

PUBLIC

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PERU

PROJECT FOR PHYSICAL AND TECHNOLOGICAL DEVELOPMENT OF NATIONAL HEALTH INSTITUTES

(PE0012; 367/SF-PE)

LOAN PROPOSAL

SEPTEMBER 1973

REPUBLIC OF PERU
(PHYSICAL AND TECHNOLOGICAL DEVELOPMENT OF
NATIONAL INSTITUTES OF HEALTH)

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REPUBLIC OF PERU

(Physical and Technological Development of
National Institutes of Health)

SUMMARY

1. Borrower and Executing Agency: The borrower would be the Republic of Peru, and the project would be executed by the National Institutes of Health (IINNS), a decentralized public agency of the health sector with juridical personality under domestic public law. IINNS was established by Decree Law 17523 of March 21, 1969, and regulated by Decree Law 17642 of May 13, 1969. Its principal purposes are as follows: (a) to contribute, through research, to a better understanding of health problems of the human and animal populations, and (b) to protect human and livestock health through the provision of biologicals and quality control of medicine and foods. Pursuant to these legal provisions, IINNS is composed of: (a) the Institute of Public Health (IPS); (b) the Nutrition Institute (IN); (c) the Zoonosis and Livestock Research Institute (IZIP); (d) the Control Center for Biological Products and Medicines (CCPBM), and (e) the Institute of Occupational Health (ISO). 1/ The headquarters of IINNS is located in the city of Lima, and its activities cover the entire country. 2/
2. Amounts and Currencies: 3/ Up to the equivalent of US\$5.5 million, of which amount: (a) up to US\$4.5 millions or the equivalent in other currencies forming part of the IDB Fund for Special Operations, except that of Peru, would be disbursed to pay for goods and services acquired through international competition in the member countries of the Bank and for such other purposes as may be indicated in the loan contract, and (b) up to the equivalent of US\$1 million would be disbursed in sols to cover local costs.

1/ Prior to the legal provisions cited, the component institutes of IINNS belonged to various government agencies and were not consolidated under a joint administration.

2/ IINNS nationwide activities are carried out through the "health zones" and "agrarian zones" established in each of the political departments into which Peru is divided.

3/ The exchange rate used in this Document is US\$1.00 - S/38.70, except when otherwise specified (see Appendix F).

3. Source of Funds: The resources of the Fund for Special Operations.
4. Guarantee: The general responsibility of the Republic of Peru.
5. Terms, Interest, Charges, Disbursements and Currencies of Payment:
The loan would be amortized within 25 years from the date of the contract, by means of 42 consecutive semiannual installments in amounts as equal as possible, the first of which would be payable 4-1/2 years from that date. The interest rate would be 2-1/4% per year, payable semiannually on outstanding balances, with the first payment due six months after the date of the contract. The service charge would be 3/4 of 1% per annum, payable semiannually on the same dates and in the same amounts as the interest. Amortization and interest payments would be made proportionately in the respective currencies disbursed or, at the option of the debtor, in sols, except for amounts disbursed in the currencies of Mexico or Venezuela, in an amount equivalent in every case to the corresponding sum due calculated in dollars. The service charge would be payable in dollars on amounts disbursed in that currency and on disbursements in other currencies would be paid proportionately in the currencies disbursed or, at the option of the debtor, in sols except for amounts disbursed in the currencies of Mexico and Venezuela. The commitment fee would be 1/2 of 1% per annum on the undisbursed portion of the loan, payable proportionately in dollars and in the other currencies expressly provided for in the loan contract, on the same dates as the interest. This fee would commence to accrue 60 days after the contract date. The loan would be disbursed within four years from the date of the contract.
6. Project Description: 1/ The proposed project is designed to expand the operating capacity of IINNS, providing it with the physical and technical infrastructure needed for satisfactory provision of its services in the field of public health. To this end, the plan aims to consolidate IINNS within a single architectural, technical and administrative complex with a view to expanding its research, diagnostic and production activities, while at the same time ensuring more rational use of manpower and materials and an improvement in the institution's general productivity. To achieve these aims, the proposed project includes the following activities:

1/ The Bank provided financial assistance for the preparation of this project through reimbursable technical assistance operation AT/SF-65-75-PE, described in the text of this loan document.

- a. Construction of 25 buildings or units with a total area of approximately 25,650 square meters within a comprehensive architectural complex designed to facilitate the physical, technical and administrative consolidation of IINNS. The IINNS architectural complex would be located at the southern end of the metropolitan area of Lima in the Chorrillos district on a plot of approximately 52 hectares owned by the institution.
- b. The provision of laboratory equipment and other special installations needed for the new physical facility.
- c. Training of IINNS professional and technical staff based on a plan for technological improvement to be carried out through the granting of 55 fellowships to local personnel and the contracting of 15 consultants for in-service training. 1/

The activities described would involve four of the five IINNS institutes: the Institute of Public Health (ISP), Nutrition Institute (IN), Control Center for Biological Products and Medicines (CCPBM) and Zoonosis and Livestock Research Institute (IZIP). On-site inspections and studies conducted with the assistance of experts and consultants contracted especially by the Bank to advise on technical analysis of the proposed operation have shown that the Institute of Occupational Health (ISO) currently has a building, installations, equipment and technical staff suitable for performance of its present functions and responsibilities, although the master plan for IINNS development calls for a new location and building for the institute in the future. With regard to the Zoonosis and Livestock Research Institute, construction and equipment of the foot-and-mouth disease research, diagnosis and vaccine production and control laboratory are included in the Foot-and-Mouth Disease Control Program, which is recommended for a simultaneous consideration with the present operation. This part of the Foot-and-Mouth Disease Control Program would be carried out by IINNS jointly with activities covered by this project, if possible. This laboratory site is provided in the IINNS master plan, together with other IZIP installations, with a view to providing adequate support for development of the Foot-and-Mouth Disease Control Program. It has been considered advisable to include the financing of this laboratory under the Foot-and-Mouth Disease Control Program rather than under the present project, since this would serve: (a) to consolidate within each project all of the elements needed to attain the corresponding objectives with regard to human and animal health, respectively, and (b) all of the elements needed to carry forward the animal health campaign, which would also be incorporated in a single operation.

1/ These activities would be financed with the technical assistance program, for which a plan of operations is included as Appendix B of this loan document.

7. Project Cost: This item is estimated at the equivalent of US\$10.5 million, distributed as follows:

(In US\$ thousands or equivalent)

	<u>Investment Category</u>	<u>Foreign Exchange Costs</u>		<u>Local Costs</u>	<u>Total</u>	<u>%</u>
		<u>Direct</u>	<u>Indirect</u>			
1.	<u>Engineering and Administration</u>					
	1.1 Engineering and plans <u>1/</u>	--	--	203	203	1.9
	1.2 Executing office <u>2/</u>	--	--	233	233	2.2
2.	<u>Construction and Urban Improvements</u> <u>3/</u>	899	594	4,030	5,523	52.6
3.	<u>Laboratory Equipment</u> <u>4/</u>	1,652	--	306	1,958	18.6
4.	<u>Concurrent Costs</u>					
	4.1 Land <u>5/</u>	--	--	584	584	5.6
	4.2 Training	400	--	100	500	4.8
5.	<u>Financial Costs</u>					
	5.1 IDB interest and charges <u>6/</u>	70	--	335	405	3.9
	5.2 IDB Inspection and Supervision Fund	55	--	--	55	0.5
6.	<u>Unspecified</u> <u>7/</u>	<u>334</u>	<u>66</u>	<u>639</u>	<u>1,039</u>	<u>9.9</u>
	<u>TOTAL</u>	<u>3,410</u>	<u>660</u>	<u>6,430</u>	<u>10,500</u>	<u>100.0</u>
	Percentage	(32.5%)	(6.3%)	(61.2%)	(100.0%)	

1/ Includes the cost of preprojects that would serve as basis for computing construction costs, in addition to the costs of final architecture and construction plans, scheduled for completion by July 1972, and technical supervision of works.

2/ These items include a 10% contingency allowance.

3/ Includes provisions for contingencies entailed in construction and price rises, computed at 5.6% per annum.

4/ An annual 5.6% provision is estimated for price rises.

5/ Corresponds to the cost of 22 hectares of land acquired by IINNS in 1971 to complete the total land area needed for execution of the proposed project.

6/ Interest and service charge during project execution.

7/ This heading consolidates the general contingency costs for "construction and urban improvements" and "laboratory equipment", accounting for 13.9% of the total amount of those items.

8. Financing Plan: The project would be financed as follows:

(In US\$ thousands or the equivalent)

	<u>Source of Funds</u>		<u>Use of Funds</u>		<u>Total</u>	<u>%</u>
	<u>Foreign Exchange</u>	<u>Local Currency</u>	<u>External Costs</u>	<u>Local Costs</u>		
1. IDB-FSO	4,500 ^{1/}	1,000	4,000	1,500	5,500	52.4
2. Government of Peru	<u>70</u>	<u>4,930</u>	<u>70</u>	<u>4,930</u>	<u>5,000</u>	<u>47.6</u>
TOTAL	<u>4,570</u>	<u>5,930</u>	<u>4,070</u> ^{2/}	<u>6,430</u>	<u>10,500</u>	<u>100.0</u>
Percentage	(43.5%)	(56.5%)	(38.8%)	(61.2%)	(100.0%)	

9. Justification:

- a. The studies conducted lead to the conclusion that the project is well prepared and technically feasible. It is considered that the proposed goals are reasonable and could be satisfactorily attained within the guidelines set up. All construction and procurement under the project is clearly defined and cost estimates are believed reasonable. No significant changes are expected in contracting and acquisitions as programmed.
- b. IINNS is discharging its functions and responsibilities acceptably, insofar as its serious current physical and technical limitations permit. However, the activities programmed for the institutes, and especially the future projections of the institution based on the sectoral health plan, necessarily entail expansion of its general operating capacity, which would be made possible by execution of the proposed project.
- c. In order to guarantee satisfactory execution of the project, IINNS has set up an executing office which will be responsible for technical and financial administration of such execution. At the same time, IINNS has begun to overhaul its accounting system in order to introduce an adequate businesslike financial management system consistent with its future needs. It also proposes to establish a planning office primarily responsible

^{1/} Up to 11.1% of the foreign exchange resources of the proposed loan (equivalent to US\$500,000) would be used to cover local costs. These costs constitute part of the local cost component of the construction contracts to be awarded on the basis of international public bidding.

^{2/} Includes indirect foreign exchange costs amounting to US\$660,000.

for comprehensive and continuing planning and coordination of the preparation and execution of work plans and programs of the institution. Accordingly, the steps already taken by IINNS and those proposed in this operation suggest that the executing agency will have sufficient and technical and administrative ability to carry out the proposed project and make positive use of the resulting expansion of its operating capacity.

- d. The proposed project has been carefully prepared, with financial assistance from the IDB for its study and preparation as provided in reimbursable technical assistance operation AT/SF-65-75-PE. In addition, high-level international experts, such as Dr. Harlan, D. Anderson, and William H. Oberhard, first, and Mr. Jesse C. Norman and Mr. Orland A. Soave, subsequently, have participated actively with Bank experts and Peruvian officials in the stages of preparation and final drafting of the project.
- e. As a result of the foregoing, the present project is organized in accordance with the goals of activities under the sectoral health plan to ensure that project purposes and targets are coordinated with other national efforts in that sector. From the technical standpoint, the project is fully justified since: (i) it would serve to expand the research, diagnostic and production activities of IINNS at the levels required by the sectoral health plan; (ii) it would facilitate planning and implementation of technical and administrative tasks; (iii) it would ensure better utilization of technical support services and shared facilities; (iv) it would tend to reduce unit costs of production, operation and administration; (v) it would provide health services for the widely dispersed residential areas where the obsolete and inadequate premises of the various institutes are currently located, and (vi) it would improve the caliber of services rendered by IINNS.
- f. The financial analysis indicates that no difficulties are expected in prompt contribution of the local resources needed for full execution of the project and for adequate financing of the expected activities of IINNS following amplification of its physical, technical and operating capacity.
- g. The general health level of Peru is still unsatisfactory, owing to the prevalence of high morbidity and mortality indices for preventable diseases. The major factors responsible for the health level include: (i) poor environmental health; (ii) malnutrition caused by shortage and poor utilization of foods; (iii) low level of public health coverage, especially in rural areas; (iv) the high price of certain strategic inputs in the sector, such as foods and medicines; (v) the steadily increasing complexity of medical technology, and (vi) general low productivity in the health sector. The action programmed in the health

sector, which is covered by the Sectoral Health Plan for 1971-75, are aimed precisely at full or partial solutions of the most urgent sectoral problems. The proposed project is specifically included in the sectoral health plan, and its implementation would be an element of fundamental importance in attaining the purposes and goals established in that plan. From the economic standpoint, quantification of benefits to be derived from the project poses methodological problems that make it impossible to calculate an internal rate of return. However, it is obvious that execution of the project would have a significant positive impact on the factors determining the health level, even though that impact cannot be quantified. For these reasons, socioeconomic evaluation of the proposed project has had to be confined to an analysis of the principal goals of activities that would be achieved through its execution as compared to present and projected needs (or demand) for such activities or services.

- h. Execution of the proposed project would make it possible to increase the production of biologics and medicines for human and animal use to the levels provided for in the sectoral health plan and to replace nearly all current imports of biologicals by IINNS with national production. 1/ This is a particularly important circumstance, since there is no competitive market for biological products; they are produced, distributed and utilized in almost all countries of the world directly by government agencies, and the importing countries can only obtain them after a long delay, since output in the producing countries is generally confined to domestic needs. Consequently, the increase in IINNS capacity to prepare these products will make it possible to replace current imports and ensure a prompt and steady supply of such biologicals. 2/ In addition, execution of the project would make it possible to improve the quality and quality control of vaccines and to increase productivity in their output. Furthermore, the expansion of diagnosis, research and analysis would increase the effectiveness of the struggle against epidemics and of the discovery and prevention of nonepidemic diseases. The proposed project would also serve to expand analysis and research in the field of nutrition, which is one of the chief factors responsible for the comparatively low general health level in Peru. The technical advantages of consolidating IINNS within a single architectural complex would undoubtedly generate such additional benefits as reduction of unit costs of production and shared use of equipment on more economic scales.

1/ It should be noted here that IINNS is the only national producer of the vaccine and biological products it prepares; consequently, the shortfall between production by the institute and demand is covered by imports.

2/ Only oral polio and measles vaccines will continue to be imported, since their production in the country is not advisable (see paragraphs 4.30 et seq. of the document).

10. Recommendation: Based on the study and conclusions of the project committee, the Operations Department submits this loan document to the President of the Bank for consideration and subsequent presentation of the corresponding proposed resolution to the Board of Executive Directors for approval.

I. INTRODUCTION

A. Background

- 1.01 The planning process in the field of public health and social welfare, initiated in Peru with the establishment of the national planning system in 1963, was consolidated with enactment of Decree Law 17523 of March 21, 1969, which constitutes the organic law of the health sector. This decree law formally defines the sector and stipulates its functions, responsibilities and basic activities. 1/
- 1.02 To help with the action plans of the health sector, the Bank, in 1969 extended to the Peruvian Ministry of Public Health reimbursable technical assistance (AT/SF-65-75-PE) in the equivalent of US\$40,000. 2/ It had originally been planned for the technical assistance to be used to study, for the health sector, the feasibility and alternatives of expanding national capacity for producing biological products for human and animal use. When the National Institutes of Health (IINNS) were set up as the decentralized agency in the health sector, the original purposes of the technical assistance were retained but in institutional terms this study was reoriented to take into account the existence of IINNS, the functions and responsibilities assigned to it and its general development programs. 3/

B. Application and Priority

- 1.03 Based on the studies partially financed with the abovementioned technical assistance, on January 14, 1971, the Peruvian Government submitted to the IDB, through the Ministry of Economy and Finance, a loan application in the equivalent of US\$3.15 million for partial financing of a project aimed at physical and technological development of IINNS, which called for the organic and physical integration of that institution. This application further indicated that the Government of Peru assigned the highest priority to execution of the project, since it is a factor of primary importance in fulfilling the purposes and goals of the sectoral health plan and is specifically included in the National Development Plan for 1971-75.

1/ Chapter II describes the organization of the health sector.

2/ See paragraphs 3.27 and 3.28.

3/ Pursuant to Decree Law 19643 of May 13, 1969, IINNS consists of the following units: Institute of Public Health (ISP), Nutrition Institute (IN), Zoonosis and Livestock Research Institute (IZIP), Control Center for Biological Products and Medicines (CCPBM) and Institute of Occupational Health (ISO).

