health Services (62-68)** Thru 6/63: $143,000
To support GOP efforts in expanding public health services, especially in the Southern Highlands, and reducing endemic and epidemic diseases. Has provided direct-hire technicians to assist GOP agencies and participant training in the U.S. and third countries. Activities encompass health research, demonstration, pilot projects and pioneering. Peruvian agency involved: Ministry of Public Health. (Obligations through FY 1964: $373,000)

**North Carolina - Ministry of Public Health (63-65)** $160,000
Develop projects in potable water and sewage and train in Peru and at North Carolina.

**T O T A L - Agency for International Development** $143,000

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| **University of Arequipa** | | | |
| Pedro Arellano | Pharmacology, factors affecting pressor & depressor responses | Marquette | 60-61 |
| Carlos Neuenschwander | Organiz. of psychiatry department | U. of Miami | 60-61 |
| **San Marcos University** | | | |
| Rolando Calderón | Diabetes, new anti-diabetic drugs | U. Pennsylvania | 60-61 |
| Alejandro de la Fuente | Medical sciences | U. Tennessee | 64-65 |
| Armando Ugarte Chacon | Cardiovascular surgery | Med. Coll. of Va. | 63-64 |
| **University of Trujillo** | | | |
| Angel Quintanilla | Histology & hematology | Tufts U. | 60-61 |
| Oscar Grados Bazalar | Enteric bacteriology | Communicable Disease Center, Atlanta | 63-65 |
| Cesar Jaramillo V. | Clinical cardiology; teaching & laboratory methodology | U. Wisconsin | 63-65 |
| Rafael Palacios R. | Medical Sciences | N. Y. U. | 64-65 |

## MEDICAL AND BIOLOGICAL SCIENCES

### National Institutes of Health

**Brain Research Center, V. Alzamora-Castro**

| | |
|---|---|
| Cardiovascular studies at high altitudes. (61) | $24,867 |

**Hospital del Niño**

| | |
|---|---|
| M. Bocanegra: Therapy of pseudonomas infections. (63) | $34,730 |
| S. Rosenthal: Cause & treatment of early & late deaths in burns. (64,65) | $69,400 |

**Instituto Nacional de Enfermedades Neoplásticas, G. Ramírez**

| | |
|---|---|
| Purchasing equipment for an electron microscopy lab. (63,64) | $5,000 |
| Ultrastructure studies on tissues of leukemia patients. (65) | $2,500 |

**Laboratorio de Investigación de Cancer, Pablo Mori-Chavez**

| | |
|---|---|
| Effect of high altitudes on neoplastic growth. (62,63,64,65) | $68,471 |

**Sociedad de Beneficencia Pública de Lima**

| | |
|---|---|
| J. Arias-Stella: Infants hearts & pulmonary vessels at high altitudes. (60,61) | $110,349 |
| Garcia-Caceres: Electrolyte imbalance in glomerulonephritis. (62,63,64) | 63,424 |
| Hurtado: Process of aging at sea level & at high altitudes. (63,64,65) | 401,600 |
| D. Penaloza: Cardiopulmonary physiology in children. (63,4,5) | 114,906 |
| G. Battilana: Cardiovascular studies at high altitudes. (63,64,65) | 60,000 |

**Universidad Peruana de Ciencias Médicas y Biológicas**

| | |
|---|---|
| Hurtado: Process of aging at sea level & high altitudes. (62) | 167,200 |
| Guerra-Garcia: Urinary testosterone in natives at high altitudes. (64,65) | 5,000 |
| Zapatá-Ortiz: Pharmacology of the bronchial circulation in high altitudes. (64,65) | 40,310 |
| Pérez-Núñez: Ultrastructure of kidneys & lungs at high altitudes. (65) | 30,251 |

**San Marcos University**

| | |
|---|---|
| Arias Stella: Infant hearts & pulmonary vessels at high altitudes. (60,61) | $27,200 |
| Hurtado: Therapy of pseudonomas infections. (60,61) | 61,358 |
| Aging at sea level & high altitudes. (61) | 122,960 |
| Mori-Chavez: Effect of high alt. on neoplastic growth. (60,61) | 30,509 |
| Garcia-C: Tubular alterantions in glomerulonephritis. (61) | 14,200 |
| Penaloza: Cardiopulmonary physiology in children. (62) | 16,500 |
| Rosenthal: Therapy of pseudonomas infections. (62) | 38,570 |
| T. Velasquez: Mechanics of breathing in high altitude natives. (62,63,64) | 7,500 |
| Reynafarje: Physiological aspects of exercize at high altitudes. (63,64,65) | 28,350 |

## MEDICAL AND BIOLOGICAL SCIENCES

### Public Health Service International Postdoctoral Research Fellows:

| | | | |
|---|---|---|---|
| **Hospital Loayza, Lima** | | | |
| Carlos Marchena | Nephrology | N.Y. Hospital, Cornell | 1965 |
| **Instituto Nacional de Enfermedades Neoplásticas** | | | |
| Graciela Ramírez | Electron-microscopy | NIH | 1960 |
| **Instituto de Biología Andina** | | | |
| M. T. Velaxquez | Respiration | U. of Buffalo | 1960 |
| Raúl Gamboa | Cardiovascular physiology | Mount Sinai Hospital | 1961 |
| José Ramos | Hematology | Medical Research Center | 1963 |
| | | Brookhaven Nat'l. Lab, NY | 1963 |
| **Instituto de Investigaciones de la Altura** | | | |
| Roger Guerra-Garcia | Endocrinology | Mount Sinai Hospital | 1962 |
| Mario Saldana | Pathology | Yale | 1963 |
| Manuel Figallo | Hematology | Washington U. | 1963 |
| Eduardo Pretell | Endocrinology | Massachusetts Gen. Hospital | 1963 |
| Natalio Banchero | Cardiology | Mayo Clinic | 1963 |
| Ciro del Rio | Cardiology | U. Cal. S. Fran. Med. Cent. | 1965 |
| **Peruvian University of Medical & Biological Sciences** | | | |
| José Arana-Sialer | Immunology | U. of Illinois | 1960 |
| Teresa Pérez-Núñez | Pathology | Yale | 1961 |
| Regulo Agusti | Cardiology | Mount Sinai Hospital | 1963 |
| Julio Cruz-Jibaja | Respiration | State U. of New York | 1964 |
| Salvador Sialer | Cardiology | U. of Wisconsin | 1964 |
| Raúl Cantella | Immuno-parasitology | Bryn Mawr | 1965 |
| **San Marcos University** | | | |
| Carlos Krumdieck | Biochemistry | Tulane | 1962 |
| José Faura | Hematology | Argonne Cancer Research U. of Chicago | 1965 |

### National Science Foundation and Ford Foundation

A Summer Course for Biology Teachers, held at the Peruvian University of Medical and Biological Sciences, January 25-February 27, 1965, under the direction of Dr. Manuel Vegas of Agrarian University, was sponsored by the Instituto Peruano de Fomento Educativo and jointly supported with Ford and NSF/AID funds. A total of 40 secondary school teachers participated, 30 from Peru. The Biological Sciences Curriculum Study ecological "Green Version" adapted for tropical Latin America was the central theme of the course.

| | |
|---|---|
| Ford Foundation | $12,600 |
| National Science Foundation | 7,500 |

## MEDICAL AND BIOLOGICAL SCIENCES

### Participants in National Science Foundation Summer Institutes

| | | | |
|---|---|---|---|
| Jorge Alegre | Biology & Electron Microscopy | Colorado State U.<br>U. of California | 1964 |
| Marc Dourojeanni | Biology | Utah State U. | 1965 |

### Atomic Energy Commission

Junta de Control de Energia Atómica & National University
General medical radioisotope research and training laboratories. (60) $29,255

### Latin American Office of Aerospace Research

University of Trujillo, Medical Faculty, A. Medina
Role of catecholamines & serotonin in process of adaptation to high altitudes. (7/65; 1 yr) $11,827

University of San Marcos, Dr. Guillermo Whittembury
Estimation of pore radius at both surfaces of frog skin. (61) $3,940

T O T A L - LAOAR $15,767

### U. S. Army Research Grants

Instituto de Investigación de la Altura, Dr. Federico Moncloa
Role of adrenal cortex in process of acclimitazation. (5/65; 2 yrs. Total grant: $43,000*) $21,500

San Marcos University
A. Cuba: Pathology of high alittude. (5/65; 3 yrs. Total grant: $47,000*) $15,680
C. Reynafarje: Humoral control of the erythropoiesis during altitude change. (5/65; 3 yrs. Total grant: $37,712*) $12,570

T O T A L - Army Research Grants $49,750

## MEDICAL AND BIOLOGICAL SCIENCES

### Kellogg Foundation

**Anglo-American Hospital**

Assist improvement of nursing education by providing library books for the School of Nursing. (64) — $3,761

**Society of Public Beneficience of Lima**

Assist in study of the organization & administration of its teaching hospitals. (60) — $3,689

Specialized preparation in U.S. for selected faculty members as part of cooperative programs to improve education in hospital administration. (61,62,63) — $9,142

**Peruvian University of Medical and Biological Sciences**

Projects of demonstration and counsel, supplementation of salaries to permit full-time instruction. (62) — $56,250

Specialized preparation in U.S. for selected faculty members. (63,64) — $5,229

**San Marcos University**

Specialized preparation in U.S. for selected faculty members. (60,61,62,64) — $24,953

Demonstration projects, supplementation of salaries to permit full-time teaching, equipment for research & teaching. (60,61) — $69,568

Assist in modernizing clinical instruction & practice, equipment for research & teaching. (60,61) — $75,373

Equipment & teaching aids to augment the teaching and research programs. (62) — $4,747

**Fellowships:**

Society of Public Beneficience of Lima

| | |
|---|---|
| Rubén Nué Sessrego, M.D. | 1961, 63 |

Peruvian University of Medical and Biological Sciences

| | |
|---|---|
| Augusto Yi Chu, M.D. | 1964 |

San Marcos University

| | |
|---|---|
| Rafael Acosta Meza, M.D. | 1960 |
| Santos Faustino Tataje, M.D. | 1960, 61 |
| José Silva Díez, M.D. | 1960 |
| Roberto Beltrán Neira, M.D. | 1961 |
| Ramón Purón del Aguila, M.D. | 1961, 63 |
| Homero Silva Díaz, M.D. | 1961 |
| Manassés Fernández Lancho, M.D. | 1963 |

T O T A L - Kellogg Foundation — $252,712

## MEDICAL AND BIOLOGICAL SCIENCES

Rockefeller Foundation

| | |
|---|---|
| National Institute of Health, Virus Division | |
| José Santos Madalengoita, Head: to visit Belem Virus Lab to observe techniques in arbovirus research. (65) | $1,940 |
| Peruvian University of Medical and Biological Sciences | |
| Development of the Faculty of Medicine. (62; 3 yrs) | $100,000 |
| A. Hurtado, Dean, to observe the organization and curricula of medical schools in Brazil. (62) | $600 |
| Carlos Monge to visit the U. of São Paulo to undertake research in amphibian renal physiology with Dr. Luis Junqueira, Dept. of Histology & Embriology. (63) | $1,650 |
| Expenses of six visiting professors from South America and to enable Vicente Zapata, prof. of pharmacology, to observe medical education in the U.S. as well as teaching and research in pharmacology. (63) | $4,240 |
| Hurtado to travel to U.S. in connection with a monograph on high altitude physiology. (64) | $1,400 |
| Equipment for the Department of Biochemistry. (64) | $12,000 |
| Equipment and supplies for research in the biology of reproduction. (65) | $30,000 |
| University of San Marcos | |
| Equipment for biophysics laboratory in Med. Faculty. (60) | $10,000 |
| Carlos Monge travel to Europe to observe research in renal physiology. (60) | $3,800 |
| Equipment for radiobiology laboratory and housing for foreign students and visiting professors. (61; 3 yrs) | $25,000 |
| Development of basic science departments and teaching programs in the Faculty of Medicine. (61; 3 yrs) | $105,000 |
| T O T A L - Rockefeller Foundation | $295,630 |

Fellowships:

| | | | |
|---|---|---|---|
| Peruvian University of Medical and Biological Sciences | | | |
| Carlos Krumdieck | Biochemistry | USA | 1963 |
| Fernando Porturas | Histology | Brazil | 1963 |
| University of San Marcos | | | |
| Leonidas Aguilar C. | Neurophysiology | USA | 1961 |
| Aurelio Ortiz R. | Pharmacology | Chile | 1964 |

| | |
|---|---|
| TOTAL: MEDICAL AND BIOLOGICAL SCIENCES | $3,234,420 |

## DENTISTRY

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| **San Marcos University** | | | |
| **Jorge Diaz** | Oral diagnosis; U.S. teaching methods in periodontics | Temple U. | 61-62 |
| **Isidro Ronquillo** | Prosthetic dentistry; teaching methods | Temple U.<br>U. Pa. | 63-64 |

### Kellogg Foundation

| | |
|---|---|
| **University of San Marcos** | |
| **Specialized preparation in U.S. for selected faculty members. (60,61,62,64)** | $8,530 |
| **Equipment for the new building of the Dental School. (62,63)** | $40,000 |
| **Salary supplementation. (62)** | $6,930 |
| **T O T A L - Kellogg Foundation** | $55,460 |

| | |
|---|---|
| **TOTAL: DENTISTRY** | $55,460 |

## MATHEMATICS

### National Science Foundation

A Summer Course for Mathematics Teachers, sponsored by the OAS, NSF/AID, the School Mathematics Study Group of Stanford University, and by the Peruvian Ministry of Education and the National Engineering University was held at La Cantuta, near Lima during February 3-March 14, 1964. Dr. José Tola of the National Engineering University served as local director of the course. A total of 130 teachers participated, of which 70 were Peruvian. Six mathematics courses to accomodate different levels of preparation were offered and each course participant was provided with the Spanish translation of SMSG texts. $60,500

A Summer Course for Mathematics Teachers, held at La Cantuta, during February 1-March 6, 1965, under the auspices of the Instituto para la Promoción de la Enseñanza de las Matemáticas (IPEM), was sponsored by NSF/AID, the National Engineering University, the Peruvian Ministry of Education. Dr. Tola also directed this course. A total of 111 teachers participated, 100 from Peru. The course centered around SMSG materials developed by the School Mathematics Study Group of Stanford University. $13,250

Participants in NSF Summer Institutes:

| | | |
|---|---|---|
| German Coralles-Velarde | Oberlin | 1961 |
| Felipe Durand Araujo | U. Puerto Rico | 1962 |
| Hector Uculmana Huaman | U. Puerto Rico | 1962 |
| Ruben Romero Mendez | San Jose State Coll. | 1963 |

T O T A L - National Science Foundation $73,750

### Fulbright Fellowships

National Engineering University

| | | | |
|---|---|---|---|
| Carlos Parades Arana | Methods of teaching math to engineering students. | Purdue | 63-65 |

| | |
|---|---|
| TOTAL: MATHEMATICS | $73,750 |

## CHEMISTRY.

### International Atomic Energy Agency (UN)

Fellowship in nuclear chemistry (12 mos) 1963

### Fulbright Fellowships

University of Trujillo

| | | | |
|---|---|---|---|
| Pedro Reyes P. | Inorganic & organic chemistry; methods of teaching | Tulane | 62-63 |

### National Science Foundation

Participant in NSF Summer Institutes:

| | | | |
|---|---|---|---|
| Eduardo Mull-N. | Chemistry | U. New Hampshire | 1960 |

## ENGINEERING

### Inter-American Development Bank

National Engineering University (64) — $2,500,000

To help finance a broad program to improve its Schools and Institutes. The program seeks to raise the level of instruction in engineering and architecture, to increase the number of professional personnel graduated, and to intensify research within various departments. The University hopes to reach these objectives by adding and improving buildings, facilities, and laboratories; by providing additional teaching & research equipment; and by carrying out academic and administrative reforms -- all aimed at bringing Peruvian teaching more in line with Peru's social and economic development goals. Once the program is completed at an estimated cost of $9,158,000, the university will be able to increase student enrollment from the present 3,400 to 8,000 by 1971. The Bank loan will help finance a project contained in the program calling for the building and equipmming of classrooms & laboratories for the Schools of Mining Engineering and Geology, Mechanical, Electrical and Sanitary Engineering; Departments of Physical Sciences and Mathematics, and the Institutes of Mathematics and Planning. It also calls for the purchase of library materials and the provision of technical assistance. The Bank is financing 64.5% and the University, 35.5%, of this $3,875,000 project. $100,000 of this loan is for technical assistance.

### Pan American and World Health Organizations

National Engineering University (64-67) — -----

School of Sanitary Engineering. To revise the curriculum of the School and to organize courses on subjects bearing on water supply and sewerage.

### U. N. Special Fund

National Engineering University (1/63; 5 yrs) UNESCO — $2,469,800

School of Technology. Organization of a School of Technology in the University. UNESCO has supplied $250,000 worth of equipment and materials and has sent experts to help prepare plans of study, to teach, and to help organize the laboratories.

## ENGINEERING

ulbright Fellowships

| | | | |
|---|---|---|---|
| National Engineering University | | | |
| Juan Rodriguez del C. | Petroleum products; organ. of university dept. | U. Tulsa | 60-61 |
| César Tipian V. | Engineering | U. Oklahoma | 64-65 |
| Technical University of the Altiplano | | | |
| Virgilio Palacios O. | Mining engineering | U. Nevada | 63-64 |
| University of Arequipa | | | |
| Jorge de Rivero V. | Organ. & adminis. of chem. engineering department | U. Minnesota | 61-62 |
| University of Cuzco | | | |
| Orestes Villafuerte R. | Mineral engineering; process metallurgy | Stanford U. | 62-63 |
| University of Trujillo | | | |
| Luis Sanchez V. | Chemical unit operations; fluid mechanics | Purdue | 61-62 |
| A. Cardenas F. | Organ. & adminis. of chem. engineering department | U.Minnesota | 61-62 |

'ord Foundation

National Engineering University
Strengthening of educational program of the University.
(3/64; 4 yrs) $570,000

TOTAL LOANS: $2,500,000
TOTAL GRANTS:

TOTAL: ENGINEERING

## PHYSICS

### National Science Foundation

A Summer Course for Physics Teachers, held January 24-March 19, 1965, at La Cantuta, under the auspices of IPEM, was sponsored by the same organizations as the course for mathematics teachers. The course was under the direction of Prof. Victor Latorre of the National Engineering University. A total of 30 teachers participated, 25 from Peru. Material developed by the Physical Science Study Committee was the central theme of the course. $11,750

Participants in NSF Summer Institutes

| | | |
|---|---|---|
| Holger Valqui | Knox College | 1964 |
| Victor Honma | Ohio University | 1965 |
| Casio Ore | Lake Forest College | 1965 |

### Rockefeller Foundation

Catholic University (64) $3,800
Conference on nuclear spectroscopy and solid state physics.

| | |
|---|---|
| TOTAL: PHYSICS | $15,550 |

## METEOROLOGY

### Organization of American States

Peruvian Productivity Center
Direct the Center's training programs in sectoral meteorology. Two experts. (64/65; 2 mos) $9,029

### United Nations Special Fund

Expansion of Meteorological and Hydrological Services and Establishment of a National Hydraulic Laboratory. (5/60; 4 yrs) $1,862,300
(GOP contribution in facilities, personnel: US$1,375,950)

### World Meteorological Organization (UN)

To coordinate existing services and centralize data for the Special Fund project above. (61-65) $762,800

Expert to train local foresters. (60; 2 yrs) $35,600

Expert to advise GOP in the processing and utilization of hydrometeorological data with special emphasis on analysis of data for purposes of irrigation and other means of utilization of water. (65-66) $24,000

Fellowships: Two 12-month fellowships for the study of tropical and aeronautical meteorological. (63-64)

T O T A L - United Nations Agencies $2,684,700

### Latin American Office of Aerospace Research

Geophysics Institute, Dr. Alberto Giesecke, Jr.
Collection & analysis of ionospheric absorption data. (61-64) $17,000
Study of airglow at low altitudes. (63-3/66) $52,700
Observation & study of radiation from exospheric protons in equatorial region. (5/64; 10/65) $10,000
Equatorial activity. (7/64-6/65) $2,000
Radiotelescope measurements of solar flux density at 9000 MC. (3/65-2/66) $20,000

T O T A L - LAOAR $101,700

## METEOROLOGY

National Bureau of Standards

Jicamarca Radar Observatory

This observatory is operated cooperatively by the Central Radio Propagation Laboratory of the National Bureau of Standards and the Geophysics Institute of Peru. However, 99 percent of the financial support comes from the U.S. Government through the NBS. Total support: 1961-65: $3,667,500

Scatter Radar Projects:

Incoherent Scatter Profiles: A new radar technique, developed by this & several cooperating laboratories, is being used to measure upper atmosphere plasma characteristics such as electron density, electron & ion temperatures and ion composition as a function of height; description of variations of these characteristics as a function to time of day, variable solar influences, time of year, etc.