C. Missions

- 1.04 On April 12, 1971, the Bank sent an operations mission to Peru for the purpose, among others, of evaluating the documentation and background available on this project and agreeing in principle with the proper authorities on the basic conditions on which the Bank could continue study of the respective loan application. In addition to the IDB officers, the mission included Drs. Harlan D. Anderson and William H. Gebhard, 1/ well known experts with considerable experience in the field of public health especially contracted by the Bank to collaborate in technical study of the application in the field. These experts were responsible for evaluating the project primarily in terms of its relevance to national needs within the framework of the sectoral health plan. In addition, in conversations with executives of the national institutes, the mission received advisory services from the Lima representative of the Pan American Foot-and-Mouth Disease Center, who was assigned by the Pan American Sanitary Bureau (PASB) to assist IINNS in preparing the project, particularly with reference to defining technical assistance requirements. 2/
- 1.05 Subsequently, during July 1971, the Bank sent a technical group to Peru consisting of IDB and PASB staff members and two specialists, Mr. Jesse C. Norman and Mr. Orland A. Soave, PASB consultants. 3/ The basic objective of this group was to analyze at first hand the status of architectural studies prepared by the experts contracted by IINNS and to assist them in final orientation of the preproject designs for development and physical integration of that institution. 4/

1/ Dr. Anderson is a biologist, a graduate of the University of Wisconsin, and currently Vice President of Operations for the Metabolic Inc. firm in Houston, Texas. He previously held executive posts in the Public Health Department of the State of Michigan. Dr. Gebhard is a microbiologist and a graduate of Michigan State University presently employed as Chief of the Test and Control Section of the Michigan Public Health Department. The curriculum vitae of these experts is included as Appendix D to this document.

2/ See Chapter II of this document.

3/ Mr. Jesse C. Norman is Chief of the Laboratory Technical Consultation Section of the U.S. Public Health Department in Atlanta, Georgia, and Mr. Orland A. Soave is Director of the Department of Animal Facilities and Services of the Stanford Medical School in Palo Alto, California.

4/ It should be noted that the considerable technical advisory services provided to the Bank by other agencies and outside consultants in analysis of this project were prompted basically by the fact that it involves very specialized and complex technical aspects relating to equipment and construction of the buildings involved in this operation, such as special installation and systems for air conditioning services, ventilation, humidity control, temperature control and laboratory design, planning of services common to all institutes and many other specialized technical aspects of outstanding importance in technical organization of the project.

- 1.06 The joint and coordinated work of Bank personnel with the PASB specialists and outside consultants resulted in a careful and detailed examination of the technical, financial and institutional aspects of the project. During evaluation of the loan application, the basic project needs were accurately defined and certain technical proposals defined. At the same time, execution costs were examined and updated by reviewing laboratory equipment needs and evaluating personnel training requirements. It should be pointed out that the estimate of total project cost presented in the loan application did not include items to cover urban improvement and technical assistance costs, and that the contingency costs were estimated at amounts well below the real needs of the project. As a result of the studies made, new estimates of total project cost were evolved, raising this figure from the US\$6.3 million equivalent estimated in the application to the equivalent of US\$10.5 million. In view of the foregoing, the Peruvian authorities asked the IDB to increase the amount of the prospective loan from the equivalent of US\$3.15 million to the equivalent of US\$5.5 million.

II. THE BORROWER AND EXECUTING AGENCY

A. The Borrower

2.01 The borrower would be the Republic of Peru.

B. The Executing Agency

2.02 The executing agency would be the National Institute of Health (IINNS), a decentralized public agency of the health sector with juridical personality under domestic public law, established by Decree-Law 17523 of March 21, 1969 (Organic Law of the Health Sector) and regulated by Decree 17642 of May 13, 1969. Pursuant to the provisions of Decree-Law 17523, IINNS is made up of the Institute of Public Health (IPS), the Zoonosis and Livestock Research Institute (IZIP), the Nutrition Institute (IN), the Control Center for Biological Products and Medicines (CCPBM) and the Institute of Occupational Health (ISO).^{1/} IINNS has its chief domicile in the city of Lima, but its sphere of action covers the entire country through the "agrarian zones" and "health zones" established in each of the political departments into which Peru is divided.

C. Position of IINNS in Health Sector

2.03 Decree-Law 17523 formally delimited the health sector and specified the functions and responsibilities of its component agencies and institutions. In general terms, the fundamental aim of the health sector is the development of activities relating to the promotion, protection and recovery of human and animal health and to rehabilitation, social assistance and guardianship of minors. Its field of action includes all agencies, organizations and persons engaged in activities of the sector.

2.04 The public sector, in health matters, is composed of the Health Ministry, as the central entity of the sector, and the decentralized public agencies: i) National Institutes of Health; ii) Public Welfare Societies, ^{2/} and iii) National Health and Social Welfare Fund. ^{3/} Also linked to the sector are the medical services of the armed and

^{1/} The individual institutions making up IINNS are described under 2.13 et seq. of this loan document.

^{2/} The Public Welfare Societies are local institutions which administer goods and funds intended for the provision of medical and social assistance to the destitute.

^{3/} The National Health Fund is the institution responsible for administering resources allocated by the government to finance all or part of the investment programs, operation of services, research or teaching activities deemed necessary by the Health Ministry.

auxiliary forces, the social security system and the local government departments working in the health and social welfare field. The private health sector includes those corporate bodies under domestic private law whose activities are connected with public health and professional medical practitioners.

- 2.05 It is the responsibility of the Health Ministry, as the central organ of the health sector, to plan, direct, coordinate and supervise the health and social welfare activities of the public sector and to orient, regulate and encourage private health activities.

D. Aims and Functions of IINNS ^{1/}

- 2.06 IINNS was set up fundamentally for physical and institutional integration within a single entity of the various institutions located around the country that were carrying out complementary activities in the public health field, which were operating without the necessary coordination and under the jurisdiction of different ministries. This step endeavored to consolidate the programming and directing of activities of the several component units that comprised IINNS and at the same time to promote a high degree of administrative efficiency and greater rationalization in the allocation and use of economic resources in the health sector. Execution of the proposed project would also contribute to the physical integration of these units.
- 2.07 The basic aims of IINNS, as set forth in its decree-law, are as follows:
- a. To contribute, through research, to a better understanding of health problems of the human and animal populations;
 - b. To contribute to the implementation of programs of the Ministries of Health and of Agriculture and Fisheries, through the provision of vaccines, antigens and reagents and by developing appropriate formulas for the enrichment of foodstuffs;
 - c. To protect human and livestock health by inspection and checking of pharmaceutical, biological and cosmetic products and food, drink, water and raw materials, in conjunction with the other authorities of the public sector;
 - d. To investigate the health problems of the country's workers and to regulate and supervise the measures taken to prevent accidents and occupational diseases at work sites.

^{1/} A detailed assessment of the technical, financial and administrative capacity of IINNS is given under 2.27 through 2.47 of this document.

- 2.08 To achieve the aims listed above, IINNS carries out, inter alia, the following activities and general functions: it prepares biological products for both human and livestock use; acts as a national nutrition and microbiology reference center and as a coordinating and supervisory authority for health laboratories at the national level; carries out specialized diagnosis in the public health field; acts as a regulatory, coordinating and supervisory agency for nutrition activities; checks and certifies the quality of biological, food and pharmaceutical products, both local and imported; investigates health problems affecting humans and livestock; draws up programs for preventing accidents and occupational diseases based on research into work-related health problems, and trains professional and technical personnel. IINNS carries out its functions and general activities through its various component organizations.

E. Organization and Administrative Structure

- 2.09 The top authority of IINNS is the Executive Advisory Board, which is responsible for fixing the policy of the institution in accordance with the rules laid down by the Ministry of Health and in coordination, as regards all matters relating to animal health, with the Ministry of Agriculture. It also answers requests for advice submitted by the Office of the Director General and by the directors of the different institutes. The Executive Advisory Board is made up of the Minister of Health, who acts as chairman, and by thirteen other members representing the health, agriculture, industry and commerce, and labor sectors. 1/
- 2.10 The administration of IINNS is headed by a Director General whose main powers and responsibilities are those of directing the technical and administrative work of the institution in accordance with the rules and general guidelines laid down by the Executive Advisory Board; coordinating the action programs of the institutes so as to achieve rational utilization of common means and resources, avoiding interference and duplication, and supervising and maintaining constant evaluation of the functioning of the research, production and promotion plans of the individual organizations. The Director General is assisted in his technical and administrative work by a Coordination Committee and by Coordination Commissions. The General Administration

1/ These sectors are represented by: the Executive Directors of the Ministries of Health, Agriculture, Industry and Trade, and Labor; four directors general of the Ministry of Health; the Director of the Bureau of International Exchanges of the Ministry of Health; the Director General of Agricultural Development and the Chief of the Coordination Bureau of the Ministry of Agriculture; one representative of the National Research Council, and the Director General of IINNS, who also acts as secretary of that council.

Office and the Biotarium 1/ are directly subordinate to the Office of the Director General, as are the following: i) Institute of Public Health; ii) Zoonosis and Livestock Research Institute; iii) Nutrition Institute; iv) Control Center for Biological Products and Medicines, and v) Institute of Occupational Health. 2/

- 2.11 The Coordination Committee is responsible for liaison and horizontal coordination; it advises the Director General on technical and administrative problems. The Coordination Committee is made up of the Director General of IINNS, who acts as chairman, the directors and deputy directors of the different institutes, and the Director of Administration. The Coordination Commissions are responsible for vertical coordination of execution for the plans of each IINNS institute and are chaired by the Director General. 3/
- 2.12 The General Administration Office is directly responsible for the general administration of IINNS. Its main functions include centralizing, consolidating and supervising the budgetary and economic system of the institution; procuring materials supplies for the other units; providing maintenance and transportation services, and administering all personnel matters. The Director of Administration has under him the following services: Accounting Office; Supplies Office; Personnel Office; Documentation and Archives, and General Services Office. The analysis made showed that the administrative system is relatively efficient for the institution as it is at present, but ought to be strengthened if the proposed loan is granted, specifically in those aspects which would relate to execution of the project (see under 3.30 and 3.31).

F. IINNS Component Agencies

- 2.13 From the organizational standpoint, the different agencies comprising IINNS report directly to the Director General. In their turn, the operation and administration of each of these units are handled by a director and a deputy director, while their administrative structure also includes the corresponding coordination committees and commissions together with the technical divisions needed for carrying out their functions and responsibilities. 4/

1/ The Biotarium is the auxiliary support service, subordinate to the Director General, which houses the animals used for experimental purposes in the scientific research plans and programs of the IINNS institutions.

2/ The functional organization chart of IINNS and each of its component units are included as Annex C.

3/ See under 2.43 et seq.

4/ The functional organization tables of the IINNS agencies are given in Annex C.

- 2.14 With the exception of the Institute of Occupational Health, which is not included in the proposed project because it already has suitable installations and equipment, 1/ the other four units which make up IINNS are working under extremely unsatisfactory conditions, in premises located in old houses converted for the purpose and scattered throughout residential areas, with obsolete and inadequate installations and equipment and a limited number of trained technical personnel for performing their important work and functions in the field of human and animal health. A brief description of the five institutes comprising IINNS is given in the following sections.

1. Institute of Public Health (ISP) 2/

- 2.15 ISP's chief functions include preparing and supplying biological products for immunization purposes and diagnosis for human uses; conducting studies and research on infectious and contagious diseases affecting the human population, together with immunological and applied microbiological work; acting as a national reference center for diagnostic laboratories and as a regulatory, coordinating and supervisory agency for the activities of health laboratories, and training professional and technical personnel. These functions are carried out through the Technical Divisions of Diagnosis and Research, Viruses and Production, which maintain a total of 19 specialized laboratories. ISP's staff presently numbers 78 persons, including 28 professionals, 36 laboratory technicians, and 17 administrative and service employees.
- 2.16 The premises it currently occupies are shared with the Control Center for Biological Products and Medicines, the Office of the Director General and the Office of the Director of General Administration. The present premises are unsuitable for the performance of ISP's functions and do not offer any possibilities for expansion. Under these circumstances, IPS is hard pressed to produce 50% of the biological products needed to meet the demand from the country as a whole and is unable to do more than 25% of the analysis work required. In 1970, ISP did 135,800 analysis and produced rather more than 10 million doses of vaccines of various types and 1.1 million doses of antigens.

2. Zoonosis and Livestock Research Institute (IZIP) 3/

- 2.17 IZIP is responsible for the prevention, control and study of diseases directly affecting livestock. For this purpose its main functions

1/ See 2.27 and Chapter III.

2/ ISP was established in 1938, becoming part of the General Health Office of the Ministry of Public Health and Social Welfare in 1960. It was incorporated into IINNS by Decree-Law 1642 of May 13, 1969.

3/ IZIP was established in 1941, when it was placed under the Livestock Department of the Ministry of Development; in 1942, when the Ministry of Agriculture was set up, it was made part of the Livestock Department of that ministry. It was incorporated into IINNS in 1969 (see under 2.02).

and activities include epidemiological research on animal diseases; acting as a national reference center for veterinary microbiology diagnosis; preparing and supplying biological products for immunization and diagnostic purposes, and training professional and technical personnel. IZIP has two technical divisions for the performance of its responsibilities, the Diagnosis and Research Division and the Production Division. IZIP's staff includes 93 persons, of whom 23 are professionals, 19 technicians, 17 administrative and 34 are laborers.

- 2.18 IZIP is presently operating in two locations. The Office of the Director and the Diagnosis and Research Division work in premises located in Lima, rented from the Agrarian University, which are now unsuitable for the performance of their functions and do not permit expansion. The Production Division is operating out of rudimentary facilities located on a part of the proposed site for IINNS's new installations, which would be partially financed with the proposed loan. In the present facilities the division is now carrying out the production and control of foot-and-mouth vaccines and undertaking research and diagnosis connected with that zoonosis under extremely unsuitable conditions. Taking into account the importance of these activities for implementation of the Foot-and-Mouth Disease Control Program, provision has been included in this program for the construction and equipment of a new laboratory for diagnosis, research, production, and control of foot-and-mouth vaccines. The Peruvian Government has submitted a loan application to IDB for partial financing of the Foot-and-Mouth Disease Control Program, and it is recommended that this application be considered simultaneously with the present operation. It should be emphasized that although financing for construction and equipment of the new laboratory is included in the program, administratively speaking the laboratory would come under IINNS and would be physically located in the IINNS complex. It was considered advisable to include the financing for the new laboratory under the Foot-and-Mouth Disease Control Program rather than under this project, since by doing so: a) it would be possible to combine in each of the projects all of the elements needed to achieve the corresponding goals in terms of human and animal health, respectively, and b) all elements required for implementing the animal health campaign would be included in a single operation.
- 2.19 In 1970, IZIP carried out 60,700 examinations for diagnostic purposes and produced 1.1 million doses of antigens, bacterins and various vaccines and approximately 2.9 million doses of foot-and-mouth vaccine. 1/

1/ See loan document on the Foot-and-Mouth Disease Control Program in Peru.

3. Nutrition Institute (IN) 1/

- 2.20 The basic purpose of IN is to contribute, through scientific research, to a better understanding of human diet nutrition. Its chief activities and functions include the formulation and continuing updating of a diagnosis of the country's dietary and nutritional status; verification and certification of the chemical composition and hygienic quality of foods and food products; operation as a national reference center in the determination of measurement criteria and units for use in dietary and nutritional activities; advice to the public sector and institutions or persons requesting advice on nutrition and diet, and coordination and promotion of programs on diet and nutrition in conjunction with specialized agencies and organization of the public and private sectors. These functions are carried out through the three Technical Divisions of Laboratories, Nutritional Pathology and Applied Nutrition. IN's personnel numbers 42 persons, 22 of whom are scientific technicians, four are auxiliary technicians, eight are administrative staff and eight service personnel.
- 2.21 In 1970, IN carried out 950 nutrition analyses, 5,100 technical and microbiological analyses for approval and registration of foods, 242 surveys on food consumption and 1,077 community education campaigns. The studies showed that, due primarily to the limitations imposed by its present premises and equipment, IN is unable to cope with the growing needs connected with national dietary and nutritional problems (see Chapter IV).

4. Control Center for Biological Products and Medicines (CCPBM) 2/

- 2.22 The purpose of CCPBM is to contribute toward the protection of human and animal health by guaranteeing the quality of biological products for human and animal use, medicines and related products used in Peru. It is the only official agency at the national level which maintains a scientific check on the quality and composition of all products used in the country for the preservation and recovery of human and animal health; it also carries out scientific research on techniques and methods for improving quality controls and trains specialized personnel. In addition, CCPBM will be responsible for certifying the quality of the foot-and-mouth vaccines to be produced by the laboratory for foot-and-mouth diagnosis, research, and vaccine production and control, construction and equipment of which is envisaged under the

1/ IN was established in 1944; as of 1956 it was incorporated into the administrative structure of the Cooperative Public Health Service; in 1962 it was made part of the Special Public Health Service, and in 1969 it was absorbed by IINNS (see under 2.02).

2/ CCPBM was set up by Decree-Law 17642 of May 13, 1969, to form part of IINNS (see under 2.02).

Foot-and-Mouth Disease Control Program. It should be noted that, for technical reasons, the isolation sheds for potency tests and quality control of the vaccine, in their various stages, would be built as part of the laboratory referred to, while CCPBM would certify the efficiency of the laboratory's quality controls (see under 2.18).

- 2.23 The functions and activities of CCPBM are carried out through the Biological Control Division and the Chemico-Pharmacological Division. Its personnel numbers 29, 17 of whom are professionals, four specialized technicians and eight administrative and service staff. In 1970, CCPBM carried out a total of 22,800 analyses of various types, estimated at approximately 25% of the country's actual requirements.
- 2.24 As noted under 2.16 of this loan document, CCPBM shares its present premises with the Office of the Director General of IINNS, the Office of the Director of General Administration and ISP, which premises are equally unsuitable for CCPBM's present requirements.

5. Institute of Occupational Health (ISO) 1/

- 2.25 The basic purpose of ISO is to maintain and promote the physical, mental and social welfare of the workers in their jobs. Its chief functions include carrying out applied research on occupational health problems; regulating, evaluating and supervising environmental conditions and occupational health services at employment centers; coordinating measures to prevent accidents and occupational diseases; participating in the training of professional and technical personnel in the occupational health field, and carrying out studies and control of industrial pollution. These functions are performed through four technical divisions: epidemiology, personnel health, environmental sanitation services and chemical laboratory services, together with three regional units. ISO's staff presently numbers 101, including 44 professionals, 13 specialized technicians, 27 administrative personnel and 17 service personnel.
- 2.26 ISO has large and modern premises in Lima 2/ where it has its headquarters, and also rents three buildings in the cities of Trujillo, La Oroya and Arequipa as the local headquarters for the northern, central and southern regional units, respectively. From the technical studies made it may be concluded that the premises, installations and

1/ ISO was established in 1940 under the Ministry of Health, being upgraded to an institute in 1957. Up to 1962, it was administered by the then Inter-American Cooperative Public Health Service, and was incorporated into IINNS in 1969 (see under 2.02).

2/ This building was constructed in 1956 on a 3,100-sq. meter site. The building itself covers 1,800 sq.m.

equipment of ISO are acceptable and that its technical personnel are sufficient and well qualified. It is considered that ISO could increase the volume of the services it provides in the short term without any physical and technical expansion. The present project does not therefore include construction work, equipment or personnel training for ISO. It should be noted, however, that the master plan for the physical integration of IINNS provides for the location and future construction of premises for ISO.

G. Financial Administration and Source of Funds of Executing Agency

- 2.27 As noted under 2.01, the Government of Peru would be the borrower in the proposed operation and would, consequently, be responsible for service and amortization of the possible loan. In the same way, the resources for the local contribution to the project would be derived from special allocations by the government, through the Ministry of Economic Affairs and Finance, rather than from the regular funds of the executing agency. Chapter IV of this document presents a detailed analysis of the amount and scheduling of the local contribution for execution of the project, together with the justification for assuming that this local contribution will in fact be available at the time required. Notwithstanding the foregoing, it has been deemed pertinent to examine the financial aspects of IINNS, since, as already stated, it would be the executing agency for the project.
- 2.28 The chief findings of the study made are detailed in the following paragraphs. The study of IINNS's finances and record was taken back to 1969, the year in which IINNS was founded. Although data could have been obtained for earlier years, these are not entirely comparable with the post-1969 figures, since they relate to the period when the institutions making up IINNS operated independently and under different authorities.

1. Financial Administration and Control

- 2.29 Because it is a decentralized public body, IINNS operates on the basis of a general budget allocated over various programs. The general rules governing programming, formulation, approval and control of the budget are fixed by the pertinent articles of the Organic Law of the Functional Budget of the Republic. The various directors of IINNS institutes submit their respective programs of action to the Director General for the preparation of the budget. Using this information and the projection of resources, the Director of Administration draws up a draft budget by goals that is studied by the Coordination Committee. This draft budget is then submitted to the Health Ministry for approval and inclusion, through the Ministry for Economic Affairs and Finance, in the national budget.
- 2.30 In accordance with the provisions of the organic law referred to, the Office of the Comptroller General of the Republic and the Office of

the Director of Public Accounts have laid down the accounting system that is used by the decentralized public bodies. As one of these, IINNS is presently applying a cash-based budget accounting system in accordance with the classification of revenues and expenditures approved by Supreme Decree 214-70-EF of October 25, 1970. Consequently, to date IINNS has been producing budget execution balances, by way of basic financial documents since the accounting system is designed to keep track of funds received from the national budget, pursuant to the statutory provisions referred to.

- 2.31 Bearing in mind the new economic and institutional dimension programmed for IINNS, particularly as a result of execution of the proposed project, it was felt that the present exclusively budgetary accounting and financial controls would not be altogether adequate to meet the future requirements. Accordingly, the Office of the Director General of IINNS initiated, at the end of 1971, a review of the institution's financial administration leading to, inter alia, the introduction of a business-type accounting system that will meet the future requirements. To this end IINNS has engaged the services of National Cash Register del Perú, S.A. and has started setting up an electronic system for the processing of accounting data. It is therefore considered that during the first year of execution of the proposed project IINNS should have a capital-type accounting system in operation that would make it possible to obtain an adequate picture of the institution's financial position. It should be pointed out that this work of improving the financial administration will not interfere with control of project execution, since execution and financial administration of the project would be under the direct responsibility of the executing office established for that purpose (see under 2.44 and Chapter III). As a prior condition for the first disbursement this executing office would have to set up, to the entire satisfaction of the Bank, a system of financial records that permits adequate follow-up of project operations, both as regards funds from the possible loan and the local counterpart contribution.
- 2.32 The Office of the Comptroller General of the Republic, in accordance with the pertinent legal provisions, will act as auditor for IINNS through its Audit Representative for Decentralized Agencies and Public Undertakings, who will make periodic inspection visits. The control effected by this representative will relate basically to the utilization of budget items allocated for expenditures and he will submit a monthly report on the financial position to the Comptroller General. In addition, the Audit Office of the health sector will carry out similar functions at the sectoral level. For adequate control over operations in the proposed project, it is suggested that the prospective loan contract stipulate that each year, not later than 90 days following the closing of each fiscal year, beginning with the year closed on December 31, 1972, and continuing through the life of the loan contract, IINNS shall submit its financial statements to the Bank and shall also, during the execution of the project, submit the accounts for the

proposed project certified by the Office of the Comptroller General in accordance with rules laid down by the Bank. In the event of the Comptroller's Office being unable to carry out the audits in the time and manner required, the IINNS financial statements would be submitted duly audited by a firm of independent public accountants acceptable to the Bank, and the cost of engaging these accountants would be charged to IINNS (see Conclusions and Recommendations). Since IINNS will not introduce a suitable accounting system until 1973, as is apparent from 2.31 and 2.43, the financial statements that would be submitted to the Bank for 1972 would be of the budget execution type normally prepared by the institution to date. As of 1973, IINNS would be required to submit statements of the revised type.

2. Financial Resources

- 2.33 Pursuant to the pertinent legal provisions, IINNS receives its funds from current transfers from the Public Treasury and from the sale of products it prepares and the fees it charges for its services to both the public and private sectors, through the member institutions. IINNS's own revenues, from product sales and fees, are derived basically from: a) the sale of biological products for veterinary use, especially foot-and-mouth vaccine; b) the sale of immunizing and diagnostic biological products for human use; c) the sale of narcotic substance, and d) fees for various types of bromatologic and microbiological analyses and checks of foodstuffs for human and animal consumption. It should be pointed out that these revenues are usually collected in cash form and are barely sufficient to cover the costs involved, which is fully consistent with the social nature of IINN's work.
- 2.34 The following table provides a summary of the execution of IINNS's income and expenditure budgets for 1969, 1970 and 1971. (The equivalent budgets for 1971 and 1972 are given under 2.39.)

(In thousands of US\$ or equivalent 1/)

	1 9 6 9			1 9 7 0			1 9 7 1	
	Budgeted	Received	Performance %	Budgeted	Received	Performance %	Budgeted	Received
Receipts 2/	207.8	165.8	79.8	279.1	435.7	156.1	362.0	409.0 ^{3/}
fers from Treasury	841.4	841.4	100.0	1,331.8	1,331.8	100.0	1,447.0	1,447.0
Receipts	<u>1,049.2</u>	<u>1,007.2</u>	<u>96.0</u>	<u>1,610.9</u>	<u>1,767.5</u>	<u>109.7</u>	<u>1,809.0</u>	<u>1,856.0</u>
	Budgeted	Received	Performance %	Budgeted	Received	Performance %	Budgeted	Received
remuneration 4/	706.7	693.5	98.1	1,029.7	1,032.2	100.2	1,047.0	1,061.0
of goods and services	226.5	222.6	98.3	426.8	402.7	94.4	526.0	429.0
l investments	81.4	66.4	81.6	104.0	140.7	135.3	179.0	48.0
expenditures 5/	<u>31.1</u>	<u>30.4</u>	<u>97.7</u>	<u>50.4</u>	<u>51.1</u>	<u>101.4</u>	<u>57.0</u>	<u>51.0</u>
Expenditures	<u>1,045.7</u>	<u>1,012.9</u>	<u>96.9</u>	<u>1,610.9</u>	<u>1,626.7</u>	<u>101.0</u>	<u>1,809.0</u>	<u>1,589.0</u>

rate US\$1.5/38.70 for all three years.

the sale of biological products for human and animal use, sales of narcotic substances and fees of various types of analysis.

receipts generated but uncollected during period equivalent to US\$161,394.

the administrative organization of IIMNS was consolidated through establishment of the Office of the Director of General Administration, which explains the increase in "staff remuneration".

social benefits and other operating costs.

- 2.35 The preceding table shows, firstly, that approximately 80% of IINN's financial resources is derived directly from government contributions, in the form of Treasury transfers. The amount of these transfers has increased substantially since the institutional consolidation of IINNS in 1969. It should be particularly noted that in the years reviewed the budgeted transfers from the Treasury were provided in full and on schedule, which serves to point up the priority the Peruvian Government assigns to the work of IINNS. Moreover, IINNS's own revenues increased considerably beginning in 1970, as compared to 1969, exceeding the figures budgeted in both 1970 and 1971. This increase was basically the result of the higher fees charged in 1970 for the services of IINNS institutions.
- 2.36 The study made has shown that IINNS possesses a satisfactory budget execution capacity, as may be seen from the foregoing table comparing actual expenditures with budgeted expenditures and actual receipts. In the period 1969 and 1970, actual expenditures tallied almost 100% with budgeted expenditures and actual revenues. Budget performance in terms of spending in 1971 lagged behind previous years although 87.8% of projected outlays were made, which could be considered acceptable. The curtailment of actual expenditures in 1971 occurred mainly in the "capital investments" item and to a lesser extent in "inputs of goods and services". It derived from the fact that only those capital investments required to ensure adequate maintenance of services were made in that year, since the decision to initiate comprehensive physical and technological development of the institutes as reflected in the present operation made it inadvisable to undertake partial investments not essential to the provision of services. Despite this decline in "capital investments", IINNS income in 1971, including that generated but uncollected as of December 31, 1971, far exceeded the same receipts in 1970, which would appear to confirm the fact that the cutback in capital investments did not affect the regular provision of services by the institutes.
- 2.37 The balance sheet for budget execution in 1970, broken down by the different institutions, is given below by way of illustration:

(Equivalents in thousands of US\$)

	Own Revenues	Transfers from Treasury	Total Revenues	Expenditures	Balance
ISP	163 ^{1/}	698 ^{2/}	861	697	164
IN	14	114	128	136	(8)
IZIP	222	266	488	334	154
CCPBM	10	85	95	100	(5)
ISO	-	284	284	322	(38)
Total	<u>409</u>	<u>1,447</u>	<u>1,856</u>	<u>1,589</u>	<u>267</u>

^{1/} Includes CCPBM's revenues from fees for different analyses and sales of narcotic products, which IINNS combines in its budget statements with the revenues of ISP.

^{2/} Includes the equivalent of US\$406,000 to cover the costs of IINNS's general administration.

- 2.38 It is pertinent to note that IINNS's financial administration is centralized in the Office of the Director of General Administration, where the accounting adjustments required to financial operations of the various institutions are made, in accordance with the guidelines for IINNS's general budget. In this way the financial results of the different IINNS institutes are balanced out, as can be seen from the above table.
- 2.39 IINNS is presently operating under a two-year budget for the period 1971-72, as shown below: 1/

(Equivalents in thousands of
US\$)

Receipts

a. Own revenues	646.0
b. Transfers from Treasury	2,730.8
Total Receipts	<u>3,376.8</u>

Expenditures

a. Staff remuneration	2,095.2
b. Inputs of goods and services	929.3
c. Capital investments	241.5
d. Other operating costs	100.8
Total Expenditures	<u>3,376.8</u>

- 2.40 The amounts of the above two-year budget are considered adequate for the operating requirements of the institution up to 1972, bearing in mind that the impact of project execution on operating expenditure would not be felt before 1973. In effect, as the table in paragraph 2.34 indicates, Treasury transfers to IINNS in 1971 were equivalent to US\$1,447,000, which, against the US\$2,730,800 budgeted for 1971-72, leaves the equivalent of US\$1,283,800 to be received from the Treasury for 1972. To this amount must be added the remainder of 1971 IINNS receipts not utilized in that year, totaling US\$267,000 equivalent, as shown in the table under paragraph 2.37. These amounts aggregate the equivalent of US\$1,550,800, which is more than the level of Treasury transfers in 1971. In addition, IINNS revenues in 1972, maintaining a consistently upward historical trend, would amply supplement the funds required for 1972. In future, as the construction work, supply

1/ Since 1971, the Peruvian Government has been using two-year budgets for public authorities.

of equipment and training of personnel envisaged under the proposed project proceed, IINNS's operating budget would rise along with the expansion of its operating capacity. 1/

- 2.41 Finally, it is considered appropriate to take into account here that the Government of Peru: a) as the borrower under the proposed operation, would assume responsibility for service and amortization of the loan, and b) would allocate the resources necessary for the local counterpart through the Ministry of Economic Affairs and Finance, in accordance with the current national budget structure. These factors will not therefore have any incidence on IINNS's operating budget. It should also be noted in this connection that an appropriation equivalent to US\$3.15 million specifically earmarked for the local contribution to the proposed project has been included among the items for the Ministry of Economic Affairs and Finance in the operating budget of the Republic of Peru for 1971-72. A detailed analysis of the sources of the local contribution and the financial feasibility of the proposed operation is given in Chapter IV of this loan document.

H. Administrative and Technical Capacity of IINNS

- 2.42 Examination of the administrative aspects of IINNS has shown that the institution currently has an acceptable capacity for carrying out its present activities. However, execution of the proposed project would considerably expand the economic dimension of IINNS and compel the adoption of a capital accounting system ensuring complete control of its assets and particularly inventories, accounts receivable, fixed assets and production costs and the preparation of balances showing financial and asset position. Yet the efficiency of its programming and management of budget accounting are satisfactory, and the staff responsible for this work have received adequate technical training and possess proven administrative capability.
- 2.43 The operations missions dispatched to study the present project 1/ were able to note the concern of the IINNS senior staff for improving, insofar as possible, the efficiency of the institution, mainly on the administrative and financial side. The fact that review of the accounting system has already been started, as noted under 2.31, is indicative of this concern. In order to ensure that these efforts to improve the financial administration are continued at the pace required,

1/ The increase in operating costs would be partially covered by a growing inflow of the institution's own resources, which are expected conservatively to rise at 10% yearly. In addition, as from 1973, it would also be necessary to increase the transfers from the Treasury compared with the 1971-72 budget levels in order to meet the operations expansion triggered by execution of the proposed project. (See Chapter IV.)

2/ See Chapter I.

it is recommended that the prospective loan contract stipulate that IINNS must submit to the Bank within 12 months of the signature of such contract, evidence that it has established a capital and cost accounting system and adequate internal control procedures for the recording and supervision of its operations. (See Chapter V, Conclusions and Recommendations.)