Absorption: Investigate cross modulation and absorption effects produced in the D and E regions of the ionosphere by radar transmissions.

Radar/Radio Astronomy: Investigate certain problems in the radar astronomy and radio astronomy fields.

Synchrotron Noise: Observe the time variations of the synchrotron radiation from the Starfish electrons. Monitoring of electrons from other similar explosions could be accomplished on short notice.

Equatorial Scatter: Investigate experimentally the nature of several kinds of ionospheric irregularities which cause radio scattering and diffraction effects.

T O T A L - National Bureau of Standards $3,667,500

TOTAL: METEOROLOGY $6,462,929

## GEOPHYSICS

National Science Foundation

| | |
|---|---|
| Geophysics Institute, Mateo Casaverde | |
| Geomagnetic investigations in Peru, Bolivia & Chile. (8/61; 18 mos) | $19,000 |
| Carnegie Institution of Washington, Dr. Merle Tuve | |
| Seismic & gravity studies of the Andes. (9/60; 2 yrs) | $40,000 |
| Deep conductivity in the earth's crust & mantle in the Andes. (4/64; 2 yrs) | $69,800 |
| Deep focus quakes to measure Q of the upper mantle. (4/64; 2 yrs) | $119,000 |
| Q in the crust and top of the mantle. (4/64; 2 yrs) | $76,400 |
| T O T A L - National Science Foundation | $324,200 |

Latin American Office of Aerospace Research

| | |
|---|---|
| Geophysics Institute, Dr. Giesecke | |
| Study and special observations of the earth's magnetic field. (6/64; 2 yrs) | $6,000 |

| | |
|---|---|
| TOTAL: GEOPHYSICS | $330,200 |

## NATURAL RESOURCES (GEOLOGY, HYDROLOGY, SOILS, ETC.)

### British Ministry of Overseas Development

Five British geologists are directing survey, under the supervision of Dr. John Wilson, of Peru's mineral wealth and preparing a geological map to guide explorations which are expected to confirm scientific theories that the Andean region is rich in precious and commercial metals.

### United Nations Special Fund

| | |
|---|---|
| Land and Water Use Surveys for the Development of the Huara River Basin. FAO. (6/64; 3 yrs) | $1,742,500 |

### United Nations Technical Assistance Program

| | |
|---|---|
| Natural Resources, Development and Power. (62) | $915 |
| **T O T A L - United Nations Agencies** | $1,743,415 |

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| Isaac Tafur Hernández<br>San Marcos University<br>Carta Geológica Nacional | Economic geology, mineral evaluation | U. Arizona | 61-62 |
| Hugo Vásquez Rosas | Geology | U. Idaho | 64-65 |

### National Science Foundation

| | |
|---|---|
| University of California, Charles Paric, Jr.<br>Mineralogy-geochemistry and genesis of iron ore of Peru and Chile. (3/65; 2 yrs) | $18,300 |

| | |
|---|---|
| TOTAL: NATURAL RESOURCES | $1,761,715 |

## INDUSTRY AND BUSINESS ADMINISTRATION

### Inter-American Development Bank

Banco Industrial del Perú (62,63) — $7,500,000
Financing 100 projects (total cost: $28 million) in the following fields: food processing; textiles, wood, paper, cellulose and related industries; and the electrical, mechanical and chemical industries. Priority was given to enterprises which contribute to the most intensive utilization of natural resources, the creation of more employment opportunities, the substitution of imports and the decentralization of industry.

PERUINVEST (63) — $750,000
Finance between 20 and 50 industrial projects of private enterprise. IDB loan matched by equal amount from PERUINVEST.

T O T A L - IDB — $8,250,000

### Organization of American States

National Institute of Cooperatives (65; 3 mos) — $7,500
Advise on courses of administration of cooperative concerns on a regional level in the interior of the country. Three experts. The Government of Israel is cooperating in this program.

### International Labor Organization (UN)

Productivity and Management Development (61-65) — $52,005
Survey of productivity situation in Peru and establishment of a national productivity center at Lima.

### United Nations Technical Assistance Program

Industrial Development and Productivity (61-65) — $96,595
General economic study of the industrial development conditions and potentialities and expert advice to industries.

Manpower Organization, including Vocational Training (61-65) — $107,303
Project in the field of vocational training under which an ILO expert is advising the National Apprenticeship Service for Industry. (SENATI)

T O T A L - United Nations Agencies — $255,903

## INDUSTRY AND BUSINESS ADMINISTRATION

### Agency for International Development

**Private Enterprise Development (62-68)** . Spent thru 6/64: $968,000

To achieve an annual increase in industrialization sufficient to create 20,000 additional jobs each year. This project is designed to encourage industrial investment particularly in the depressed regions of Southern Peru, and raise the level of industrial competence. Provides technical assistance to the National Institute of Industrial Development and related organizations, preparation of prospectuses, feasibility studies, advice and assistance in the establishment of a technical research laboratory, expanded credit institutions and a stock market. Peruvian agencies involved: Ministry of Development and Public Works, National Institute for Industrial Development, Graduate School of Business Administration, CENIP, Peruvian Management Association. (Estimated total cost: $4,379,000)

Leland Stanford Jr. University - Graduate School of Business Administration (5/63-2/66) $929,040

Advise and assist in establishing new Graduate School of Business Administration (ESAN), including teaching and research on Peruvian business problems and intensive courses for business executives; Stanford will provide three professors per year and will provide graduate training for Peruvian professors in the U.S. (ESAN officially opened its first class at San Marcos University April 1964. Faculty from Stanford. Degree granted from university in which undergraduate work done.)

Stanford Research Institute (5/63-12/65) $874,969

Study of the industrial status of the Peruvian economy to determine the types of industries best suited to the country, identify foreign concerns willing to invest in these industries, and provide the necessary background information to the foreign concerns.

**T O T A L - Agency for International Development** $968,000

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| Catholic University | | | |
| Mauricio Hermán | Organ. of business administration schools | U. Pa, Wharton | 61-62 |
| H. Schenone Olcese | Ditto | U. Pa. | 61-62 |

TOTAL LOANS: $8,250,000
TOTAL GRANTS: $1,231,403

TOTAL: INDUSTRY AND BUSINESS ADMINISTRATION $9,481,403

## PUBLIC ADMINISTRATION

### United Nations Technical Assistance Program

Public Administration (61-64) $52,500

### Agency for International Development

Training & Advisory Services in Public Administration (62-68)
Spent thru 6/64: $714,000

To rebuild, expand and improve the Peruvian Institute of Public Administration (IPA) in order to upgrade governmental administration (particularly tax and customs administration). General reorganizational studies, similar to the Hoover report are being undertaken and GOP officials are receiving training that will reorient and assist them in their work. Peruvian agencies involved: Ministry of Finance and Commerce, National Office of Public Administration and Training (ONRAP). (Estimated total cost: $2,647,000)

Institute of Public Administration (N.Y.) - IPA (1/63-12/64) $2,500,000.

To assist in rebuilding the IPA and give intensive courses for Peruvian officials and employees in modern administrative practices.

| | |
|---|---|
| TOTAL: PUBLIC ADMINISTRATION | $766,500 |

## ECONOMICS AND PLANNING

### Inter-American Development Bank

**National Planning Institute (64) GRANT** — $43,000
Technical assistance through OAS-IDB-ECLA Tripartite Committee to improve Institute's organization and to prepare an economic analysis of Peru's economy and development studies, plans and projects.

### Organization of American States

**Government of Peru (62-65)** — $276,948
Advise GOP on planning of economic and social development. Assist in the organization and strengthening of a national mechanism for planning and cooperation in the preparation of national programs of development, total and by sectors, including the specific corresponding projects. Collaborate in the formulation of a diagnosis of the Peruvian economy, the determination of long-term development goals and inventory of national projects. The mission was composed of 33 experts.

**National Planning Institute (63; 1 mo)** — $2,767
Advise the Institute on economic censuses. Two experts.

**Junta de Rehabilitación y Desarrollo de Arequipa (60; 4 mos)**
Advise on banking organization in connection with programs of development and on administration of funds. One expert. — $ 6,461
Advise in the field of urbanism and housing. One expert. — $13,554

**T O T A L - Organization of American States** — $299,730

### Food and Agriculture Organization (UN)

**Economic Statistics and Analysis (61-65)** — $260,727
Expert to give assistance at the Census & Statistics Depts. of the Ministry of Planning and Commerce and collaborate in the plans for training and developing SIPA. Duties include development of programming already realized in order to obtain, if possible, concrete statistical data in the different branches of the national economy and desirability of activitating the national financing of these programs in order to achieve its aims.

## ECONOMICS AND PLANNING

United Nations Special Fund

Development of the Central Huallaga, Chiriyacu and Nievas River Basins. FAO. (6/64; 4 yrs) $2,977,100

The purpose of this project is to formulate a program of regional development in the Central Huallaga based on the detailed evaluation of the human and economic natural resources. Studies will be made on geomorphology, soils, geology, climatology, hydrology, forests, sociology and human resources, and economic regional diagnosis in the following sectors: agricultural, industrial, commercial, transportation. These studies will be at first of a general character; they will then be made in detail in selected zones.

United Nations Technical Assistance Program

| | |
|---|---|
| Economic Surveys. (61-62) | $3,951 |
| Economic Planning and Programming. (62-65) | $354,599 |
| T O T A L - United Nations Agencies | $3,596,377 |

Agency for International Development

National Economic Planning (62-67) Spent thru 6/64: $548,000

To create a national economic development plan & an organization within the GOP capable of stimulating, coordinating and giving over-all supervision to a comprehensive national development effort. The project has two phases: (1) Direct support for the National Planning Institute in the creation of a short-run action plan (3-year); a comprehensive long-range national plan (10-year) for economic and social development; and the coordination of development activities. It also supports regional and engineering officers, a number of short-term planning consultants and training of Peruvian technicians are being financed under this activity. (2) Assist the Natural Resources Evaluation Division of the National Planning Institute.

## ECONOMICS AND PLANNING

### Agency for International Development

National Economic Planning (continued)

Iowa State - Presidency, National Planning Institute
(63) $420,000
To assist in the evaluation of resources in the field of geography, geology, forestry, mineralogy, colonization, hydrology and soils -- basic to effective planning.