- 2.44 Despite the institution's present adequate administrative capacity, it is considered that this aspect should be strengthened if the proposed operation is approved, since IINNS has no experience in executing a project of the scale and complexity of the one described in this document. Accordingly, to guarantee efficient execution of the project, an executing office has been established that would be responsible for, among other things, preparing bidding specifications, awarding contracts and supervising construction and for keeping the financial records of the project. It should be noted that this executing office would have the assistance, whenever deemed necessary, of the Office of the Director of Construction, Equipment and Maintenance of Works of the Ministry of Public Health, which has extensive experience with the execution of construction programs for that ministry. 1/ In addition, the firm of Williams and Núñez, architects and designers, which has been engaged to prepare the building plans, would be responsible for technical supervision of the construction of physical works included in the project. 2/ (See Chapter III.)
- 2.45 The assessment of IINNS technical activities, carried out with the assistance of outside consultants and PAHO staff 3/ leads to the conclusion that the institution has technical professional personnel of high caliber and experience at the director and deputy director level. At the same time, it is apparent that the present operating capacity of the different institutes, apart from ISO, is limited, owing to the following factors: a) inadequate premises; b) geographic dispersal of the different institutes, which makes both the utilization of common general services and the more rational use of resources difficult; c) obsolescence and inadequacy of equipment, and d) shortage of trained personnel in intermediate technical positions.
- 2.46 As set out in Chapter III of this loan document, the proposed project is oriented, in an integral and coordinated fashion, toward the removal

1/ This office handles matters relating to the activities indicated by its title when requested by the Office of the Executive Director of the Health Ministry.

2/ The hiring of this firm would be financed exclusively from the local contribution to the project.

3/ See the section relating to missions in Chapter I.

of these limitations. Specifically, IINNS's technical capacity would be substantially expanded with the premises and equipment envisaged in this project. At the same time, and as an element of fundamental importance, the project envisages the training of the medium and technical personnel needed for efficient utilization of the planned new premises and equipment. The training program has been prepared with the assistance of experts specially engaged by the Bank for the study of the various technical aspects of the present project ^{1/}, and includes the following: a) hiring of 15 consultants for a total of 73 man-months for the in-service training of personnel, and b) a plan comprising 55 fellowships, for a period of approximately 500 man-months, for the training, largely in foreign specialized institutions, of local staff. ^{2/}

- 2.47 Finally, it should be noted that, in view of the importance of planning and coordinating the technical activity of the different institutes, especially following the functional and physical integration that would be achieved with the execution of the proposed project, it is considered advisable to strengthen the planning of activities and resource utilization of IINNS, at present carried out only partially through the Coordination Committee and Commissions. IINNS has made this its concern and is actively considering establishing a planning office whose basic responsibility will be the integral and permanent planning and coordinating of preparation and execution of work plans and programs for the IINNS institutes. In order to keep a check on progress in so important a matter, it is recommended that the prospective loan contract stipulate that IINNS shall submit to the Bank, within six months from the date of signature of the contract, its plan for establishment of the planning office referred to, together with a schedule for its implementation. In this way, once the proposal for establishment of that office and its implementation plan had been reviewed by the Bank's technical units, there would be enough time available to ensure regular operation of the office prior to completion of the proposed project. (See Conclusions and Recommendations.)

I. Legal Capacity of Borrower and Executing Agency

- 2.48 There are no obstacles of a legal nature that would prevent the Republic of Peru from contracting the loan applied for or IINNS from executing the project proposed.

^{1/} Drs. Anderson and Gebhard, who are referred to in Chapter I, took an active part in preparing the personnel training programs included in the project.

^{2/} The technical assistance plan of operations included as Annex B provides detailed information on the training program, including the specialization and period of service of each consultant, fields of specialization envisaged in the fellowship program and duration of each, together with the distribution by institutions.

III. THE PROJECT

A. Objectives and Targets of the Sectoral Health Plan, 1971-75

- 3.01 As indicated previously, the health sector is responsible for implementing the promotion, protection and recovery of human and animal health, as well as the rehabilitation, social welfare and protection of minors. The activities of this sector are programmed and executed in conformity with the guidelines established in the Sectoral Health Plan for 1971-75. This plan, together with the other sectoral plans, comprises the National Development Plan for 1971-75.
- 3.02 The Sectoral Health Plan for 1971-75 establishes the medium-term objectives of the sector while simultaneously embodying a consistent series of measures designed to achieve the proposed objectives. The aforesaid objectives and activities are summarized as follows:
- a. To expand the coverage of health services, particularly for underprivileged groups. For achievement of this objective, the following measures are proposed: (i) to penetrate the rural area, integrating sectoral activities with community development programs; (ii) to make available to the needy sectors of the population basic medicines for restoring health; (iii) to establish the Medical Social Service as a prerequisite for free exercise of the medical profession, and (iv) to stimulate increased private sector participation in the provision of medical hospital services.
 - b. To expand preventive services, rechanneling sectoral resources with the object of meeting priority needs. To this end, it is planned to adopt the following measures: (i) to strengthen vaccination and sanitation programs; (ii) to intensify control of tuberculosis and other communicable diseases; (iii) to continue campaigns for the eradication of malaria and smallpox; (iv) to strengthen the child nutrition program, and (v) to study the problem of environmental pollution in the principal cities of the country.
 - c. To increase production and productivity of the sector, through the following measures: (i) to improve intrasectoral and intersectoral coordination so as to ensure full utilization of health resources, thereby avoiding duplication of investments; (ii) to increase financial resources allocated to the sector for the purpose of ensuring the high quality of health services; (iii) to introduce administrative rationalization measures in order to improve the return on available resources, and (iv) to expand training programs with the object of improving the quality of human resources in the sector.

- d. To stimulate and orient research and study related to the country's health problems and to achieve sufficient production of immunizing biologicals. To achieve this objective, it is planned to give resolute support to IINNS production, research and diagnosis functions.
 - e. To reorient social welfare so as to ensure participation by underprivileged groups in social changes and progress. The policy measures proposed for achieving these objectives include the following: (i) promotion of community participation in the solution of social problems, and (ii) development of promotional and assistance activities for families, young people and minors, particularly in agrarian reform areas.
- 3.03 The measures proposed in the Sectoral Health Plan will necessarily entail modification of the factors governing the level of health, which cannot be quantified on the basis of existing knowledge. Moreover, because of insufficient information at the sectoral level, it is not possible to express the plan targets in terms of improving public health levels and social conditions, such as reduction of mortality and morbidity rates or quantification of the impact of the sectoral plan on underprivileged groups. Because of these circumstances, the plan is presented in terms of targets for activities, in the knowledge that expansion of health action will have a multiplying effect on the standard of living since it will be paralleled by expanded work in other sectors - both economic and social.
- 3.04 The following table summarizes some of the principal targets of the over-all activities established in the Sectoral Health Plan for 1971-75.^{1/}

^{1/} For additional information on the targets of over-all activities, see "Sectoral Health Plan, 1971-75", Ministry of Public Health, Sectoral Planning Office, Lima, Peru, 1970, pp.46-80.

(In thousands of units)

	<u>1971</u>	<u>1975</u>
a. Hospital discharges (persons)	534	614
b. Out-patient medical service (visits)	21,874	27,199
c. Dental care (visits)	5,886	7,458
d. Simple medical treatment (applications)	1,712	3,193
e. Inspection of environmental sanitation	321	477
f. Vaccinations (doses)	13,154	15,066
g. Production of antigens for veterinary use	10,000	13,100
h. Food service (rations)	2,968	3,209

- 3.05 It should be pointed out that the foregoing paragraph describes a series of program goals constituting an integrated complex of specific goal-related activities undertaken by the various institutions and organizations that make up the public health sector, including government and private organizations. Goal-related activities of government institutions and organizations are, in turn, part of a comprehensive program of public investment in the public health sector which identifies specific investment projects to be implemented during 1971-75. 1/

B. Purposes of the Proposed Project

- 3.06 The sectoral health plan specifically provides for the project described in this document. Timely execution of the project is of fundamental importance in achieving the objectives and goals stated in the plan. The principal aims of the proposed project are as follows:
- a. To provide for a more effective and rational utilization of resources, and avoid duplication of investments by incorporating IINNS physical facilities into a single architectural, technical and administrative complex.
 - b. To expand the institution's own research, diagnostic and production commensurate with future requirements.

1/ Chapter IV of this document examines the economic justification for the project and analyses for public investment in the health sector.

- c. To raise the technical skills of personnel to a higher level in order to ensure rational utilization of capital investment and the quality of services provided by IINNS.
- d. To increase general productivity in the performance of all IINNS activities and functions.

C. Project Description

- 3.07 In keeping with the stated purposes, development of physical and technical facilities at IINNS would be achieved by: (a) erecting buildings to form an integrated architectural complex that will facilitate the physical, technical and administrative complementation of IINNS activities; (b) providing special laboratory equipment and installations, and (c) training of personnel by contracting consultants and implementing a fellowship program. These activities would be carried out at four of the five institutions comprising IINNS: the Institute of Public Health (ISP); the Zoonosis and Livestock Research Institute (IZIP); the Nutrition Institute (IN), and the Central Center for Biological Products and Medicines (CCPBM).
- 3.08 It should be noted that the Institute of Occupational Health (ISO), also a part of IINNS, now operates in a suitable building provided with adequate facilities, equipment and technical personnel, as verified by on-site inspections and by studies made in cooperation with experts and consultants specially engaged by the Bank to provide advisory assistance in making a technical analysis of the proposed operation; this confirms the information contained in the loan application. It was felt, therefore, that ISO should not be included in the proposed project. Nevertheless, it should be pointed out that the master plan for development of IINNS calls for eventual location and construction of a building for that unit, when its present facilities and technical capacity become inadequate.
- 3.09 The construction and provision of equipment for the laboratory for foot-and-mouth disease diagnosis, research and vaccine, production and control, which would be an organizational unit of IZIP, is included in the Foot-and-Mouth Disease Control Program; a loan application for its partial financing has been submitted to the Bank by the Government of Peru. As stated in Chapter II, IINNS would undertake this part of the Foot-and-Mouth Disease Control Program in addition to the activities called for in this project. Provision was made in the IINNS master plan for siting this laboratory, and its construction would be carried out on a priority basis, if possible, in connection with other IZIP facilities to be installed, in order to provide suitable support for development of the Foot-and-Mouth Disease Control Program.

1. Construction of Buildings

- 3.10 The buildings comprising the IINNS architectural complex would be erected on a tract of about 52 hectares of land owned by the institution

located in the Chorrillos district, in the far southern part of the Lima metropolitan area. 1/ The architectural complex calls for construction of 25 buildings or units with about 25,650 square meters of total construction area, assigned as follows:

<u>Institutes and Premises</u>	<u>No. of Buildings as Units</u>	<u>Area in Square Meters</u>
1. Institute of Zoonosis and Livestock Research	3	1,530
2. Institute of Public Health	11	7,860
3. Control Center for Biological Products and Medicines	1	1,620
4. Nutrition Institute	1	3,240
5. Support Services, General and Technical <u>2/</u>	5	7,470
6. Office of the General Director and Administration	1	1,530
7. General Common Facilities <u>3/</u>	<u>3</u>	<u>2,400</u>
Total	<u>25</u>	<u>25,650</u>

- 3.11 The layout of buildings in the architectural master plan calls for a central core consisting of the Office of the General Director and Administration, common facilities and general support services which must be strategically located because of their frequent use or to economize on systems. Since its activities require continuing contacts with the general public, CCPBM is also located in this core. Areas set

1/ Thirty hectares of the total land tract were acquired by IZIP several years ago and, when IINNS was formed, became part of the latter's of assets. As indicated in Chapter II of this document, the Production Division IZIP is operating in a small section of the 30-hectare land tract. In order to provide space for new facilities called for by the project, in 1971, IINNS acquired 22 more hectares of land adjacent to the original tract. As the table in paragraph 3.18 shows, under the project cost heading of "Land", only the cost of these 22 additional hectares of land was computed.

2/ These structures include suitable premises for experimental animals, central cleaning and sterilization units, preparation of media, warehouses and shops, and regular staff housing.

3/ Includes main library, auditorium and cafeteria.

aside for production activities and research laboratories are arranged in symmetrical relation to the central core. Premises used for inoculation will be adjacent to a service road connecting them with the animal quarters and the cleaning and sterilization unit. For technical reasons, the laboratory for foot-and-mouth disease diagnosis, research and vaccine production and control will have to be housed in an area outside the main traffic pattern for vehicles and pedestrians. As a result, it will be located some distance from the other buildings, surrounded by a security wall and served by controlled access roads. Nevertheless, it would still be able to use the general services as it required.

- 3.12 The architectural complex will include construction of all urban utilities such as connecting roads, water supply and sewerage, power lines and substations, and other special installations.

2. Provision of Laboratory Equipment and Special Installations

- 3.13 The proposed project calls for providing new laboratory equipment, as well as special installations compatible with the new physical facilities of IINNS. Consultants to PAHO and the Bank, jointly with IINNS technical staff, made a thorough examination to determine equipment and special installations requirements. To this end, additional needs were studied, taking into consideration: (a) equipment and installations still in serviceable condition; (b) the need to replace obsolete equipment, and (c) additional requirements connected with the expansion of activities that would result from execution of the proposed project.
- 3.14 Based on the studies, itemized lists were drawn up of laboratory equipment and special installations needed for activities of the several institutions and the provision of general services. The following table lists requirements for laboratory equipment and special installations:

<u>Service</u>	<u>(In thousands of US\$ or equivalent)</u>
1. IZIP	395
2. CCPBM	130
3. ISP	380
4. IN	285
5. General Services	537
Total: Equipment and Installations ^{1/}	<u>1,727</u>

^{1/} The estimated cost of this equipment at prices in effect during July 1971, when a technical group of IDB officials and PAHO officials and consultants visited Peru (see Chapter I). The amount does not include an allowance for price escalation, which is estimated at the equivalent of US\$231,000. (See table on total project cost in paragraph 3.18.)

3. Personnel Training

- 3.15 As an integral factor of major importance in the physical and technological development program of IINNS, the proposed project calls for training professional personnel of that institution through a fellowship plan and the contractual services of consultants. To this end, the project includes an item equivalent to US\$500,000 which would be allocated to finance such training activities, as described in the technical assistance plan of operations included as Appendix B of this document.
- 3.16 As indicated previously (see Chapter II), the personnel training program was prepared in cooperation with PAHO experts and Bank consultants on the basis of an evaluation of present technical capacity of professional IINNS personnel in relation to projections of future activities.
- 3.17 The personnel training program includes the following: (a) a 55-fellowship plan for training local personnel, mainly in specialized foreign institutions, and (b) the contractual services of 15 consultants for in-service training of IINNS professional and technical staff. The following table summarizes the allocation, by institute, of fellowships and consultants' contracts, indicating the duration of these activities.^{1/}

<u>Institute</u>	<u>Consultants</u>		<u>Fellowships</u>	
	<u>Number</u>	<u>Man-Months</u>	<u>Number</u>	<u>Man-Months</u>
1. IZIP	5	33	9	96
2. CCPBM	2	6	8	60
3. ISP	2	4	22	162
4. IN	6	30	16	192
Total	<u>15</u>	<u>73</u>	<u>55</u>	<u>510</u>

D. Total Project Cost

- 3.18 The estimated total cost of the project would be equivalent to US\$10.5 million itemized as follows:

^{1/} The technical assistance plan of operations (Appendix B) describes the general terms of reference for consultants, fields of specialization under fellowship plan and tentative schedule for implementation of this part of the project.

(In thousands of US\$ or their equivalent)

<u>Category of Investment</u>	<u>Foreign Exchange Costs</u>		<u>Local Costs</u>	<u>Total</u>	<u>%</u>
	<u>Direct</u>	<u>Indirect</u>			
1. <u>Engineering and Administration</u>					
1.1 Engineering and plans <u>1/</u>	-	-	203	203	1.9
1.2 Executing office <u>2/</u>	-	-	233	233	2.2
2. <u>Construction and Urban Development</u> <u>3/</u>	899	594	4,030	5,523	52.6
3. <u>Laboratory Equipment</u> <u>4/</u>	1,652	-	306	1,958	18.6
4. <u>Concurrent Costs</u>					
4.1 Land <u>5/</u>	-	-	584	584	5.6
4.2 Training <u>2/</u>	400	-	100	500	4.8
5. <u>Financial Costs</u>					
5.1 IDB interest and charges <u>6/</u>	70	-	335	405	3.9
5.2 IDB Inspection and Supervision Fund	55	-	-	55	0.5
6. <u>Unspecified</u> <u>7/</u>	<u>334</u>	<u>66</u>	<u>639</u>	<u>1,039</u>	<u>9.9</u>
Total	<u>3,410</u> (32.5%)	<u>660</u> (6.3%)	<u>6,430</u> (61.2%)	<u>10,500</u> (100.0)	<u>100.0</u>

- 1/ Includes the cost of draft projects on which construction cost estimates were based, definitive architectural and construction plans to be completed in July 1972 and technical supervision of works.
- 2/ These items include a 10 percent provision for contingencies.
- 3/ Includes provision for contingencies related to construction and price rises, estimated at 5.6 percent per annum.
- 4/ An annual 5.6 percent provision is estimated for price rises.
- 5/ Represents the cost of 22 hectares of land purchased by IINNS in 1971 to complete the area required for implementing the proposed project.
- 6/ Includes interest and service charge during project execution period.
- 7/ General contingency costs of the "Construction and Urban Development" and "Laboratory Equipment" items, accounting for 13.9 percent of the total costs of these items, are included under this heading.

- 3.19 The cost estimates were based on studies carried out by IINNS, and were revised and updated following field studies performed by an operations mission of the Bank in April 1971 and those of a technical group in July 1971. 1/ The final draft projects pertaining to the over-all architectural work, completed in August 1971, were used in determining construction costs. They included modifications and adjustments derived from the technical studies. The aforementioned costs were determined by estimating unit costs -both external and local- while taking into account the Bank's experience in previous projects in Peru, as well as special requirements in relation to installations inherent in the special nature of the proposed buildings. Cost estimates of laboratory equipment were based on the most recent available international quotations, in the case of equipment to be purchased abroad, and on investigation of local prices for purchases to be made in Peru. 2/ It is considered advisable to reiterate also that cost estimates of construction and equipment include an annual contingency provision of 5.6 percent for price increases.

E. Financing Plan

- 3.20 The total cost of the project would be financed as follows:

(In thousands of US\$ or their equivalent)

<u>Source</u>	<u>Source of Funds</u>		<u>Use of Funds</u>		<u>Total</u>	<u>%</u>
	<u>Foreign Exchange</u>	<u>Local Currency</u>	<u>External Costs</u>	<u>Local Costs</u>		
1. IDB-FSO	4,500 <u>3/</u>	1,000	4,000	1,500	5,500	52.4
2. Government of Peru	<u>70</u>	<u>4,930</u>	<u>70</u>	<u>4,930</u>	<u>5,000</u>	<u>47.6</u>
Total	<u>4,570</u>	<u>5,930</u>	<u>4,070</u> <u>4/</u>	<u>6,430</u>	<u>10,500</u>	<u>100.0</u>
	(43.5%)	(56.5%)	(38.8%)	(61.2%)	(100.0%)	

1/ As indicated in Chapter I, in April 1969 the Bank granted reimbursable technical assistance (AT-SF-65-75-PE) to the Ministry of Public Health for partial financing of the general feasibility studies on which the loan application for the proposed project was based.

2/ The equipment to be purchased locally would be that produced nationally which shows a clear comparative advantage in relation to similar products that could be imported. This category includes laboratory furnishings and instruments, tables, closets, cabinets, etc. The equipment to be imported consists of technical instruments which cannot be obtained locally.

3/ Up to 11.1 percent of the foreign currency proceeds of the proposed loan (equivalent to US\$500,000) would be used to cover local costs.

4/ Includes indirect foreign exchange costs totaling US\$660,000.

- 3.21 The resources of the requested loan disbursed in foreign exchange (US\$4.5 million) would be used for financing -through international public invitations to bid- the purchase of laboratory equipment and part of the cost of construction contracts included in the project, applying margins of preference acceptable to the Bank, whenever appropriate. Additionally, these resources would cover external costs of technical assistance (fellowships and contracts of consultants not subject to bidding) and the contribution to the IDB Inspection and Supervision Fund. In brief, the resources to be disbursed in foreign exchange would cover foreign currency costs -both direct 1/ and indirect- as well as the purchase of goods and services considered to be of local origin up to the equivalent of US\$500,000. Local expenditures to be financed with dollar proceeds of the proposed loan are included in the local component of the costs of construction contracts to be awarded through international public bidding.
- 3.22 On the other hand, the funds to be disbursed in sols (equivalent to US\$1 million) would finance part of the local currency costs of the construction contracts awarded on the basis of the international public bids mentioned in the preceding paragraph. The portion of the loan to be allocated to financing local costs would total the equivalent of US\$1.5 million, or 14.3 percent of the total project cost and 23.4 percent of its local currency cost. Local costs of the project would be financed through the IDB loan as follows: 7.8 percent in foreign currency and 15.6 percent in local currency. The local contribution would be used for financing the remaining 76.4 percent entirely in local currency.
- 3.23 National counterpart funds would be used for financing the following: (a) construction costs; (b) costs of the project executing office and technical supervision to be carried out by the architects, with the object of complying with specifications and designs; (c) the balance of local currency costs of construction contracts included in the project; (d) purchase of nationally-produced laboratory equipment; (e) the purchase cost of 22 hectares of land needed for the project; (f) local technical assistance costs (training), and (g) financial costs during the period of project implementation (interest and IDB service charge). (See paragraph 3.26.)
- 3.24 The following table summarizes use of the proceeds of the requested loan and local counterpart funds, distributed by investment category as follows:

1/ Excludes direct foreign currency costs of the IDB service charge.

(In thousands of US\$ or their equivalent)

Item Category	IDB-FSO			Government of Peru			Total
	External Costs	Local Costs	Sub- total	External Costs	Local Costs	Sub- total	
<u>Engineering and Administration</u>							
Engineering and plans	-	-	-	-	203	203	203
Executing office	-	-	-	-	233	233	233
<u>Construction and Urban Development</u>	1,493	1,444	2,937	-	2,586	2,586	5,523
<u>Laboratory Equipment</u>	1,652	-	1,652	-	306	306	1,958
<u>Current Costs</u>							
Land	-	-	-	-	584	584	584
Training	400	-	400	-	100	100	500
<u>Special Costs</u>							
IDB interest and charges	-	-	-	70	335	405	405
IDB Inspection and Supervision Fund	55	-	55	-	-	-	55
<u>Unspecified</u>	<u>400</u>	<u>56</u>	<u>456</u>	<u>-</u>	<u>583</u>	<u>583</u>	<u>1,039</u>
Total	<u>4,000</u> 1/	<u>1,500</u>	<u>5,500</u>	<u>70</u>	<u>4,930</u>	<u>5,000</u>	<u>10,500</u>
	(38.1%)	(14.3%)	(52.4%)	(0.6%)	(47.0%)	(47.6%)	(100.0%)

includes indirect foreign currency costs totaling US\$160,000.

F. Project Implementation

1. Implementation Period and Investment Schedule

- 3.25 The schedule of investments calls for implementation of the project within a period of four years from the date of the proposed loan contract. This schedule -broken down into the respective sources of funds- is presented below:

(In thousands of US\$ or their equivalent)

Year	IDB		Government of Peru		Total	
	Amount	%	Amount	%	Amount	%
First	916	16.6	1,543	30.9	2,459	23.4
Second	2,095	38.1	1,535	30.7	3,630	34.6
Third	1,891	33.1	1,261	25.2	3,080	29.3
Fourth	670	12.2	661	13.2	1,331	12.7
Total	<u>5,500</u>	<u>100.0</u>	<u>5,000</u>	<u>100.0</u>	<u>10,500</u>	<u>100.0</u>

- 3.26 In 1971 IINNS purchased 22 hectares of land adjoining the 30 hectares it owns in the district of Chorrillos for the purpose of implementing the proposed project. In 1971, appraised value of the abovementioned purchased land was equivalent to US\$584,000. Furthermore, since February 1971 IINNS has been financing, with its own resources, costs related to the preparation of preliminary construction projects and definitive architectural and construction plans. ^{1/} The formal architectural and construction plans, including detailed specifications and bidding bases, would be completed in July 1972, at the latest. Thus, engineering and plan costs would total the equivalent of US\$137,000. During meetings with representatives of IINNS, the latter requested that the Bank recognize the aforementioned investments as part of the counterpart contribution to the project under consideration. As this request is considered reasonable, it is recommended that, if the proposed operation is approved, investments made therein prior to the date of the proposed loan contract but after January 14, 1971, be recognized as part of the local contribution to the project, provided that: (i) the amount of the aforesaid investments does not exceed the equivalent of US\$721,000, and (ii) requirements substantially similar to those to be established in the loan contract (see Conclusions and Recommendations) are fulfilled in making the abovementioned investments.

2. Engineering Studies, Plans and Designs

- 3.27 As stated elsewhere in this loan document, on April 2, 1969, an agreement on reimbursable technical assistance was concluded by the Bank

^{1/} These costs do not include those pertaining to technical assistance provided by the Bank to the Ministry of Public Health in April 1969.

and the Ministry of Public Health of Peru for an amount equivalent to US\$40,000. The aim of this technical assistance was to finance partially the costs of contracting a consulting firm to study -for the health sector- the feasibility and alternatives of expanding national capacity for production of biological products for human and animal use, as well as such supplementary studies as might derive from the analysis of alternatives. ^{1/} To carry out the aforesaid studies, the Ministry of Public Health contracted the services of the Diewald-Viale, S.A., firm, and it was agreed that this should be included in the functions and responsibilities of the newly formed IINNS.

- 3.28 On April 15, 1970, the borrower transmitted to the Bank a study entitled "Projects for Development of National Health Institutes", which subsequently provided the basis of general feasibility studies designed to support the loan application covered by this document. The Bank disbursed the equivalent of US\$21,170 of the aforesaid technical assistance and, at the request of the borrower, has canceled the balance, equivalent to US\$18,830. Furthermore, it should be mentioned that the estimated cost of the proposed project does not include the cost of the study financed in part with the abovementioned technical assistance. The latter was granted on a reimbursable basis and, consequently, the Government of Peru would continue the appropriate amortization and service on the conditions established in the respective technical assistance agreement.
- 3.29 Plans for construction of the IINNS architectural complex are in the final draft project stage; these plans prepared by the Williams and Núñez architectural firm, which won the competition for preparation of the final draft projects. As indicated previously, these drafts were adjusted and completed in August 1971 by the aforesaid firm on the basis of technical studies carried out and were used in estimating construction costs of the proposed project. The final plans pertaining to architecture, structure, and special electrical, water, mechanical and other installations, as well as construction specifications and bases for bidding, including those pertaining to the laboratory for foot-and-mouth diagnosis, research and vaccine, production and control covered by the Foot-and-Mouth Disease Control Program, are being prepared by the Williams and Núñez architectural firm under a contract concluded with IINNS on May 27, 1971, and will be completed in July 1972, at the latest. Satisfactory progress has been observed in these activities and no obstacles are anticipated to preparation of the appropriate documentation and adequate adherence to the tentative schedule for bids (see paragraph 3.35).

^{1/} It was not possible to utilize the technical assistance resources within the period established in the agreement -that is, prior to December 2, 1969- basically because of delays in legal procedures and administrative processing of the use of such resources by the Ministry of Health. Consequently, the period for disbursement was extended to December 2, 1970.

3. Administration and Technical Supervision of Implementation

- 3.30 The proposed project would be implemented under the responsibility and supervision of IINNS. To ensure adequate technical and financial administration of the project, an executing office has been set up within the organizational structure of IINNS. This office will have general responsibility for coordination and technical and administrative supervision of project execution. In this connection, IINNS informed the Bank recently that it had initiated selection and recruitment of the technical personnel needed. This office will also be responsible for construction and equipment of the laboratory for foot-and-mouth disease diagnosis and research and vaccine production and control, which is included in the Foot-and-Mouth Disease Control Program mentioned previously.^{1/} The executing office would be under the direct supervision of the Office of the Director General of IINNS and would function independently of its other administrative units. It would be supervised by a project manager, who would have direct responsibility for implementation of the project and adequate coordination with the Bank. The project manager would be assisted in his work by the following persons: (a) an architect or engineer, who would be a specialist in construction of laboratories, for supervision of such work; (b) an expert in installations and equipment, who would supervise the purchase and installation of equipment; (c) an expert in administration and accounting, who would keep the financial records of the project based on a suitable accounting plan, and (d) four assistants.
- 3.31 The basic functions of the executing office would be the following, among others: (a) to coordinate and supervise assistance, and training, as well as technical, administrative and accounting aspects of project implementation; (b) to prepare and review documents pertaining to bids, to issue invitations to bid, to let the respective contracts and to supervise construction works; (c) to establish a system of financial records for follow-up of project operations, in connection with funds of the proposed Bank loan, as well as local contributions; (d) to authorize expenditures of project funds, on the basis of categories of investments, pursuant to the itemized list of goods and services, and (e) to prepare and present, in due course, to the Administration of IINNS and the Bank the initial, semiannual and final reports, together with all those that may reasonably be requested in relation to its responsibilities.
- 3.32 In addition, as required, the executing office would receive assistance from the Office of Construction, Equipment and Maintenance of Works of the Ministry of Public Health. The latter office has considerable experience in implementation of various construction programs of the

^{1/} See paragraph 3.09 and Chapter II.

Ministry of Public Health and, consequently, the executing office could avail itself of its advisory assistance, whenever it saw fit. 1/ Furthermore, the Williams and Núñez firm of project engineers and architects would be available for appropriate advisory assistance on technical supervision and direction of the work, in accordance with the contract concluded by that firm and IINNS (see paragraph 3.29). Such advisory assistance will be very important in ensuring fulfillment of the specifications and designs prepared by the firm.

- 3.33 It is believed that the organization and assigned functions of the executing office, which are described in paragraphs 3.30 and 3.31, ensure an organ capable of implementing and supervising the proposed project. Careful selection of personnel technically trained for carrying out the aforementioned functions will ensure efficient execution of the project. Consequently, it is recommended that, prior to initial disbursement of the proceeds of the proposed loan, IINNS demonstrate to the satisfaction of the Bank that the executing office has the technical and administrative capacity required for supervising execution of this project. 2/

4. Program for Purchases and Contracts

- 3.34 In purchasing laboratory equipment and other goods related to the project, and in awarding construction contracts, the public bidding system will be employed in all cases in which the value of such purchases or contracts exceeds US\$10,000. The bid bases would be governed by conditions approved by the Bank, taking into account existing Peruvian legislation and the purposes of the loan. In all instances in which the purchase of goods or construction of works with dollar proceeds of the proposed loan is contemplated, bidding will be international. However, for the procurement of certain laboratory equipment, IINNS could employ, with IDB approval in each case, other procedures consistent with the loan purposes. In this instance, the recommended exception to general Bank bidding policy results from the fact that in some cases the equipment to be acquired is produced by very few manufacturers and the public bidding procedure is not advisable. The same exception has been applied to IDB loans in the education sector for the same reasons; this type of equipment is usually ordered directly from technical catalogues.
- 3.35 The general procurement and contracting program has been based on technical studies carried out by staff members and consultants of the Bank and PAHO, in conjunction with IINNS officers and employees and includes the following: (a) the procedure for dividing or grouping bids to be financed in whole or in part with proceeds of the proposed loan, indicating the content and estimated value of

1/ This office participates in activities pertaining to its specialization upon request of the Administration of the Ministry of Public Health.

2/ See proposed resolution.

each bid; (b) the division of bids into international and national, and (c) a tentative schedule for each bid. The following table summarizes this information. It should be noted that the dates indicated would be adjusted in due course in terms of the date of prospective approval of the proposed operation.

SCHEDULE OF PROJECT BIDDING

	Amount (In thousands of US\$)	Invitations to Bid	Presentation of Proposals	Study and Award	Contract Signature	Construction Equipment
<u>National Bids</u>						
<u>Construction and Urban</u>						
Development	4,993 1/					
Urban development works	483	30-IV-72	30-VI-72	31-VII-72	15-VIII-72	1-IX-72
General services	336	30-IV-72	30-VI-72	31-VII-72	15-VIII-72	1-IX-72
General services	1,324	30-IV-72	30-VI-72	31-VII-72	15-VIII-72	1-IX-72
General services	296	31-V-72	31-VII-72	31-VIII-72	15-IX-72	30-XI-72
General services	1,372	31-V-72	31-VII-72	31-VIII-72	15-IX-72	30-XI-72
General services	564	30-IX-72	1-XII-72	15-I-73	31-I-73	1-III-73
Office of Director General						
Supervision and Administration	226	15-I-73	1-IV-73	1-V-73	15-V-73	15-VI-73
Common facilities	392	15-I-73	1-IV-73	1-V-73	15-V-73	15-VI-73
<u>Laboratory Equipment 3/</u>						
Laboratory Equipment	1,500 1/					
Laboratory Equipment	343	1-X-72	1-XII-72	1-I-73	1-II-73	1-III-73
General services	466	1-X-72	1-XII-72	1-I-73	1-II-72	1-III-73
General services	113	1-XI-72	1-II-73	1-III-73	31-III-73	31-V-73
General services	330	1-XI-72	1-II-73	1-III-73	31-III-73	31-V-73
General services	248	1-III-73	30-IV-73	31-V-73	30-VI-73	31-VI-73
<u>Local Bids</u>						
<u>Laboratory Equipment 4/</u>						
Laboratory Equipment	227 1/					
Laboratory Equipment	52	1-X-72	1-XII-72	1-I-73	1-II-73	1-III-73
General services	71	1-X-72	1-XII-72	1-I-73	1-II-73	1-III-73
General services	17	1-XI-72	1-II-73	1-III-73	31-III-73	31-V-73
General services	50	1-XI-72	1-II-73	1-III-73	31-III-73	31-V-73
General services	37	1-III-73	30-IV-73	31-V-73	30-VI-73	31-VI-73

Amounts do not include provisions for price increases, which have been estimated at US\$550,000 for construction and US\$79,000 for imported equipment and the equivalent of US\$79,000 for nationally-produced equipment. IZIP bids would be coordinated with those pertaining to the laboratory for foot-and-mouth disease and vaccine production and control, which is included in the Foot-and-Mouth Disease Control Program. Acquisition of certain laboratory equipment and instruments, IIPNS could, with prior Bank approval in procedures other than public bidding that are consistent with the loan purposes (see paragraph 3.34). As the respective purchases would be financed exclusively with IDA funds, they could be limited to national producers.