University of Michigan - Government of Peru (8/64-9/66)
$325,000.
Social & Economic Development. Aid Peru in development of Sample Survey Center which will collect socio-economic data to be used in formulation of programs.

National Planning Institute (LOAN, 1963) $3,000,000
Feasibility Studies. To support further economic development & development planning in Peru by financing economic & engineering feasibility studies, including preliminary plans, specifications and cost estimates on specific high priority development projects. The loan agreement stipulates that the studies will be carried out within the fields of water supply, sewage disposal, irrigation & drainage, agriculture, electric power, education, health, river improvement, flood control, industry & housing. A joint planning team from OAS/IDB/ECLA assisted the Institute prepare a project inventory.

GRANTS: $548,000
LOANS: $3,000,000
T O T A L - Agency for International Development $3,548,000

### Rockefeller Foundation

National Engineering University, Planning Institute of Lima
Research on the legal & administrative aspects of planning legislation in Peru, under the direction of Dr. Carlos Zuzunaga, professor of planning legislation. (62; 2 yrs) $10,000

Library books on urban & regional planning. (62,63) $7,265

T O T A L - Rockefeller Foundation $17,265

Fellowships:

| | | | |
|---|---|---|---|
| Abraham Febres C.<br>Agrarian U. | Economics | USA | 1963 |
| Julio Arroyo V.<br>SIPA, Tingo María | Experimental Statistics | USA | 1962 |

## ECONOMICS AND PLANNING

| | |
|---|---|
| TOTAL LOANS: | $3,000,000 |
| TOTAL GRANTS: | $4,504,372 |
| TOTAL: ECONOMICS AND PLANNING | $7,504,372 |

## TRANSPORTATION AND COMMUNICATION

### World Bank

Highways (61) — $10,000,000

To enable Peru to import equipment and materials for highway maintenance and improvement and to assist in a study of the highway network and future traffic needs now being carried out under the sponsorship of the World Bank and the GOP.

### Inter-American Development Bank

Government of Peru - Highway Studies (64) — $475,000

This loan will finance 85% of the cost of pre-investment studies for the construction of two highways in the country: the 66-mile Jaén-San Ignacio road in northern Peru and the 115-mile road between the Inambari bridge and Puerto Maldonado, in southeast Peru. Seven other projects will be studied by the World Bank and four by the Agency for International Development. The Peruvian Government has drafted a national highway plan for the 1965-68 period which includes 13 projects for the construction or repair of highways with a total length of more than 1,700 miles to accelerate the integration of rural areas into the national economy. The total cost of the highway construction program is estimated at $130 million of which up to 60% would come from local sources and the remainder from international sources. The feasibility studies must be undertaken before the latter financing is secured.

### International Civil Aviation Organization (UN)

Civil Aviation School of Collique (61-65) — $239,931

Fellowship assistance and advice to the school. A director was recruited to initiate the training program. The school plans to train commercial pilots, aircraft maintenance mechanics and radio mechanics, and is open to foreign students alghough only 18 have participated so far. At the end of 1965, 83 Peruvians had graduated from the school and 37 were enrolled.

## TRANSPORTATION AND COMMUNICATION

### International Telecommunication Union (UN)

| | |
|---|---|
| Telecommunications (63,64) | $41,895 |

### United Nations Technical Assistance Program

| | |
|---|---|
| Transport and Communications (64) | $17,540 |
| T O T A L - United Nations Agencies | $299,366 |

### Agency for International Development

Transportation Development (62-70) Spent thru 6/64: $414,000

To develop an adequate transportation system to support the development of Peru and to create a unified economic, social and political entity. U.S. technicians from the Bureau of Public Roads are assisting the Peruvian Highway Department in road planning, design, construction, improvement and maintenance. Another activity provides similar support from the Federal Aviation Authority to the Peruvian Aviation Agency in expanding air services, especially in the outlying regions where aircraft constitute the only means of transportation. Peruvian agencies involved: Ministry of Development and Public Works, Peruvian Corporation of Airports and Commercial Aviation (CORPAC). (Estimated total cost: $1,131,000)

| | |
|---|---|
| TOTAL LOANS: | $10,475,000 |
| TOTAL GRANTS: | $713,366 |
| TOTAL: TRANSPORTATION AND COMMUNICATION | $11,188,366 |

## SOCIOLOGY

### Organization of American States

National Planning Institute (65; 4 mos) $5,655
Advise on demographic analysis. One expert

### UNESCO

Teaching of Social Sciences (FLACSO). (65) $3,600

Assistance to Universities (61-64) $35,641
Expert to teach sociology in the new Department of Sociology in San Marcos University and direct the center of sociological research which is to be created.

### United Nations Technical Assistance Program

Population. (64) $13,200

T O T A L - United Nations Agencies

### Fulbright Fellowships

| | | | |
|---|---|---|---|
| R. Rodríguez Farje<br>San Marcos U. | Industrial labor relations | Cornell | 61-62 |
| Ricardo Caceres Hornet<br>University of Arequipa | Industrial sociology | Michigan State | 63-64 |

### Ford Foundation

Center of Studies on Population & Development (64; 3-1/2 yrs) $282,000
Partial support for staff and research; fellowships and technical advisory services.

## SOCIOLOGY

### Rockefeller Foundation

**Fellowships:**

| | | | |
|---|---|---|---|
| Gabriel Escobar M.<br>University of Huamanga | Sociology | USA | 1963 |

**Appointed while at Cornell:**

| | | | |
|---|---|---|---|
| Abner Montalvo Vidal | Sociology | USA | 1963 |
| Carlos Delgado Olivera | Sociology | USA | 1964 |

### Ford, Rockefeller Foundations and Carnegie Corporation

Cornell University. Dr. J. Mayone Stycos, Director
This project conducts research in political behavior, social psychology, comparative public administration, and population problems in Peru, Chile, Bolivia, Colombia and Ecuador.

| | |
|---|---|
| Ford Foundation (62; 5 yrs): | $250,000 |
| Rockefeller Foundation (61): | 155,000 |
| Carnegie Corporation (59; 5 yrs): | 250,000 |
| | $655,000 |

### National Science Foundation, et. al.

Cornell University. Dr. William Foote Whyte, Director
Series of comparative studies in industrial organizations, in high schools, and in rural communities. The aim of the project is to provide systematic data upon culture, organizational behavior, and economic growth in developing countries. Field work has been done so far primarily in Peru, but comparative data on some aspects are now available from U.S. studies.

| | |
|---|---|
| National Science Foundation (64; 3 yrs): | $88,000 |
| New World Foundation (63): | 3,500 |
| Agricultural Development Council (64): | 8,700 |
| Cornell University (62-64) | 20,000 |
| Nat'l. Inst. of Mental Health grant | |
| Fulbright Fellowships for Whyte | |
| | $120,200 |

| | |
|---|---|
| TOTAL: SOCIOLOGY | $1,115,296 |

## EDUCATION AND GENERAL SCIENCE DEVELOPMENT

### Inter-American Development Bank

San Marcos University (64) — $1,500,000
To finance half the cost of a project to equip a post-graduate Department of Basic Sciences which will offer advanced instruction in mathematics, chemistry, physics, biology, & other natural sciences. The Department will train professors specializing in these fields. The project also includes the purchase of teaching aids to raise the level of instruction in elementary courses offered by the Schools of Science and Chemistry. $120,000 of the IDB loan is for technical assistance. The University will finance 21% of the cost of the project and external sources, including AID and Ford, will provide 29%.

Catholic University — $8,000
Assistance related to administrative practices.

Expert on advanced education to work with UNESCO mission in Peru which is making a study in this field. — $8,600

T O T A L - Inter-American Development Bank — $1,516,600

### UNESCO

Educational Services (61-65) — $95,102
To improve the standard of teacher training at the primary, secondary & technical level in two institutes, and to improve the standard of a large number of existing non-graduate primary teachers.

Technical Education (61-64) — $31,257
The GOP desires to develop its technical education program. Among measures adopted to implement the program, the introduction of technical subjects in secondary schools & the establishment of more technical schools given priority.

Rural Education (61-62) — $13,465

Teaching of Scientific Research (61-64) — $45,646

Educational Planning (62-65) — $53,901
The Ministry of Finance & Commerce has established a Central Planning Office and the Ministry of Education has proposed a the development of a National Planning System and has suggested guidance from UNESCO. A UNESCO expert will work in close cooperation with the Pedagogical Coordinator of the Ministry of Education in developing a National Planning System.

## EDUCATION AND GENERAL SCIENCE DEVELOPMENT

United Nations Special Fund

National Instructor Training Center (12/59; 4 yrs) ILO $734,100
This project is providing three distinct types of training: for industrial instructors in urban areas, for artisans in both urban and rural areas, and for specific rural training to help Indian communities. The Institute at the present time has 94 full-time students and is also offering a number of short-term courses.

T O T A L - United Nations Agencies $973,471

Agency for International Development

Basic Education Reform and Development (62-72) Spent thru 6/64: $776,000
Expansion and improvement of the public education system. Project activities include the reorganization of public education administration, expansion of basic educational facilities, improvement of teacher training and industrial/ vocational education. (Estimated total cost: $6,859,000)

Columbia U. Teachers College - Ministry of Education (4/63-12/66) $1,187,500
Professional consultancy to Ministry to plan and organize an educational program geared to the nation's economic needs. Also, contractor will give aid and direction to revitalizing the National Commission for Education.

Improvement and Expansion of Higher Education (62-66) Thru 6/63: $31,000
To strengthen university level education, especially in professional & technical fields which will support economic development efforts. Activity targets of this project include strengthening the present Council of University Rectors, improving university organization, administration, curriculum, teaching staff and materials. Project initiated in FY62 with an initial survey of university needs and problems. In FY63, $37,000 was made available for participant training in the U.S. In FY64, it was planned to expand activities under this project by providing expert consultants to major Peruvian universities thru the Council of University Rectors in selected fields which closely relate to human resource needs for economic development. U.S. training of Peruvian staff. (Obligations thru FY64: $171,000)

T O T A L - Agency for International Development $807,000

## EDUCATION AND GENERAL SCIENCE DEVELOPMENT

### National Science Foundation

Participants in NSF Summer Institutes

| | | | |
|---|---|---|---|
| Marcela Ajello | General Science | Maryland U. | 1960 |
| Cesar Cruz Saco | Multiple Field | U. Puerto Rico | 1962 |
| Anita Hurtado | Multiple Field | U. Puerto Rico | 1964 |
| Carlos Velazco | Multiple Field | U. Puerto Rico | 1964 |

### Ford Foundation

| | |
|---|---|
| Agrarian University (65) | $618,000 |
| Development of the science departments. The objective of this grant is to bring up the levels of instruction and research in chemistry, biology, mathematics & physics. The project will involve faculty and student exchanges. The University of Wisconsin will administer the grant through the Midwest Universities Consortium for International Activities. | |
| San Marcos University | |
| Development of the graduate sciences program. (10/63-10/66) | $252,000 |
| Modernization of the administration of the Univ. (6/64-6/67) | $243,000 |
| Development of general studies program. (7/64-7/65) | $27,800 |
| San Martin, Rector, to visit universities in U.S. | $1,300 |
| Catholic University | |
| Support for academic, administrative & financial development of the University. (7/65-1/69) | $567,700 |
| Conference to discuss exchange of faculty members among Latin American universities. | $4,000 |
| National Engineering University | |
| Strengthening of the educational program of the University. (3/64-3/68) | $570,000 |
| TOTAL - Ford Foundation | $2,283,800 |

TOTAL LOANS: $1,516,600
TOTAL GRANTS: $4,064,271

TOTAL: EDUCATION AND GENERAL SCIENCE DEVELOPMENT $5,580,871

P E R U

AGENCIES CONTRIBUTING TO PROGRAMS AND ACTIVITIES RELATING T

1963 - 1964

| AGENCIES | NATURAL SCIENCES | | SOCIAL SCIENCES | AGRICULTURAL SCIENCES | MEDICAL SCIENCES and PUBLIC HEALTH | IN DI |
|---|---|---|---|---|---|---|
| | Basic Sciences | Applied Sciences | | | | |
| FORD | 252,000 | 570,000 | | 300,000 | | |
| AID | | | 769,500 | 1,000,000 | | |
| IDB | | 2,500,000 | | 2,000,000 | | |
| ROCKEFELLER | 4,000 | 4,500 | 41,470 | 978,961 | 128,394 | |
| OAS | 14,750 | 63,000 | 121,000 | 229,000 | 31,000 | |
| STATE Dept. | 80,034 | 128,595 | 56,494 | 21,524 | 54,204 | |
| NIH | | | | | 854,084 | |
| PAHO | | | | | 21,500 | |
| KELLOGG | | | | | 15,509 | |
| US AIR FORCE | 57,500 | | | | | |
| GUGGENHEIM | 5,000 | | 6,000 | | | |
| TOTALS by Disciplines | 413,284 | 3,266,095 | 994,464 | 4,529,485 | 1,104,691 | 3 |

GRAND TOTAL by Disciplines and Agencies

P E R U

AGENCIES CONTRIBUTING TO PROGRAMS AND ACTIVITIES RELATING TO

1963 - 1964

| AGENCIES | NATURAL SCIENCES | | SOCIAL SCIENCES | AGRICULTURAL SCIENCES | MEDICAL SCIENCES and PUBLIC HEALTH | INST DEV |
|---|---|---|---|---|---|---|
| | Basic Sciences | Applied Sciences | | | | |
| FORD | 252,000 | 570,000 | | 300,000 | | 3 |
| AID | | | 769,500 | 1,000,000 | | |
| IDB | | 2,500,000 | | 2,000,000 | | |
| ROCKEFELLER | 4,000 | 4,500 | 41,470 | 978,961 | 128,394 | |
| OAS | 14,750 | 63,000 | 121,000 | 229,000 | 31,000 | |
| STATE Dept. | 80,034 | 128,595 | 56,494 | 21,524 | 54,204 | |
| NIH | | | | | 854,084 | |
| PAHO | | | | | 21,500 | |
| KELLOGG | | | | | 15,509 | |
| US AIR FORCE | 57,500 | | | | | |
| GUGGENHEIM | 5,000 | | 6,000 | | | |
| TOTALS by Disciplines | 413,284 | 3,266,095 | 994,464 | 4,529,485 | 1,104,691 | 3 |

GRAND TOTAL by Disciplines and Agencies

September 2, 1972

MEMO TO: Files

FROM: Roy T. Powell

SUBJECT: NAS Fire Alarm System

Present alarm system in the East and West Wings are Ellenco, No. NV-1, Scr. DC 33. This is a supervised system that causes all alarm bells within the system to ring continuously and gives no indication of the location of the station pulled. There are 8 stations within the system, 3 East 5 West.

The Auditorium Building is equipped with Edwards Co. coded alarm system with 19 stations.

The Main Building is not equipped with a fire alarm system.

To convert the 8 non-coded stations to coded stations will cost approximately $875.00.

Cost Breakdown:

| | |
|---|---|
| 8 Coded Station pulls, @ $52.50. . . . . | $420.00 |
| 8 Coded Station wall boxes @ $5.00 . . . . . | 40.00 |
| Supervision of conversion and final testing by Amplotron Inc., @ $5.00/station . . . . . | 40.00 |
| Removal of old equipment and installation of new, using inhouse labor, 50 MH @$6.00 per hour. . . . . | 300.00 |
| Contingence . . . . . | 75.00 |
| Total. . . . . | $875.00 |

RTP/m

## Index by Agency

### INTERNATIONAL ORGANIZATIONS

## U. S. GOVERNMENT

PRIVATE FOUNDATIONS

# P E R U

## GROSS DOMESTIC PRODUCT
(in millions of soles at 1960 prices)

| Sector | 1950 | 1960 | 1961 | 1962 | 1963[a] | 1964[b] | 1965[b] |
|---|---|---|---|---|---|---|---|
| Agriculture | 8,860 | 11,317 | 12,313 | 13,558 | 13,445 | 13,998 | 14,894 |
| Fishing | 167 | 785 | 1,010 | 1,207 | 1,140 | 1,266 | 1,428 |
| Mining | 1,830 | 4,908 | 5,222 | 4,942 | 5,286 | 5,447 | 6,007 |
| Industry | 5,348 | 10,467 | 11,513 | 12,508 | 13,209 | 13,952 | 14,831 |
| Construction | 1,179 | 1,768 | 2,086 | 2,472 | 2,645 | 2,921 | 3,041 |
| Transportation and Communication | 1,586 | 3,009 | 3,193 | 3,422 | 3,596 | 3,816 | 4,004 |
| Housing | 3,200 | 4,470 | 4,626 | 4,796 | 5,011 | 5,261 | 5,514 |
| Commerce & Financing | 6,562 | 11,342 | 12,664 | 13,821 | 14,366 | 15,167 | 16,138 |
| Government | 3,488 | 4,291 | 4,643 | 4,931 | 5,205 | 5,527 | 6,544 |
| Other Services | 2,189 | 3,293 | 3,512 | 3,621 | 3,747 | 3,915 | 3,733 |
| TOTAL | 34,409 | 55,650 | 60,782 | 65,260 | 67,650 | 71,270 | 75,546 |

Source: National Planning Institute

[a]Provisional figures.

[b]Preliminary estimate by the National Planning Institute. (There is a tendency for the private sector to underestimate and the public sector to overestimate.)

PUBLIC EXPENDITURES BY FUNCTION
(in millions of current soles)

| Functions | | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966[1] |
|---|---|---|---|---|---|---|---|---|
| General Services | Total | 2,842 | 3,419 | 4,345 | 5,375 | 5,920 | 2,136 | 6,388 |
| Social Services | | | | | | | | |
| Education | Operating Expenses | 1,407 | 1,855 | 2,350 | 2,949 | 3,531 | 4,118 | 5,018 |
| | Investments | 60 | 192 | 150 | 160 | 309 | 416 | 674 |
| | Total | 1,467 | 2,047 | 2,500 | 3,109 | 3,840 | 4,534 | 5,692 |
| Health | Operating Expenses | 376 | 565 | 600 | 995 | 1,516 | 1,822 | 1,874 |
| | Investments | 60 | 35 | 199 | 531 | 596 | 565 | 848 |
| | Total | 436 | 600 | 799 | 1,526 | 2,112 | 2,387 | 2,722 |
| Housing and Community Development | Operating Expenses | 192 | 232 | 280 | 360 | 153 | 352 | 262 |
| | Investments | 204 | 726 | 597 | 468 | 867 | 1,299 | 918 |
| | Total | 396 | 958 | 877 | 828 | 1,020 | 1,651 | 1,180 |
| Labor and Social Security | Operating Expenses | 1,154 | 1,320 | 1,500 | 1,930 | 2,665 | 2,948 | 3,036 |
| | Investments | 7 | 1 | - | - | - | 8 | - |
| | Total | 1,161 | 1,321 | 1,500 | 1,930 | 2,665 | 2,956 | 3,036 |
| Economic Services | | | | | | | | |
| Agriculture | Operating Expenses | 131 | 174 | 210 | 380 | 480 | 659 | 660 |
| | Investments | 111 | 180 | 262 | 336 | 639 | 655 | 1,396 |
| | Total | 242 | 354 | 472 | 716 | 1,119 | 1,314 | 2,056 |
| Energy | Operating Expenses | 12 | 26 | 26 | 45 | - | 24 | 24 |
| | Investments | 89 | 131 | 348 | 593 | 483 | 536 | 421 |
| | Total | 101 | 157 | 374 | 638 | 483 | 560 | 445 |
| Industry | Operating Expenses | 30 | 35 | 40 | 50 | - | 83 | 83 |
| | Investments | 6 | 14 | 295 | 929 | 2,171 | 2,021 | 1,000 |
| | Total | 36 | 49 | 335 | 979 | 2,171 | 2,104 | 1,083 |

[1]The 1966 budget has been approved since publication of the source material. The approved budget may differ from the figures quoted here.

| Functions | | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
|---|---|---|---|---|---|---|---|---|
| Transportation and Communication | Operating Expenses | 33 | 33 | 36 | 41 | - | 155 | 105 |
| | Investments | 514 | 350 | 715 | 716 | 910 | 1,330 | 1,142 |
| | Total | 547 | 383 | 751 | 757 | 910 | 1,485 | 1,247 |
| Other Economic Services | Total | 36 | 81 | 75 | 69 | 605 | 482 | 614 |
| Cooperación Popular[2] | Operating Expenses | - | - | - | - | - | - | - |
| | Investments | - | - | - | - | - | - | 392 |
| | Total | - | - | - | - | - | - | 392 |
| Unclassifiable | Total | 2,509 | 2,984 | 4,036 | 6,859 | 8,424 | 8,881 | 9,296 |
| | TOTAL | 11,913 | 14,570 | 18,683 | 24,648 | 30,748 | 34,537 | 36,418 |

Source: National Planning Institute, Programa de Inversiones Públicas 1966: Documento de Trabajo, Vol. I, April 1965.