- 3.36 As indicated in the preceding paragraph, the dates of several contracts for works under the heading "Construction and Urban Development" coincide in all phases of the bidding. Consequently, efforts would be made to consolidate such contracts in groups, respectively, so as to comprise a single bid procedure. Thus, the invitation to bid would involve larger amounts which would be more attractive to prospective foreign bidders. This could encourage greater international competition which would serve to lower prices for the project. Likewise, in order to prevent the larger amounts resulting from the abovementioned groupings from discouraging the participation of qualified national firms which may be in a position to present favorable bids for some of the contracts thus grouped but not for all, the appropriate invitation to bid would allow for the possibility of receiving partial bids which would, as a minimum, cover one of the group contracts. It is believed that this would result in real competition among national and foreign firms which would redound to the exclusive benefit of the project. The same system would be applied to international bids on laboratory equipment. Finally, it should be noted that in the course of consideration of the loan application, IINNS officers were informed of the Bank's policies with regard to services and procurement contracts, including those pertaining to margins of preference, which were accepted by those officers.
- 3.37 In order to facilitate adequate control of the abovementioned procurement and contracts, it is recommended that -if the proposed operation is approved- the appropriate loan contract include the following stipulations:
1. Prior to the initial disbursement, IINNS will transmit to the Bank the regulations on public bidding together with a model of the contract pertaining to the type of construction in question, accompanied by the texts of the pertinent legal and regulatory provisions.
 2. Prior to specific disbursements for each construction operation, the following requirements will be fulfilled:
 - a. Prior to publication of invitations to bid on a job, IINNS will submit -to the satisfaction of the Bank- the following information: (i) the final plans, specifications and budgets, and (ii) the bases for bidding and the documents required for the invitation to bid;
 - b. Prior to awarding of the pertinent construction contract, IINNS will present to the Bank the results of the bidding and the terms of the aforesaid contract.

5. IDB Inspection and Supervision

- 3.38 The Bank's inspection and supervision of the project would be carried out by its specialist in urban development projects, who is located in Peru, with the technical advisory assistance of a nonpermanent external consultant specializing in works of this type, who will make a minimum of three inspection visits per year averaging one week each. The cost of such supervision would be covered with the resources of the appropriate Inspection and Supervision Fund of the Bank.

IV. PROJECT JUSTIFICATION

A. Technical and Administrative Feasibility

- 4.01 On the basis of technical analysis of the executing entity and the project presented, it can be concluded that the proposed operation is well prepared and is technically and operationally feasible. Institutional analysis has demonstrated that IINNS is carrying out its present functions and responsibilities satisfactorily. However, projections of future activities by the institution, based on the sectoral health plan, necessarily entail expansion of its general operational capacity, which would be achieved through implementation of the proposed project.
- 4.02 The executing office set up by IINNS for technical and financial administration of project execution has the structural conditions required to guarantee efficient implementation. Furthermore, it should be reiterated that the executive management of IINNS, which is aware of the administrative and financial implications of the new economic and institutional dimension planned for the entity, has already begun to reorganize its financial administration, seeking, among other objectives, establishment of an accounting system more in keeping with its future needs. On the other hand, establishment of a planning office ^{1/} would significantly strengthen planning and coordination on an integrated and permanent basis, as well as preparation and implementation of IINNS work plans and programs, promoting more efficient use of human and capital resources. Therefore, in view of the activities initiated by IINNS and those planned for the proposed operation, it is evident that IINNS possesses sufficient technical and administrative competence to implement the proposed project and ensure rational use of its resulting expanded operational capacity.
- 4.03 The proposed project has been organized in conformity with the action targets of the sectoral health plan so that its objectives and targets are coordinated with other national efforts in that area. Specifically, in relation to IINNS, the sectoral health plan establishes for the institution the following activities for the 1972-75 period:

^{1/} See Chapter II.

<u>Institute</u>	<u>1972</u>	<u>1975</u>
1. <u>ISP</u>		
a. Total vaccination doses	13,630,000	15,066,000
b. Examinations for diagnosis	669,000	731,000
2. <u>IN</u>		
a. Medical-nutritional examinations	200	16,000
b. Biochemical analyses	800	2,500
c. Chemical-microbiological examinations	5,100	8,000
d. Consumer surveys	394	600
3. <u>IZIP</u>		
a. Total vaccination doses for veterinary use	3,840,000	11,880,000
b. Antigens for diagnostic tests	128,000	930,000
c. Sample analyses	2,700	5,000
d. Diagnostic tests	73,000	126,000
4. <u>CCPBM</u>		
a. Number of products and samples	5,080	7,980
b. Number of analyses and examinations	24,965	54,320

- 4.04 Technical studies conducted jointly by the Bank in collaboration with external consultants and PAHO officers and specialists indicate that, under present conditions, IINNS cannot adequately achieve the work targets assigned to it by the sectoral health plan. Therefore, the plan for renewal and improvement of IINNS contemplated in the proposed project--which calls for construction of new buildings, provision of equipment and installations, and personnel training--is considered essential to enable it to carry out its important functions relating to the protection and recovery of human and animal health.
- 4.05 From the technical standpoint, the proposed project would be justified in view of the following considerations: (a) it would permit expansion of the research, diagnosis and production activities of IINNS at the levels required under the sectoral health plan; (b) it would facilitate planning and implementation of technical and administrative work; (c) it would permit improved use of technical support services and common facilities; (d) it would further a reduction in unit costs of production, operation and administration; (e) it would make it possible to provide sanitary services for residential areas among which the obsolete and unsuitable buildings of the various institutions are currently dispersed, and (f) it would improve the quality of the various services provided by IINNS.
- 4.06 Moreover, the specific features and approaches of the project embody the experience of national and international experts in the field of human and animal health and would help to consolidate practical application in Peru of the modern concept of a joint and comprehensive approach to human and animal health with a view to facilitating technical coordination and improved use of human and material resources,

as well as expanded production of goods and provision of health services and better scientific research.

- 4.07 All project construction and procurement, as well as the training of personnel, are clearly defined, and cost estimates are considered to be reasonable. The schedule for bids is considered realistic, in relation to projected needs for implementation of the project, and development of training activities has been carefully programmed and coordinated with execution of physical works and satisfaction of immediate IINNS needs. The contracts planned for procurement of goods and services for the project have been prepared adequately, on the basis of construction needs and the recommended financing sources. They are sufficiently attractive to guarantee broad competition among suppliers, which will ensure better quality and reduced costs in the goods and services to be procured. No substantial changes are expected in the amounts involved or in the schedule for contracts and purchases programmed.
- 4.08 Location of the architectural complex on the outskirts of Lima is justified by the isolation and privacy that would be ensured, which are essential for this type of facility. Despite its isolation, the area is characterized by accessibility and good communications with the metropolitan road system, by means of the old Pan American Highway and the beltway. The area is supplied with water, an abundant underground water table, and facilities for obtaining and expanding electric power supplies required for future use, as well as drainage facilities on the perimeter of the property which are connected to the city's system.

B. Financial Feasibility

- 4.09 In view of the special financial aspects of the proposed operation, the financial feasibility study has been divided into two parts: (a) financing of the local contribution to the project, and (b) analysis of financial implications of implementation of the project on IINNS operations (financial projections).
1. Financing of Local Contribution to Project
- 4.10 As stated in Chapter II, the Government of Peru would be the borrower in the proposed operation and would assume service and amortization of the loan requested. The local contribution funds for project implementation would be provided by the Government of Peru by means of special allocations and would not be drawn from the regular resources of IINNS. To this end, the local counterpart funds would be included by the Ministry of Economy and Finance in the investment items of the country's operating budget, specifically allocated to IINNS for purposes of the proposed project. 1/

1/ Pursuant to the budget structure of Peru, items allocated for investment expenditures are channeled through the Ministry of Economy and Finance.

- 4.11 In accordance with the schedule for project execution described in Chapter III of this document, the national resources required for implementing the project and for service on the loan requested have been quantified, indicating the year in which they would be utilized during the 1972-77 period.

(Equivalent in thousands of US\$)

<u>Year</u>	<u>Local Contribution to Project</u>	<u>Service and Amortization of Proposed Loan</u>
1972	1,543 <u>1/</u>	-
1973	1,535	-
1974	1,261	-
1975	661	-
1976	-	424
1977	-	416
Total	<u>5,000</u> <u>2/</u>	<u>840</u>

- 4.12 It should be mentioned that the above quantification of resources pertains exclusively to the amount and year in which the Government of Peru would make the local contribution to implementation of the proposed project and service of the loan. Therefore, it does not include Treasury transfers to cover regular operating requirements of IINNS, an aspect that is analyzed in paragraphs 4.14, 4.15 and 4.16.
- 4.13 The authorities of the Government of Peru have already adopted satisfactory measures for ensuring that national counterpart funds will be available in due course for adequate financing of project implementation. Under the items pertaining to the Ministry of Economy and Finance, the investment plan of the Peruvian operating budget includes an allocation equivalent to US\$3.1 million, which is specifically earmarked for IINNS as the local contribution to the operation under consideration. This amount covers the estimated requirements for 1972 and 1973, which total the equivalent of US\$3,078,000 and include, as stated previously, the equivalent of US\$721,000 in expenditures already effected, whose recognition as part of the local contribution has been recommended. 3/ Given the relative importance

1/ Includes the equivalent of US\$721,000 for investments in the project (land, equivalent to US\$584,000, and engineering and plans, equivalent to US\$137,000). It is recommended that these items be charged to the local contribution (see Chapter III).

2/ Includes IDB interest and service charge during execution period.

3/ See Chapter III.

of the local contribution required for full implementation of the project, it can be assumed that no difficulties will be encountered in terms of their punctual receipt. Furthermore, the high priority assigned by the government to the proposed project is another factor strengthening the financial feasibility of the proposed operation. In this connection, it should be mentioned that, in addition to the priority assigned to the latter by the Peruvian authorities, at the time the loan application was submitted to the Bank the Government of Peru reiterated to the latter, in a communication dated November 11, 1971 from the Ministry of Economy and Finance, its assurances that the national resources needed for implementing the project will be available on schedule.^{1/} In order to include the aforementioned commitments, in the proposed loan contract, the proposed resolution pertaining to this loan document includes provisions designed to ensure: (a) that, prior to the initial disbursement of the proposed loan, evidence be presented of the availability of the national resources needed to finance the local contribution for the first year of project implementation, and (b) that, at the appropriate time in subsequent years, similar evidence will be provided with regard to each year of the execution period.

2. Financial Projections of Project and IINNS

- 4.14 Throughout the period of implementation, the proposed project will expand the operating capacity of IINNS. Rational utilization of the resulting expansion of such capacity would necessarily entail an increase in the IINNS operating budget. Therefore, financial projections have been prepared to indicate the effects of the project on development of IINNS activities, even after its termination. These projections for the 1972-77 period are summarized in the following table:

^{1/} See Appendix E.

(In thousands of US\$ or their equivalent)

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>Source of Funds</u>						
1. For project execution						
a. Local contribution (Government of Peru) ^{1/}	1,543	1,535	1,261	661	424	416
b. IDB loan	<u>916</u>	<u>2,095</u>	<u>1,891</u>	<u>670</u>	<u>-</u>	<u>-</u>
Total	<u>2,459</u>	<u>3,630</u>	<u>3,080</u>	<u>1,331</u>	<u>424</u>	<u>416</u>
2. For IINNS operations						
a. Own resources	527	579	637	701	771	848
b. Treasury transfers	<u>1,466</u>	<u>2,072</u>	<u>2,477</u>	<u>2,682</u>	<u>2,950</u>	<u>3,133</u>
Total	1,993	2,651	3,114	3,383	3,721	3,981
<u>Use of Funds</u>						
1. Project execution	<u>2,459</u>	<u>3,630</u>	<u>3,080</u>	<u>1,331</u>	<u>424</u>	<u>416</u>
2. Operating costs of IINNS	<u>1,993</u>	<u>2,651</u>	<u>3,114</u>	<u>3,383</u>	<u>3,721</u>	<u>3,981</u>

4.15 Projections of sources and uses of funds for execution of the project are based on detailed implementation schedules. Estimates of local contribution requirements and of disbursements of the proposed IDB loan were prepared on the basis of those schedules. As indicated in the abovementioned projections, the project would be implemented during the first four years (1972-75). As of the fifth year (1976), projections of the "Local Contribution" and "Project Implementation" items represent the amounts to be used in service and amortization of the loan requested, responsibility for which, as indicated, would be assumed by the Peruvian Government.

4.16 Preparation of projections of IINNS operating costs took into account expansion of its physical and technical facilities and therefore embody

^{1/} Includes IDB interest and service charge in 1972-75; as of 1976, service and amortization of the proposed IDB loan (see paragraph 4.11).

^{2/} Includes the equivalent of US\$721,000 for investments made.

substantial increases in personnel, especially during the 1972-75 execution period. It should be noted that recruitment of new personnel during execution is determined mainly by the need to train such personnel before the project ends, so as to make full use of the new physical facilities. Furthermore, the rise in operating costs during the implementation period reflects the creation of administrative, professional and technical positions with remunerations more in keeping with the caliber of the personnel needed and, consequently, higher than at present. Accordingly, the level of operating costs projected assumes rational utilization--at any given moment--of the material facilities and human resources that would be available to IINNS. It has not been possible to measure accurately the expected evolution of the income of IINNS itself. Consequently, projections of such receipts are based on extremely conservative estimates. For example, it is estimated that in 1972 this income would total the equivalent of US\$527,000 and would increase at the rate of 10 percent per annum--a rate lower than that observed in recent years.

- 4.17 As indicated in the aforementioned projections, the proposed project would affect the level of IINNS operating expenditures as of 1973. The rise in operating costs would be offset in a small but growing measure by the increased inflow of the institution's own resources. However, Treasury transfers would continue to be the most important source of financing and, according to financial projections, an adequate increase in the volume of such transfers over that of the 1971-72 period would be necessary to ensure efficient use of the new IINNS facilities. Actually, as stated in Chapter II of this document, the two-year budget of IINNS for 1971 and 1972 contains Treasury transfers equivalent to US\$2,730,800, which implies an annual contribution approximately equivalent to US\$1,365,000. The annual increase in Treasury contributions over the 1972 level required for adequate utilization of the planned investments would be as follows:

(Equivalent in thousands of US\$)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Required	2,072	2,477	2,682	2,950	3,133
1972 contribution	<u>1,365</u>	<u>1,365</u>	<u>1,365</u>	<u>1,365</u>	<u>1,365</u>
Annual increase over 1972 level	<u>707</u>	<u>1,112</u>	<u>1,317</u>	<u>1,585</u>	<u>1,768</u>

Although the above figures represent substantial increases, they are not very significant in absolute terms. It should be noted that the required annual increases in Treasury transfers would be smaller than the amounts estimated in these financial projections to the degree that IINNS receipts exceed the estimates presented, as is expected to be the case in view of the reasons set forth in the preceding paragraph. Nevertheless, it is considered advisable to ensure continued support by the

Government of Peru for IINNS in the proposed loan contract so as to obtain maximum benefit from the investments to be made. Consequently, it is suggested that, if the proposed operation is approved, the appropriate loan contract stipulate that the Peruvian Government will undertake to provide for IINNS, during the life of the aforesaid contract, the financial resources necessary to guarantee rational utilization of the physical and technological facilities covered by the proposed project (see proposed resolution).