[2]This program, established in August 1963 by President Belaúnde, is patterned on the U.S. Peace Corps and is an attempt to teach the nation's 12 million Indians to help themselves and to integrate them into the national fabric. College students on vacation, as well as full-time engineers, technicians and public health experts are assisting in the program.

PERU

Major Imports by Commodity

| | 1963 | 1964 | | |
|---|---|---|---|---|
| | US$1,000 | US$1,000 | M. Tons | % of Total $ |
| on-Electrical Machinery & Apparatuses | 111,984 | 108,400 | 65,287 | 18.7 |
| tor Vehicles & Other Transport Equipment | 78,552 | 82,400 | 53,016 | 14.2 |
| lectrical Machinery & Apparatuses | 47,667 | 44,400 | 19,660 | 7.6 |
| rains | 29,530 | 43,400 | 465,358 | 7.5 |
| hemical and Pharmaceutical Products | 37,593 | 43,000 | 77,152 | 7.4 |
| ron and Steel Mill Products | 26,164 | 29,000 | 140,616 | 5.0 |
| nufactures of Base Metals | 22,992 | 23,330 | 23,220 | 4.2 |
| nspecified Manufactured Products | 23,776 | 27,200 | 15,249 | |
| uels and Lubricants | 18,022 | 20,800 | 808,885 | |
| ood Pulp, Paper and Manufactures | 13,185 | 15,100 | 75,238 | |
| airy Products | 8,334 | 12,600 | 25,473 | |
| nimal and Vegetable Fats and Oils | 5,302 | 9,600 | 39,177 | |
| pecial and Technical Textile Products | 16,492 | 9,300 | 4,814 | |
| anning and Dyeing Products | 7,026 | 7,900 | 15,600 | |
| ertilizers | 6,142 | 7,300 | 122,546 | |
| ivestock for Slaughter | 19,806 | 7,300 | 20,162 | |
| aw and Semi-Processed Textile Products | 6,413 | 7,000 | 6,806 | |
| eat and Meat Products | 5,353 | 6,900 | 13,111 | |
| ubber and Manufactures | 5,915 | 6,000 | 5,725 | |
| ood, Cork and Manufactures | 5,915 | 5,300 | 56,948 | |
| extile Manufactures, except Clothing | 8,107 | 4,800 | 12,395 | |
| ruits and Nuts, except Oil-Bearing Nuts | 4,213 | 4,700 | 28,027 | |
| on-Ferrous Metals and Manufactures | 4,029 | 4,300 | 57,112 | |

| | 1963 | 1964 | |
|---|---|---|---|
| | US$1,000 | US$1,000 | M. Tons |
| Essential Oils, Perfumery and Cosmetics | 3,577 | 3,700 | 3,036 |
| Tobacco and Manufactures | 4,633 | 3,400 | 1,063 |
| Textiles and Small Textiles Manufactures | 3,929 | 3,300 | 1,486 |
| Cereal By-Products, Edible | 3,689 | 3,300 | 23,328 |
| Glass and Glassware | 2,747 | 3,300 | 6,827 |
| Ceramic Products | 1,949 | 3,000 | 7,233 |
| Gold and Gold Coins | 3,999 | 8,800 | 7 |
| Other Commodities | 20,027 | 20,800 | |
| TOTAL | 557,062 | 579,600 | 2,221,554 |
| | | | |
| Total Value in Millions of Soles: | 14,940.4 | 15,545.7 | |

Value figures source: Basic Data on the Economy of Peru, OBR 65-46, Bureau of International Commerce, Department of Commerce

Quantity figures source: Boletín del Banco Central de Reserva del Peru, Lima, July 1965.

PERU

## Major Exports by Commodity

| | 1963 | | 1964 | |
|---|---|---|---|---|
| | Metric Tons | US$1,000 | US$1,000 | % of Total $ |
| Fish Meal | 1,038,270 | 104,530 | 143,400 | 20.0 |
| Copper | 203,727 | 87,289 | 103,000 | 15.4 |
| Cotton, Raw | 124,614 | 91,065 | 90,900 | 13.3 |
| Sugar | 495,793 | 63,164 | 63,500 | 9.5 |
| Silver | 559 | 35,802 | 45,300 | 6.8 |
| Zinc | 308,649 | 15,829 | 39,100 | 5.8 |
| Iron Ore | 5,748,663 | 36,456 | 38,900 | 5.8 |
| Coffee | 40,073 | 25,573 | 37,000 | 5.5 |
| Lead | 183,689 | 16,409 | 33,000 | |
| Fish Oil | 125,477 | 8,106 | 14,100 | |
| Fish, Fresh, Frozen, Smoked, etc. | 26,616 | 7,793 | 8,400 | |
| Petroleum, Crude | 509,438 | 6,491 | 7,000 | |
| Alpaca Hair | 3,811 | 7,085 | 6,600 | |
| Wool | 4,195 | 4,126 | 4,400 | |
| Bismuth | 541 | 2,193 | 3,300 | |
| Other Commodities | | 29,332 | 29,090 | |
| TOTAL | 9,202,569 | 541,241 | 666,990 | |
| Total value in million of soles: | | 14,516.1 | 17,888.7 | |

Dollar figures source: Basic Data on the Economy of Peru, OBR 65-46
Bureau of International Commerce, Department of Commerce

Quantity figures source: Estadistica del Comercio Exterior: 1963, Ministerio de Hacienda y Comercio, Lima.

## 3.3 DESAGREGACION SECTORIAL DEL PRODUCTO BRUTO INTERNO

El proceso de crecimiento económico se caracteriza por cambios continuos en la estructura de la producción nacional. Ciertos sectores de producción resultan más dinámicos que otros de modo que su parte en el producto nacional aumenta en relación con los demás. El cuadro siguiente muestra los cambios que ha experimentado la economía peruano en el pasado reciente, según datos oficiales del Instituto Nacional de Planificación.

CUADRO N° 3-03.- COMPOSICION DEL PRODUCTO BRUTO INTERNO POR SECTORES ECONOMICOS, 1950-1964.

| Sectores económicos | PBI en millones de Soles (a precios constantes - 1960) | | | | Composición porcentual | | | |
|---|---|---|---|---|---|---|---|---|
| | 1950 | 1955 | 1960 | 1964 | 1950 | 1955 | 1960 | 1964 |
| Agropecuario | 8.660 | 9.787 | 11.317 | 13.998 | 25.7 | 22.2 | 20.4 | 19.6 |
| Pesquería | 167 | 238 | 785 | 1,266 | 0.5 | 0.5 | 1.4 | 1.8 |
| Extracción | 1.831 | 2,793 | 4,908 | 5,448 | 5.3 | 6.3 | 8.8 | 7.6 |
| Industria | 5,349 | 7,777 | 10,467 | 13,952 | 15.6 | 17.6 | 18.8 | 19.6 |
| Construcción | 1.179 | 1,955 | 1,768 | 2,921 | 3.4 | 4.4 | 3.2 | 4.1 |
| Energía | a/ | a/ | 214 | 314 | a/ | a/ | 0.4 | 0.4 |
| Transportes | 1.586 | 2,393 | 3,009 | 3,816 | 4.6 | 5.4 | 5.4 | 5.3 |
| Comercio | 5.512 | 7,452 | 9,280 | 12,528 | 16.0 | 16.9 | 16.7 | 17.6 |
| Banca, Seguros | 1,050 | 1.635 | 2,062 | 2,639 | 3.1 | 3.7 | 3.7 | 3.7 |
| Vivienda | 3.201 | 3.661 | 4,470 | 5,261 | 9.3 | 8.3 | 8.0 | 7.4 |
| Gobierno | 3.489 | 3,767 | 4,291 | 5,527 | 10.1 | 8.5 | 7.7 | 7.8 |
| Servicios | 2,187 b/ | 2,704 b/ | 3,079 | 3.602 | 6.4 b/ | 6.2 b/ | 5.5 | 5.1 |
| Total | 34.411 | 44,162 | 55,650 | 71,272 | 100.0 | 100.0 | 100.0 | 100.0 |
| Grandes Sectores: | | | | | | | | |
| - Primario | | | | | 31.6 | 29.0 | 30.6 | 29.1 |
| - Secundario | | | | | 23.6 | 27.5 | 27.7 | 29.5 |
| - Terciario | | | | | 44.8 | 43.5 | 41.7 | 41:4 |

NOTAS: a/ Está incluida en Servicios
b/ Incluye energía.

CUADRO N° 3-07.- COMPOSICION DEL PRODUCTO BRUTO INTERNO POR SECTORES ECONOMICOS, PROYECCIONES 1965-1980

| Sectores Económicos | PBI en millones de soles (a precios constantes 1960) | | | | Composición Porcentual | | | |
|---|---|---|---|---|---|---|---|---|
| | 1965 | 1970 | 1975 | 1980 | 1965 | 1970 | 1975 | 1980 |
| Agropecuario | 14,505 | 19,179 | 24.648 | 31,032 | 19.2 | 18.1 | 16.9 | 15.8 |
| Pesquería | 1,435 | 2,013 | 2.479 | 3,123 | 1.9 | 1.9 | 1.7 | 1.6 |
| Extracción | 5,817 | 7,823 | 10.463 | 13,076 | 7.7 | 7.1 | 6.9 | 6.6 |
| Industrias | 14,882 | 22.145 | 32.961 | 49.476 | 19.7 | 20.9 | 22.6 | 25.2 |
| Construcción | 3,248 | 5.510 | 8,751 | 12.686 | 4.3 | 5.2 | 6.0 | 6.4 |
| Energía | 346 | 578 | 978 | 1.648 | 0.5 | 0.6 | 0.7 | 0.8 |
| Transportes | 4,004 | 6,040 | 8,900 | 12,686 | 5.3 | 5.7 | 6.1 | 6.4 |
| Comercio | 13,296 | 18,755 | 25,377 | 33,179 | 17.6 | 17.7 | 17.4 | 16.8 |
| Banca, Seguros | 2,721 | 3.821 | 5.258 | 7,037 | 3.6 | 3.6 | 3.6 | 3.6 |
| Vivienda | 5,514 | 6,881 | 8,551 | 10,645 | 7.3 | 6.5 | 5.8 | 5.4 |
| Gobierno | 6,044 | 8,689 | 12.272 | 16,199 | 8.0 | 8.2 | 8.3 | 8.2 |
| Servicios | 3,733 | 4,526 | 5,310 | 6,239 | 4.9 | 4,5 | 4.0 | 3.2 |
| Total | 75,545 | 105,960 | 145,948 | 197,026 | 100.0 | 100.0 | 100.0 | 100.0 |
| Grandes sectores: | | | | | | | | |
| - Primario | | | | | 28.8 | 27.4 | 25.8 | 24.0 |
| - Secundario | | | | | 29.8 | 32.3 | 35.3 | 38.8 |
| - Terciario | | | | | 41.4 | 40.3 | 38.9 | 37.2 |