C. Economic Feasibility

1. Recent Economic Developments

- 4.18 The loan document for the first phase of the Foot-and-Mouth Disease Control Program contains a detailed evaluation of recent economic developments in Peru. It is recommended that these developments be considered jointly with this operation. (See paragraphs 4.16 through 4.25 of the loan document.)

2. Health Sector

- 4.19 At the last meeting of the CIAP Subcommittee on Peru, held in April 1971, changes in economic policy established by the government were analyzed in detail, together with their success. In connection with the health sector, the significant social importance attributed by the government to this sector, channeling efforts mainly toward low-income population groups, was emphasized. It was also noted that in the sector, the firm policy relating to the pharmaceutical industry, which calls for providing low-cost medicine to the public, is of priority importance, and that the orientation of research in this field, in which the government hopes to receive the support of external financial agencies is also important.^{1/}
- 4.20 Although the mortality rate declined from 1.7 percent in 1965 to 1.6 percent in 1969, and it is very likely that life expectancy at birth rose slightly, the general level of health in Peru is still unsatisfactory because of the prevalence of high morbidity and mortality rates caused by preventable diseases. This unsatisfactory health level is a significant negative factor in the country's economic and social development. The rapid increase in the population and internal migration, which have led to rapid urban growth, accentuates the existing imbalance between health resources and needs. The following factors should also be considered: (a) the growing cost of services, caused by the high price of certain strategic inputs of the sector, such as food and medicine; (b) the increasing complexity of medical technology, and (c) the low general level of productivity in the health sector.
- 4.21 A summary analysis of available information on mortality illustrates the general picture. In 1967, the most recent year for which this type of

^{1/} CIAP, Final Report of the CIAP Subcommittee on Perú, 1971, p. 11.

information is available, ^{1/} 96,465 deaths were recorded, of which 46 percent were among children under age five. Infectious and parasitic diseases accounted for approximately 50 percent of total deaths and 62 percent of those among children under five. The following table presents the distribution of deaths caused by infections and parasitic diseases.

<u>Type of Disease</u>	<u>Number of Deaths</u>	<u>Percentage of Total Deaths</u>
1. Controllable by vaccination (diphtheria, whooping cough, tetanus, poliomyelitis, smallpox and measles)	5,763	6.9
2. Related to poor environmental sanitation (typhoid, hepatitis, dysentery, etc.)	8,281	9.9
3. Tuberculosis	4,652	5.5
4. Acute respiratory diseases;	21,365	25.5
5. Other infectious and parasitic diseases	1,536	1.8

4.22 Available information on morbidity (which may be considered an indicator of demand for medical services) indicates that, of a total of 145,000 cases of communicable diseases registered in 1969, those in the spread of which environmental pollution plays a significant role accounted for the largest share, 34 percent of all cases. Tuberculosis, in all forms, was second in importance, representing 11 percent, while the group of communicable diseases which can be controlled through vaccination was third in importance, accounting for 9 percent. Aside from other less common communicable diseases that are more difficult to control, the total number of those which can be reduced significantly through environmental sanitation and vaccination represents approximately 56 percent of all recorded cases.

4.23 The following are some of the principal factors which determine the general level of health and should be emphasized: malnutrition resulting from shortages and poor use of food; low level of public health coverage, especially in rural areas, and the fact that a substantial part of the population finds access to preventive medicine difficult, basically because of the high cost or inadequate supply of medicines.

4.24 Poor nutrition continues to affect the increase in mortality caused by communicable diseases, particularly in the one to four age group. This

^{1/} The figures on hand are taken from the 1971-75 National Health Plan, prepared by the Ministry of Health, which includes statistics on this aspect up to 1967.

helps to explain the high rates of general and infant mortality in Peru. Studies indicate that approximately 30 to 80 percent of the population under four years of age is afflicted by malnutrition to some degree. Likewise, the fact that only a small percentage of the population receives water supply and sewerage services (33 and 27 percent, respectively, in 1969) contributes to the spread of many communicable diseases.

- 4.25 The expansion of health services in rural areas is still limited, thereby hampering proper attention to the health needs of that sector of the population. Thanks to the work of approximately 80 new medical posts during 1965-69, together with development of communications facilities, it has been possible to bring health services to 400,000 inhabitants not previously covered. Nevertheless, it is estimated that access to permanent health services is still difficult for about three million rural inhabitants because they reside in areas located far from such facilities.
- 4.26 The distribution of manpower in the health sector is still heterogeneous, with marked concentration in the Department of Lima and the Province of El Callao. In 1969, slightly over three fourths of the country's 6,870 registered physicians resided in that area, which contains approximately one fourth of the population of Peru. Manpower in the health sector still shows a low return in comparison with international models. This is basically because of the shortage of trained intermediate personnel, poor supervision, insufficient supply of work materials and the low level of demand for community services. The ratio of hospital beds per 1,000 inhabitants declined from 2.43 in 1965 to 2.32 in 1969. However, the distribution of hospital beds is substantially more homogeneous than the geographic distribution of physicians.
- 4.27 The Sectoral Health Plan for 1971-75 defines the objectives established for the sector and the policy measures designed to achieve them. Programmed action in the health sector is aimed specifically at solution or alleviation of the most pressing problems in that area. In order to attain the proposed targets, the sectoral health plan includes a detailed program of public investments in the sector, including identification of specific investment projects to be implemented during 1971-75. The investment requirements of the plan total the equivalent of approximately US\$43 million for the period, of which one third would be allocated to investments in projects for water supply, rural sewerage systems and protection of water resources, while the rest would be earmarked for investments in projects for constructing and equipping health posts. The project covered by this loan document is included in the latter. It should be reiterated that the sectoral health plan accords high priority to expansion of health services coverage. To that end, it proposes, among other measures, establishment of a social Medical service as a prerequisite for free exercise of the medical profession (see paragraphs 3.01, 3.03 and 3.04).

3. Socio-Economic Impact of Project

- 4.28 As mentioned in Chapter III, the proposed project would be of fundamental importance for achieving the objectives and targets established in the sectoral health plan, since its implementation would further rational allocation of resources in the health sector, permit expansion of IINNS activities in research, diagnosis and production concomitantly with expected future requirements, improve the technical quality of sectoral human resources and raise productivity levels in a series of activities basic to that sector.
- 4.29 From the economic standpoint, quantification of the expected benefits of the project entails methodological problems which make it impossible to estimate an internal rate of return. Undoubtedly, implementation of the project would have a significant positive impact on the factors determining the health level, although this impact cannot be quantified on the basis of existing data. Furthermore, because of the present lack of information on the health sector, it is not possible to evaluate the project in terms of quantifying its impact on mortality or morbidity rates or other measurable variables. Consequently, it was necessary to limit socioeconomic evaluation of the proposed project to an analysis of the major targets of activities to be achieved through its implementation vis à vis present and expected needs (or demand) for such activities or services.
- 4.30 Firstly, implementation of the proposed project would permit expanded production of biological products and medicines for human and animal use at the levels established in the sectoral health plan. ^{1/} During the sixties there was an increase in imports of biological products, determined mainly by a stagnation of national production, which was unable to meet the needs of a growing population. IINNS currently produces eight biological products, seven for human use and the eighth an antirabies vaccine for dogs primarily designed to protect the public. The sole producer of these eight products in Peru is IINNS, and the sole purchaser is the Peruvian Government, since these biologicals are utilized exclusively for preventive action by the State (free of charge) in the health field. The eight biologicals are as follows: liquid B.C.G. vaccine, tuberculin, triple vaccine, typhoid vaccine, human antirabies vaccine, antirabies vaccine for dogs and tetanus vaccine. It should be pointed out that in almost every country of the world production, distribution and application of such biologicals are handled by the State, since this action is generally viewed as a predominantly social function and a public duty. Consequently, there is almost no private competitive market for these products. In this connection, it should be added that at the

^{1/} See paragraph 4.03.

Meeting of Ministers of Health of the Andean Group, held in December 1971 within the framework of the Agreement of Cartagena, it was decided that all countries of the group, with the temporary exception of Bolivia and Ecuador, should produce their own supply of all the biologicals mentioned. The basic reason for endeavoring to have each country become self-sufficient in these biologicals is that, since the factors that make possible economies of scale in their production are not present, beyond a certain fairly limited level, importation as needed is very difficult. The producing countries generally confine their output to domestic needs, and in order to secure supplies from such producers, the importing countries must place orders far in advance, which makes it impossible for them to procure the biologicals rapidly in cases of epidemic when their massive and immediate application is most urgent. The proposed project would replace virtually all imports of such biologicals with national output. Only oral polio and measles vaccines would continue to be imported, since it would not be economical to produce them, considering the size of the Peruvian market. Actually, manufacture of these vaccines uses viruses, entailing heavy investments, which do provide economy of scale factors for these particular vaccines. At the Meeting of Ministers of Health of the Andean Group mentioned, a study was made of the possibility of undertaking their production jointly in order to supply all countries of the group, but even with a combined population of over 50 million, it was found that this step would not be advisable.

- 4.31 IINNS produces the vaccines listed in accordance with the annual programming by the Ministry of Health of national needs for each vaccine based on its human immunization programs. The following table shows the volume of biologicals produced by IINNS from 1969 to 1971 and scheduled production for 1972.

	(Thousands of doses)			
<u>Biologicals</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Lyophilized chickenpox vaccine	3,437	5,251	5,105	5,100
Liquid B.C.G. vaccine (tuberculosis)	2,905	2,026	1,051	4,000 ^{1/}
PPD tuberculin	937	1,107	1,500	1,500
DPT triple vaccine (diphtheria-pertussis-tetanus)	201	1,242	1,700	3,500
Typhoid vaccine	454	1,077	450	500
Human antirabies vaccine	167	198	200	250
Antirabies vaccine for dogs	-	248	647	800
Tetanus vaccine	-	38	80	80

^{1/} Production of B.C.G. vaccine in 1969-71 refers to liquid vaccines. Beginning in 1972, desiccated B.C.G. will be produced, which will be easier to store. The figure of 4 million doses includes, in addition to projected demand for 1972, the amounts needed to set up a satisfactory initial inventory.

With regard to the preparation of biological products, execution of the proposed project will ensure not only attainment of the production capacity needed to support health plans but also improved quality and greater productivity of vaccines manufactured in the country, as a result of better physical facilities and more modern laboratory equipment.

- 4.32 Simultaneously with its production activities, the proposed project would appreciably expand diagnosis, research and analysis work, which would further increase efficacy in the struggle against epidemics and the detection and prevention of nonepidemic diseases. Such diagnosis, research, analysis, quality control and similar activities - in short, the provision of services - are the most important functions of IINNS, and approximately 85 percent of the total cost of the proposed project would be earmarked to expand these activities. As indicated previously, ^{1/} ISP at present covers only 25 percent of the country's analysis needs. The project could also significantly expand the analysis and quality control activities of CCPBM, as well as those in the field of nutrition, which, as noted, is one of the major factors governing the relatively low general health level in the country.
- 4.33 Finally, it should be mentioned that, in addition to the aforementioned aspects, the technical advantages of having IINNS facilities consolidated within a single architectural complex would undoubtedly generate substantial economic benefits, such as reduced unit production costs and shared use of equipment on a more economical scale. Moreover, it would further close contact among the personnel, because of their physical proximity, thereby facilitating dialogues and encouraging scientific research and analysis and a joint approach to national health problems.

D. Use of IDB Resources

- 4.34 In recommending that the proposed loan be granted from resources of the Fund for Special Operations, the following major factors were taken into account: (a) the proposed project is classified in the field of health and therefore has a profound social content and would further activities as significant as the promotion, protection and recovery of human and animal health; (b) since the investments programmed under the project could not, by their very nature, be self-financing, they would not generate direct recoveries and (c) the benefits of the project would extend to the entire population of the country, especially the lowest income groups, which, as such, do not usually have access to curative medicine and are more heavily dependent than the other social groups on State action in the field of preventive medicine.

^{1/} See paragraph 2.16.

- 6.35 Basically, in determining the amount of the proposed loan and its composition by types of currency, the following factors have been taken into account: (a) the ratios of total cost that the Bank has been financing in projects of a markedly social character such as the one under consideration; (b) the counterpart effort that would be required of the Government of Peru, and (c) the project's foreign currency requirements. In conformity with the proposed financing plan: (a) IDB funds would cover slightly over 50 percent of the total cost of the project and (b) the foreign currency proceeds of the proposed loan would cover all external costs (with the exception of the IDB service charge), with only 11.1 percent of the amount of such foreign currency resources used for local costs. This percentage is considered to be reasonable, particularly considering that, because of its nature, the proposed project entails a high component of local costs. In addition to the above, it should be noted that all local costs to be financed with dollar proceeds of the proposed loan correspond exclusively to the local costs component of the construction contracts to be awarded following public international bidding. It would be reasonable to assume that, if such contracts are awarded to contractors who are nationals of IDB member countries other than Peru, the estimated component of local costs would be reduced commensurately.

APENDICE A

EL PROYECTO

(ANEXO B DEL CONTRATO DE PRESTAMO)

- A. Descripción del Proyecto: El proyecto consiste en: (a) la planificación y construcción de 25 edificios con un área total de aproximadamente 25.650 metros cuadrados en un conjunto arquitectónico integral que facilite la concentración física, técnica y administrativa de Institutos Nacionales de Salud (IINNS). El conjunto arquitectónico de IINNS estará localizado en el extremo sur del área metropolitana de Lima, en el distrito de Chorrillos; (b) la dotación del equipo de laboratorios y otras instalaciones especiales para los institutos que forman parte de IINNS; y (c) el adiestramiento y la capacitación del personal profesional y técnico de IINNS mediante un plan de aproximadamente 55 becas y la contratación de 15 consultores para el adiestramiento en servicio del personal de la institución, de acuerdo con las definiciones constantes en el Convenio de Asistencia Técnica a que se refiere la Sección del contrato de préstamo. El proyecto se ejecutará para los siguientes institutos que forman parte de IINNS: Instituto de Salud Pública, Instituto de Zoonosis e Investigación Pecuaria, Instituto de Nutrición y Centro de Control de Productos Biológicos y Medicamentos.
- B. Costo total del proyecto: Se estima en el equivalente de US\$10.500.000, de acuerdo con el siguiente detalle:

APENDICE A-2

(en miles de US\$ o su equivalente)

<u>Categorías de inversión</u>	<u>Costos en Divisas</u>		<u>Costos Locales</u>	<u>Total</u>	<u>%</u>
	<u>Directos</u>	<u>Indirectos</u>			
1. <u>Ingeniería y administración</u>					
1.1 Ingeniería y planos <u>1/</u>	-	-	203	203	1,9
1.2 Oficina Ejecutora <u>1/</u>	-	-	233	233	2,2
2. <u>Construcciones y urbanización</u>	899	594	4.030	5.523	52,6
3. <u>Equipos de laboratorios</u>	1.652	-	306	1.958	18,6
4. <u>Costos concurrentes</u>					
4.1 Terrenos <u>1/</u>	-	-	584	584	5,6
4.2 Capacitación y adiestramiento	400	-	100	500	4,8
5. <u>Gastos financieros</u>					
5.1 Intereses y Comisiones del Banco	70	-	335	405	3,9
5.2 Fondo Inspección y Vigilancia Banco	55	-	-	55	0,5
6. <u>Sin asignación específica</u>	<u>334</u>	<u>66</u>	<u>639</u>	<u>1.039</u>	<u>9,9</u>
Total	<u>3.410</u>	<u>660</u>	<u>6.430</u>	<u>10.500</u>	<u>100,0</u>
	(32,5%)	(6,3%)	(61,2%)	(100,0%)	

1/ Estos rubros se financiarán exclusivamente con cargo al aporte local.