CUADRO N° 3-20 DISTRIBUCION DE LA POBLACION ACTIVA POR SECTORES ECONOMICOS SEGUN SEXO, AREA Y GRUPOS DE EDAD.

| SECTORES ECONOMICOS | Empleo (En miles de personas) | Distribución (%) | Hombres (%) | Urbano (%) | COMPOSICION POR GRUPOS DE EDAD | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Hasta 14 Años | 15-24 | 25-44 | 45 Años y más |
| AGROPECUARIO | 1,534.1 | 49.2 | 85.9 | 17.6 | 2.7 | 26.2 | 41.5 | 29.6 |
| PESQUERIA | 21.1 | 0.7 | 98.7 | 76.2 | 0.8 | 32.1 | 51.0 | 16.0 |
| EXTRACCION | 66.3 | 2.1 | 97.5 | 44.5 | 0.3 | 27.3 | 57.2 | 15.2 |
| INDUSTRIAS MANUFACTURERAS | 410.9 | 13.2 | 71.8 | 74.1 | 0.7 | 30.1 | 47.4 | 21.8 |
| ALIMENTICIAS | 52.2 | 1.7 | 86.8 | 85.1 | 1.0 | 32.4 | 46.3 | 20.3 |
| TEXTILES Y CONFECCION | 191.8 | 6.1 | 48.0 | 62.0 | 0.8 | 28.9 | 45.9 | 24.4 |
| QUIMICAS Y PETROLEO | 14.4 | 0.5 | 81.2 | 88.4 | 0.2 | 35.5 | 50.8 | 13.5 |
| METALURGIA | 55.7 | 1.8 | 98.4 | 90.4 | 0.5 | 34.4 | 49.2 | 16.0 |
| OTROS | 96.8 | 3.1 | 94.1 | 80.9 | 0.5 | 28.1 | 49.5 | 22.0 |
| CONSTRUCCION | 104.7 | 3.4 | 99.0 | 82.4 | 0.3 | 25.2 | 53.8 | 20.7 |
| ENERGIA | 8.6 | 0.3 | 95.4 | 88.1 | 0.6 | 19.2 | 53.4 | 26.9 |
| TRANSPORTE | 93.9 | 3.0 | 95.2 | 90.0 | 0.2 | 18.0 | 59.5 | 22.3 |
| COMERCIO | 263.0 | 8.4 | 71.0 | 85.2 | 0.8 | 25.9 | 48.8 | 24.5 |
| BANCA-SEGURO | 18.8 | 0.6 | 82.8 | 97.4 | 0.2 | 20.0 | 62.4 | 17.5 |
| GOBIERNO | 115.7 | 3.7 | 92.2 | 92.1 | - | 37.3 | 45.2 | 17.5 |
| EDUCACION | 65.9 | 2.1 | 41.8 | 84.6 | 0.2 | 18.2 | 61.4 | 20.3 |
| OTROS SERVICIOS | 295.1 | 9.5 | 36.5 | 87.3 | 11.3 | 42.6 | 33.0 | 13.2 |
| NO ESPECIFICADOS a/ | 123.0 | 3.9 | 79.7 | 75.4 | 0.8 | 51.3 | 33.5 | 14.5 |
| TOTAL | 3,120.8 | 100.0 | 78.2 | 49.8 | 2.6 | 29.2 | 43.8 | 24.3 |

a/ Incluye a desocupados (49.1 mil), aspirantes a trabajador y trabajadores que no especificaron el sector de su actividad económica.

CUADRO Nº 3-21 DISTRIBUCION DE LA POBLACION ECONOMICAMENTE ACTIVA POR SECTORES ECONOMICOS Y CATEGORIAS OCUPACIONALES, 1961

(En Miles de personas)

| CATEG. OCUP. / SECT. ECONOM. | PROF. CIENTIF. TECNIC. | PROF.NO CIENTI. NO TEC. | SUB-PROFESIONALES | DIRECT. GERENT. | OFICIN. | VENDEDORES | OBREROS CALIFICADOS | OBREROS SEMI CALIFICA. | TRABAJAD. FAMILIARES | OBREROS NO CALIFICADOS | NO ESPECIFICADO | MILITARES | RELIG. | TOTALES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGROPECUAR. | 0.85 | 0.35 | 0.55 | 794.00 | 2,85 | 0.25 | 1.55 | 17.90 | 257.85 | 457.35 | 0.55 | - | - | 1,534.05 |
| PESQUERIA | 0.03 | 0.05 | 0.19 | 0.21 | 0.25 | 0.03 | 0.09 | 19.67 | - | 0.48 | 0.09 | 0.01 | - | 21.07 |
| EXTRACCION | 0.93 | 0.43 | 0.86 | 3.20 | 4.00 | 0.38 | 4.33 | 10.89 | - | 40.36 | 0.90 | 0.05 | - | 66.31 |
| INDUSTRIAS MAN | 1.06 | 1.37 | 2.50 | 8.84 | 12.25 | 4.85 | 65.42 | 204.65 | 0.02 | 104.72 | 5.26 | 0.06 | 0.02 | 410.89 |
| ALIMENTIC. | 0.17 | 0.31 | 0.18 | 2.38 | 3.09 | 1.90 | 2.57 | 28.71 | - | 10.85 | 2.03 | 0.01 | 0.01 | 52.19 |
| TEXTILES | 0.13 | 0.32 | 0.09 | 1.72 | 2,50 | 0.69 | 37.65 | 78.32 | 0.02 | 69.75 | 0.60 | 0.01 | - | 191.77 |
| PROD.QUIM. | 0.42 | 0.21 | 0.95 | 0.76 | 1.83 | 0.93 | 0.51 | 5.10 | - | 3.13 | 0.58 | 0.01 | - | 14.40 |
| METALURGIA | 0.21 | 0.14 | 0.09 | 1.02 | 1.19 | 0.16 | 9.84 | 36.29 | - | 6.24 | 0.54 | 0.01 | - | 55.71 |
| OTRAS | 0.13 | 0.39 | 1.19 | 2.96 | 3.64 | 1.17 | 14.85 | 56.23 | - | 14.75 | 1.51 | 0.02 | 0.01 | 96.82 |
| CONSTRUCCION | 1.73 | 0.13 | 0.54 | 2.19 | 1.19 | 0.06 | 6.00 | 72.01 | 0.01 | 20.39 | 0.40 | - | - | 104.65 |
| ENERGIA | 0.09 | 0.11 | 0.06 | 0.47 | 1.18 | 0.06 | 1.97 | 0.97 | - | 3.42 | 0.26 | - | - | 8.58 |
| TRANSPORTES | 0.14 | 0.41 | 1.18 | 2.34 | 10.21 | 0.25 | 1.88 | 44.39 | 0.02 | 31.89 | 1.13 | 0.07 | - | 93.91 |
| COMERCIO | 1.01 | 2.56 | 0.47 | 8.81 | 20.35 | 217.09 | 1.14 | 3.34 | - | 6.40 | 1.75 | 0.03 | - | 262.95 |
| BANCA-SEGUR. | 0.16 | 0.87 | 0.06 | 1.99 | 10.82 | 1.27 | 0.11 | 0.34 | - | 3.03 | 0.17 | 0.02 | - | 18.84 |
| GOBIERNO | 1.95 | 3.15 | 2.46 | 4.39 | 21.33 | 0.28 | 1.31 | 5.68 | - | 51.61 | - | 23.48 | 0.04 | 115.65 |
| EDUCACION | 0.20 | 53.52 | 0.67 | 0.50 | 4.93 | 0.03 | 0.65 | 1.35 | - | 3.65 | 0.32 | 0.06 | 0.06 | 65.91 |
| SERV.PERSON. | 6.71 | 8.19 | 14.31 | 7.59 | 12.25 | 6.38 | 5.96 | 19.71 | - | 210.10 | 1.93 | 0.22 | 1.73 | 295.05 |
| NO ESPECIF. | 0.71 | 1.13 | 0.49 | 2.41 | 14.82 | 0.61 | 1.08 | 4.02 | 0.02 | 7.61 | 89.75 | 0.32 | - | 122.97 |
| TOTALES: | 15.54 | 72.25 | 24.32 | 836.91 | 116.39 | 231.51 | 91.45 | 404.91 | 257.92 | 940.98 | 102.50 | 24.30 | 1.83 | 3,120.80 |

CUADRO Nº 3-23. DISTRIBUCION DE LOS PROFESIONALES CIENTIFICOS Y TECNICOS POR SUB-CATEGORIAS PROFESIONALES EN ALGUNOS SECTORES ECONOMICOS, 1961.

(En porcentajes de la mano de obra sectorial)

| SUB-CATEGORIAS PROFESIONALES | INDUSTRIAS MANUFACTURERAS | | | | | EXTRACCION | CONSTRUCCION | GOBIERNO |
|---|---|---|---|---|---|---|---|---|
| | ALIMENTICIAS | TEXTIL Y CONFECCION | PRODUCTOS QUIMICOS | METALURGICAS | OTRAS | | | |
| PROPORCION DE PROFESIONALES CIENTIFICOS - TECNICOS | .33 | .07 | 2.88 | .38 | .13 | 1.39 | 1.65 | 1.68 |
| De ellos: | | | | | | | | |
| - INGENIEROS AGRICOLAS Y ZOOTECNICOS | .01 | - | .03 | - | - | - | - | .20 |
| - INGENIEROS DE MINAS | - | - | - | .02 | - | .52 | .01 | .01 |
| - INGENIEROS CIVILES Y ARQUITECTOS | .01 | .01 | .03 | .05 | .01 | .19 | 1.47 | .35 |
| - ING. ELECTRICISTAS MECANICOS E INDUSTRIALES | .10 | .03 | .07 | .17 | .02 | .09 | .07 | .03 |
| - ING. QUIMICOS Y METALURGICOS | .14 | .03 | 1.84 | .13 | .09 | .39 | .08 | .15 |
| - FISICOS, GEOLOGOS | - | - | - | .01 | - | .12 | .02 | .05 |
| - VETERINARIOS, ZOOLOGOS, BIOLOGOS | .02 | - | .07 | - | - | .01 | - | .10 |
| - MEDICOS Y ESPECIALISTAS EN MEDICINA | .02 | - | .07 | - | .01 | .06 | - | .58 |
| - DENTISTAS | .02 | - | - | - | - | .02 | .01 | .15 |
| - FARMACEUTICOS DIPLOMADOS | .01 | - | .76 | - | .01 | - | - | .06 |

4-03 se presenta el desglose de las necesidades totales de graduados en cuatro sub-períodos, 1/

Huelga destacar que fue necesario introducir ciertos ajustes en los flujos de graduados para eliminar inconsistencias. Por ejemplo, el número de graduados de el ni-

CUADRO Nº 4-03.- NECESIDADES TOTALES DE GRADUADOS POR PERIODOS, POR NIVELES Y RAMAS DE EDUCACION, 1961 - 1980

( en miles de personas )

| NIVELES Y RAMAS DE EDUCACION | 1961 - 1980 | 1961 - 1966 | 1967 - 1970 | 1971-1975 | 1976 - 1980 |
|---|---|---|---|---|---|
| TOTAL | 7'185.6 | 988.3 | 1,097.2 | 2'188.8 | 2'911.3 |
| PRIMARIA | 5'582.5 | 768.0 | 832.1 | 1'711.4 | 2'271.0 |
| MEDIA | 1'325.5 | 171.6 | 209.6 | 398.3 | 546.0 |
| - SECUNDARIA COMUN a/ | 1'111.1 | 145.6 | 176.4 | 333.6 | 455.5 |
| - SECUNDARIA TECNICA | 214.4 | 26.0 | 33.2 | 64.7 | 90.5 |
| - AGROPECUARIA | 42.5 | 3.9 | 6.8 | 13.6 | 18.2 |
| - INDUSTRIAL | 107.1 | 12.3 | 15.2 | 31.3 | 48.3 |
| - Varones | 64.4 | 6.8 | 8.2 | 18.4 | 31.0 |
| - Mujeres | 42.7 | 5.5 | 7.0 | 12.9 | 17.3 |
| - COMERCIAL | 64.8 | 9.8 | 11.2 | 19.8 | 24.0 |
| - Diurna | 57.7 | 8.9 | 10.1 | 17.5 | 21.2 |
| - Vespertina y Nocturna | 7.1 | 0.9 | 1.1 | 2.3 | 2.8 |
| INTERMEDIA | 15.0 | 0.1 | 2.0 | 5.7 | 7.2 |
| SUPERIOR | 262.6 | 48.6 | 53.5 | 73.4 | 87.1 |
| - NORMAL | 90.0 | 15.0 | 16.4 | 27.1 | 31.5 |
| - UNIVERSITARIA | 172.6 | 33.6 | 37.1 | 46.3 | 55.6 |
| - Educación | 36.7 | 10.6 | 9.9 | 9.0 | 7.2 |
| - Humanidades | 59.6 | 11.3 | 15.3 | 16.3 | 16.7 |
| - Medicina | 13.7 | 2.5 | 2.1 | 3.6 | 5.5 |
| - Ciencias | 26.1 | 2.9 | 3.1 | 6.9 | 13.2 |
| - Ingeniería | 36.5 | 6.3 | 6.7 | 10.5 | 13.0 |

NOTA: a/ Diurna solamente.

CUADRO N° 4-08.- PROYECCION DE LA POBLACION ESCOLAR TOTAL MATRICULADA EN LOS AÑOS 1967, 1970, 1975 y 1980, POR NIVELES Y RAMAS DE EDUCACION

(Miles de alumnos)

| NIVELES Y RAMAS DE EDUCACION | 1964 | 1967 | 1970 | 1975 | 1980 |
|---|---|---|---|---|---|
| TOTAL | 2'220.1 | 2'814.1 | 3'312.8 | 4'133.3 | 4'918.1 |
| PRE-ESCOLAR Y PRIMARIA | 1'836.3 | 2'279.2 | 2'651.6 | 3'278.8 | 3'839.5 |
| MEDIA | 319.9 | 451.0 | 571.2 | 751.2 | 949.1 |
| - SECUNDARIA COMUN | 260.3 | 362.8 | 462.8 | 618.3 | 770.8 |
| - Diurna | 229.7 | 313.6 | 399.8 | 544.7 | 681.9 |
| - Vespertina y Nocturna | 30.6 | 49.2 | 63.0 | 73.6 | 88.9 |
| - SECUNDARIA TECNICA | 59.6 | 88.2 | 108.4 | 132.9 | 178.3 |
| - AGROPECUARIA | 7.0 | 12.4 | 16.2 | 20.7 | 27.5 |
| - INDUSTRIAL | 24.8 | 36.6 | 45.4 | 60.3 | 90.2 |
| - Varones | 13.7 | 20.2 | 26.3 | 38.1 | 61.8 |
| - Mujeres | 11.1 | 16.4 | 19.1 | 22.2 | 28.4 |
| - COMERCIAL | 27.8 | 39.2 | 46.8 | 51.9 | 60.6 |
| - Diurna | 15.1 | 21.3 | 25.0 | 28.1 | 32.1 |
| - Vespertina y Nocturna | 12.7 | 17.9 | 21.8 | 23.8 | 28.5 |
| INTERMEDIA | 0.4 | 1.6 | 3.5 | 4.7 | 5.6 |
| SUPERIOR | 63.5 | 82.3 | 86.5 | 98.4 | 123.9 |
| - NORMAL | 12.1 a/ | 18.6 | 23.3 | 25.7 | 29.2 |
| - UNIVERSIDADES | 51.4 | 63.7 | 63.2 | 72.7 | 94.7 |
| - EDUCACION | 11.8 a/ | 14.6 | 12.1 | 8.7 | 8.7 |
| - HUMANIDADES | 22.7 | 28.0 | 24.8 | 24.2 | 24.2 |
| - MEDICINA | 3.8 | 5.2 | 6.6 | 10.2 | 15.7 |
| - CIENCIAS | 4.3 | 5.7 | 8.0 | 15.4 | 28.2 |
| - INGENIERIA | 8.8 | 10.2 | 11.7 | 14.1 | 17.9 |

a/ Para los fines de comparación en Normal sólo se considera Normal Primaria. El alumnado de Normal Secundaria, Normal Técnica y Normal Educación Física se incluyen en Educación.

## BIBLIOGRAPHY


1. Carreras Universitarias, Volume II. Pan American Union, 1962.

2. Freeburger, Adela R., and Hauch, Charles C. Education in Peru. Office of Education, U. S. Department of Health, Education and Welfare, 1964.

3. "General Information about the Oficina Técnica de Agricultura." Lima: Technical Office of Agriculture, 1963.

4. Hodge, W. H., and Keck, D. D. "Biological Research Centers in Tropical America." National Science Foundation, 1962.

5. Horn, Claud L. "Information Regarding Institutions and Organizations in Peru Considered to Undertake Research under Public Law 480, Section 104(k)." 1959.

6. Instituciones Latinoamericanas Vinculadas a Problemas de Tecnología y Productividad. Pan American Union, 1960.

7. Koch-Weser, Dieter, M.D. Summary of Biomedical Research Activities in Peru. National Institutes of Health, 1964.

8. Mattraw, Harold C. "Draft - Capabilities for Scientific Research and Engineering in Selected Latin American Countries." Technical Military Planning Operation, General Electric Company, Santa Barbara, California, 1960.

9. Memoria Anual del Rector 1964. Universidad Nacional de Ingeniería, Lima, 1964.

10. Memoria del Servicio de Investigación y Promoción Agraria - 25 de julio de 1963 - 31 de mayo de 1964. Ministry of Agriculture, Lima, 1964.

11. "Notes on Seismology in South America." Washington, D.C., 1961.

12. Oficina Nacional de Evaluación de Recursos Naturales. Anõ I, No. 1, ONERN, Lima, 1965.

13. Robinson, C. W. (President, Marcona Mining Company). "Statement at International Institute of Education Fifth Conference on International Education." Washington, D.C., February 14, 1964.

14. Scientific Institutions and Scientists in Latin America: Peru (Institutions). UNESCO, Montevideo, Uruguay, 1963.

15. Social Progress Trust Fund: Fourth Annual Report, 1964. Inter-American Development Bank, 1964.

16. The World of Learning: 1964-65. Fifteenth Edition. London: Europa Publications, 1964.

Plus bulletins from the University of San Marcos and the Agrarian University, letters from persons in Peru, airgrams from the Peru/USAID Mission, etc.

17. Committee on International Exchange of Persons, Visiting Fulbright-Hays Scholars in the U.S., 1960-61, 61-62, 62-63, 63-64, 64-65.

18. EPTA Programme Summary Tabulations, 1960, 1961, 1962, 1963, 1964, 1965.

19. Ford Foundation Annual Reports, 1960, 1961, 1962, 1963, 1964, 1965.

20. Inter-American Development Bank: Activities 1961-1964, Inter-American Development Bank, 1965.

21. Kellogg Foundation Annual Reports, 1960, 1961, 1962, 1963, 1964, 1965.

22. Office of International Scientific Affairs, Inventory of Grants for Science and Technology by U.S. Government Agencies, UNTA, Special Fund, Ford, Kellogg and Rockefeller to Latin American Countries during 1960-62, Department of State, 1962.

23. Rockefeller Foundation Annual Reports, 1960, 1961, 1962, 1963, 1964, 1965.

24. Science Information Exchange, Smithsonian Institution, Grants to Latin American Countries, Fiscal Years 1964 and 1965, August, 1965.

25. Technical Assistance Board, Project Handbook: Volume III, Latin America. U.N. Expanded Programme of Technical Assistance, July 1, 1958.

26. Technical Assistance Committee, The Programme for 1963-64, A Descriptive Summary of the Category I Short-Term Projects Contained in Document E/TAC/L.281, The Expanded Programme of Technical Assistance, 1964.

27. AID Financed University Contracts as of September 30, 1965. Contract Services Division, Department of State, AID, Washington, D.C., 1965.

28. Financial Report of the Director and Report of the External Auditor: 1 January - 31 December 1960, 1961, 1962, 1963, 1964, Pan American Health Organization -World Health Organization.

29. Foreign Agricultural Research Agreements Executed under Public Law 480 Section 104(a) and 104(k). U.S. Department of Agriculture, Agricultural Research Service, March 31, 1965.

30. Proposed Program and Budget Estimates: 1965, 1966. Pan American Health Organization - World Health Organization, July 1964.