- C. Financiamiento del Proyecto: El Proyecto se financiará aproximadamente de la siguiente manera:

(en miles de US\$ o su equivalente)

	<u>Fuente de Fondos</u>		<u>Gastos a Financiarse</u>		<u>Total</u>	<u>%</u>
	<u>Divisas</u>	<u>Moneda Local</u>	<u>Costos Externos</u>	<u>Costos Locales</u>		
	<u>1/</u>					
1. Préstamo Banco	4.500	1.000	4.000	1.500	5.500	52,4
2. Gobierno del Perú	70	4.930	70	4.930	5.000	47,6
Total	4.570	5.930	4.070 <u>2/</u>	6.430	10.500	100,0
Porcentajes (%)	(43,5)	(56,5)	(38,8)	(61,2)	(100,0)	

- D. Destino del Préstamo: Con los recursos del Préstamo se financiará (a) una parte de los contratos de construcción; (b) la adquisición de instrumental y equipo de laboratorio; (c) una parte de los costos de la asistencia técnica; y (d) la contribución al Fondo de Inspección y Vigilancia del Banco.
- E. Licitación Pública Internacional: Cuando los bienes o servicios a adquirirse se financien total o parcialmente con divisas provenientes del Préstamo del Banco, los procedimientos para las licitaciones y las bases específicas de éstas deberán permitir la libre concurrencia de postores originarios o provenientes de países miembros del Banco; consecuentemente, en los citados procedimientos y/o bases específicas, no se establecerán condiciones que impidan o restrinjan la concurrencia de tales postores.
- F. Selección y Contratación de Firms Consultoras y/o Expertos Individuales: En la selección y contratación de firmas consultoras y/o expertos para el Proyecto, se seguirán los procedimientos establecidos en el Convenio de Asistencia Técnica a que se refiere la Sección , quedando entendido que la República no podrá establecer para su aplicación, antes o después de la prestación de los servicios: (i) disposiciones o condiciones que impidan o restrinjan la selección y contratación de las referidas firmas consultoras y/o expertos de países miembros del Banco, o (ii) requisitos o condiciones basadas en la nacionalidad de dichas firmas y/o expertos de países miembros del Banco.

1/ Hasta un 11,1% de los recursos en divisas del préstamo (equivalente a US\$500.000) se podrá utilizar para cubrir costos locales.

2/ Incluye costos indirectos en divisas por un monto de US\$660.000.

REPUBLICA DEL PERU

PLAN DE OPERACIONES DE ASISTENCIA TECNICA

INSTITUTOS NACIONALES DE SALUD (IINNS)

(Parte del Préstamo)

I. PRESTATARIO Y BENEFICIARIO

- 1.01 El prestatario será la República del Perú y el beneficiario Institutos Nacionales de Salud (IINNS).

II. ANTECEDENTES

- 2.01 Con fecha 14 de enero de 1971, el Gobierno del Perú presentó al BID, por intermedio del Ministerio de Economía y Finanzas, una solicitud de préstamo para el financiamiento parcial de un proyecto que consiste en el desarrollo físico y tecnológico de IINNS. Asimismo, el Gobierno peruano indicó al Banco que otorgaba la más alta prioridad a la ejecución del proyecto.
- 2.02 El proyecto contempla: (a) la construcción de 25 edificios o unidades, en un conjunto arquitectónico integral que facilite la complementación física, técnica y administrativa de IINNS; (b) la dotación de equipo de laboratorio e instalaciones especiales; y (c) el adiestramiento y la capacitación del personal profesional y técnico de la institución. Debe señalarse que el adiestramiento y la capacitación que se financiaría con la asistencia técnica propuesta son elementos de primordial importancia dentro del proyecto.

III. OBJETIVOS

- 3.01 Los objetivos principales de la asistencia técnica propuesta son:
- (a) elevar la calidad técnica de los recursos humanos de IINNS, a fin de garantizar la utilización racional de las inversiones de capital y la calidad de los servicios que presta la institución;
 - (b) hacer viable los programas de expansión de las actividades generales de IINNS, de conformidad con las metas que le fueron establecidas en el Plan Sectorial de Salud; y
 - (c) propiciar el aumento de la productividad general en las diversas actividades y funciones que desarrolla la institución.

IV. DESCRIPCION DEL PROYECTO

4.01 La asistencia técnica prevista en el presente Plan de Operaciones corresponde a las actividades de adiestramiento y capacitación de personal, incluidas en el proyecto. Para cumplir con los objetivos señalados en el párrafo 3.01, las actividades de adiestramiento y capacitación del personal incluyen: (a) la contratación de 15 consultores para el adiestramiento en servicio del personal de IINNS (asesoramiento técnico); y (b) un plan de 55 becas para la capacitación del personal local, principalmente en instituciones públicas especializadas del exterior (plan de becas).

4.02 En el cuadro siguiente se presenta un resumen de la asignación de consultores y becas, distribuidos por institutos que forman parte de IINNS:

<u>Instituto</u>	<u>Consultores</u>		<u>Becas</u>	
	<u>Número</u>	<u>Meses/ hombre</u>	<u>Número</u>	<u>Meses/ hombre</u>
1. Instituto de Zoonosis e Investigación Pecuaria	5	33	9	96
2. Centro de Control de Productos Biológicos y Medicamentos	2	6	8	60
3. Instituto de Salud Pública	2	4	22	162
4. Instituto de Nutrición	<u>6</u>	<u>30</u>	<u>16</u>	<u>192</u>
Totales	<u>15</u>	<u>73</u>	<u>55</u>	<u>510</u>

A. Asesoramiento Técnico

4.03 Los consultores a ser contratados desarrollarán sus labores de acuerdo a los términos de referencia generales y plazos que se presentan a continuación, en el entendido de que, en ningún caso se sobrepasará el plazo de tres años establecido en el párrafo 5.01, más adelante:

1. Consultores para el Instituto de Zoonosis e Investigación Pecuaria

(a) Planificación de Investigación y Diagnóstico Veterinario. (3 meses). Este consultor tendrá la responsabilidad de formular los planes de futuras investigaciones y prestar asesoramiento técnico en los aspectos de diagnóstico de las enfermedades animales. Prestará sus servicios durante el primer año de ejecución del proyecto.

- (b) Virología (6 meses). Este consultor tendrá a su cargo la dirección de los trabajos de investigación de las enfermedades producidas por virus. Prestará sus servicios durante el primer año de ejecución del proyecto.
- (c) Patología aviar (6 meses). Prestará asesoramiento técnico en el diagnóstico de investigación de las enfermedades de las aves. Este consultor será contratado durante el segundo año de la ejecución del proyecto.
- (d) Patología general (6 meses). Este consultor trabajará en el laboratorio de patología y entrenará a profesionales nacionales en esta especialidad. Será contratado durante el tercer año de ejecución del proyecto.
- (e) Parásitos de la sangre (12 meses). Este consultor realizará estudios de las enfermedades parasitarias de la sangre del ganado, especialmente sobre anaplasmosis y piroplasmosis, y entrenará al personal nacional en estos campos. Será contratado durante el tercer año de la ejecución del proyecto.

2. Consultores para el Centro de Control de Productos Biológicos y Medicamentos

- (a) Control de biológicos para uso veterinario (3 meses). Este consultor adiestrará al personal nacional en las técnicas y procedimientos de control de productos biológicos para uso veterinario. Prestará sus servicios durante el primer año de la ejecución del proyecto.
- (b) Control de biológicos para uso humano (3 meses). Este consultor adiestrará al personal nacional en técnicas y procedimientos de control de productos biológicos para uso humano. Prestará sus servicios durante el segundo año de la ejecución del proyecto.

3. Consultores para el Instituto de Salud Pública

- (a) Equipamiento de laboratorios de producción (2 meses). Este consultor asesorará en las labores de equipamiento e instalación de los laboratorios de producción. Prestará sus servicios durante el primer año de ejecución del proyecto.
- (b) Organización de laboratorios de diagnóstico de Salud Pública (2 meses). Este consultor asesorará en las labores de organización de los laboratorios de diagnóstico. Prestará sus servicios durante el segundo año de la ejecución del proyecto.

4. Consultor para el Instituto de Nutrición

- (a) Bromatología (6 meses). Este consultor revisará y actualizará las técnicas de análisis vitamínico y mineral en alimentos que se emplean actualmente, y asesorará en la implantación de aquellos que faltaren, así como en el equipamiento del laboratorio respectivo. Prestará sus servicios durante el primer año de la ejecución del proyecto.
- (b) Control de alimentos (4 meses). Este consultor revisará y actualizará la organización y funcionamiento del laboratorio de control de alimentos, asesorando en la elaboración del sistema de trabajo para dicho laboratorio. Prestará sus servicios durante el primer año de la ejecución del proyecto.
- (c) Biología experimental (6 meses). Este consultor revisará y actualizará los procedimientos de trabajos utilizados en el bioterio, tanto con animales pequeños como con animales de mayor tamaño, y asesorará en el equipamiento de esta unidad de trabajo. Prestará sus servicios durante el primer año de la ejecución del proyecto.
- (d) Técnicas en aminoácidos (4 meses). Este consultor revisará el trabajo que se realiza actualmente con el analizador automático de aminoácidos y asesorará en el equipamiento necesario para la aplicación de otros métodos de determinación de aminoácidos. Prestará sus servicios durante el primer año de ejecución del proyecto.
- (e) Educación nutricional (4 meses). Este consultor evaluará la situación actual de la acción educativa y asesorará en la planificación de los programas futuros de acciones educativas, así como en el equipamiento de las unidades operativas actuales y de las adicionales que fueren necesarias. Prestará sus servicios durante el segundo año de ejecución del proyecto.
- (f) Encuestas dietéticas (6 meses). Este consultor revisará y actualizará la planificación, ejecución y cálculo de resultados de las encuestas dietéticas, prestando asesoramiento en el equipamiento que fuere necesario. Prestará sus servicios durante el segundo año de la ejecución del proyecto.

B. Plan de Becas

- 4.04 La capacitación técnica del personal profesional y técnico de IINNS se complementará con un plan de 55 becas, por un total de 510 meses/hombre. El plan de becas, distribuido por instituto se presenta a continuación:

1. Becas para el personal del Instituto de Zoonosis e Investigación Pecuaria:

- (a) Siete becas con una duración de 12 meses cada una, para especialización en los campos de toxicología veterinaria, patología aviar, epidemiología, virología, bacteriología, inmunología y producción de biológicos veterinarios; y
- (b) Dos becas con una duración de seis meses cada una, para especialización en los campos de serología y producción de biológicos.

2. Becas para el personal del Centro de Control de Productos Biológicos y Medicamentos

- (a) Dos becas con una duración de 12 meses cada una, para especialización en controles farmacológicos y control de biológicos veterinarios; y
- (b) Seis becas con una duración de 6 meses cada una, para especialización en los campos de espectrofotometría infrarroja, cromatografía de gases y vapores, control de biológicos humanos, control vacuna a virus, control microbiológico de antibióticos y de vitaminas.

3. Becas para el Instituto de Salud Pública

- (a) Seis becas con una duración de 12 meses cada una para especialización en virología, zoología médica, micología médica, epidemiología médica, producción de vacunas bacterinas y virales y producción de sueros purificados concentrados;
- (b) Catorce becas con una duración de 6 meses cada una para especialización en los campos de virología, laboratorio TBC, serología de enfermedades parasitarias, preparación de antígenos, entomología, taxonomía, producción de vacunas rábicas y antivariólica, medios de cultivo y crianza y cuidado de animales; y
- (c) Dos becas de una duración de 3 meses cada una, para especialización en microbiología entérica y producción de vacuna liofilizada BCG.

4. Becas para el personal del Instituto de Nutrición

Diez y seis becas con una duración de 12 meses cada una para la especialización en áreas específicas relacionadas con epidemiología y clínica de la nutrición, toxicología de alimentos, bioquímica de la nutrición, tecnología de alimentos, microbiología de alimentos, estudios experimentales en nutrición y educación nutricional.

V. PERIODO DE EJECUCION

5.01 Las actividades contempladas en el presente Plan de Operaciones deberán ser llevadas a cabo en un período de tres años, en forma simultánea con las demás actividades incluídas en el proyecto y de acuerdo con el siguiente calendario tentativo de ejecución:

<u>Instituto</u>	<u>1er. Año</u>		<u>2o. Año</u>		<u>3er. Año</u>		<u>Total</u>	
	<u>Consul- tores</u>	<u>Becas</u>	<u>Consul- tores</u>	<u>Becas</u>	<u>Consul- tores</u>	<u>Becas</u>	<u>Consul- tores</u>	<u>Becas</u>
Instituto de Zoonosis e Investigación Pecuaria	2	5	1	2	2	2	5	9
Centro de Control de Productos Biológicos y Medicamentos	1	3	1	3	-	2	2	8
Instituto de Salud Pública	1	8	1	11	-	3	2	22
Instituto de Nutrición	<u>4</u>	<u>4</u>	<u>2</u>	<u>6</u>	<u>-</u>	<u>6</u>	<u>6</u>	<u>16</u>
Total	<u>8</u>	<u>20</u>	<u>5</u>	<u>22</u>	<u>2</u>	<u>13</u>	<u>15</u>	<u>55</u>

5.02 (a) Con no menos de 30 días de anticipación al inicio de cada año calendario, el deudor, a través de IINNS, someterá a la aprobación del Banco el calendario (i) de contratación de consultores, y (ii) de adiestramiento de los becarios que se especializarán en el exterior.

(b) Los calendarios de contratación de los consultores individuales deberán ser confeccionados de modo a permitir que los consultores realicen sus labores en las oportunidades y por los períodos descritos en el párrafo 4.03 de este plan de operaciones.

5.03 El programa de adiestramiento y capacitación, tanto en lo que se refiere a la contratación de consultores como al plan de becas, será llevado a cabo bajo las responsabilidades generales de la Oficina Ejecutora del proyecto de desarrollo de IINNS. El jefe de dicha Oficina Ejecutora, además de dirigir y coordinar la ejecución total del proyecto, tendrá la responsabilidad específica por el desarrollo del programa de adiestramiento y capacitación contemplado en el presente Plan de Operaciones.

VI. JUSTIFICACION DEL PROYECTO

- 6.01 La evaluación de las actividades técnicas que desarrolla IINNS, realizada con la colaboración de consultores externos y funcionarios y técnicos de la OPS, ha puesto de manifiesto que la institución cuenta con personal profesional y técnico de alta calidad y experiencia a nivel de directores y subdirectores. Sin embargo, se pudo comprobar que la capacidad operativa actual de los distintos institutos que forman parte de IINNS, con excepción del Instituto de Salud Ocupacional (ISO), se encuentra seriamente limitada debido, entre otros factores principales, a la insuficiencia de personal capacitado en los niveles profesionales y técnicos medios.
- 6.02 El programa de adiestramiento y capacitación del personal profesional y técnico de nivel medio permitiría elevar la calidad técnica de los recursos humanos de la institución, lo cual se considera indispensable para lograr una utilización racional de las inversiones de capital contempladas en el proyecto de desarrollo de IINNS, así como para mejorar la calidad de los servicios que presta la entidad. De igual manera, el mejoramiento de la calidad técnica del personal de IINNS se traduciría directamente en un aumento de la productividad general en las diferentes actividades y funciones que desarrolla la institución. Finalmente, debe destacarse que este programa de adiestramiento y capacitación de personal fue preparado con la colaboración de expertos de la OPS y de consultores del Banco, sobre la base de la evaluación de la capacidad técnica actual del personal profesional y técnico medio, y con vista a las proyecciones de futuras actividades.

VII. COSTO Y FINANCIAMIENTO

- 7.01 El costo total de la asistencia técnica a ser financiada con los recursos del préstamo No. ascendería al equivalente de US\$500.000, de acuerdo con el siguiente presupuesto estimado:

(equivalente en US\$)

	<u>Costos en Divisas</u>	<u>Costos Locales</u>	<u>Total</u>	<u>%</u>
1. Contratación de Consultores				
a. Honorarios 15 consultores <u>1/</u>	86.000	60.000	146.000	29,2
b. Pasajes internacionales <u>2/</u>	7.500	--	7.500	1,5
c. Viáticos	--	14.000	14.000	2,8
2. Plan de becas				
a. Otorgamiento de 55 becas <u>3/</u>	255.000	--	255.000	51,0
b. Pasajes internacionales <u>2/</u>	27.500	--	27.500	5,5
3. Sin asignación específica	<u>24.000</u>	<u>26.000</u>	<u>50.000</u>	<u>10,0</u>
T o t a l	<u>400.000</u>	<u>100.000</u>	<u>500.000</u>	<u>100,0</u>
Porcentajes (%)	(80,0)	(20,0)	(100,0)	

7.02 El Banco financiará la totalidad de los costos externos del plan de asistencia técnica, es decir, hasta US\$400.000, que incluyen honorarios de consultores (la parte que se pagaría en divisas), viajes internacionales y becas de capacitación. El financiamiento del Banco representará, en consecuencia, el 80% del costo total estimado. La contrapartida nacional financiará el total de los costos locales, estimados en el equivalente de US\$100.000.

VIII. FUENTES DE FONDOS, DESEMBOLSOS Y AMORTIZACIONES

8.01 Los recursos destinados a sufragar los gastos de la asistencia técnica prevista en el presente Plan de Operaciones formarán parte del préstamo que se concedería a la República del Perú, con recursos del Fondo para Operaciones especiales, destinado al financiamiento parcial del proyecto de desarrollo de IINNS, y se sujetarán por lo tanto, a las condiciones previstas en el contrato de préstamo No. , en lo que se refiere al período de amortización, interés, moneda de pago, comisiones y período de desembolsos. Los gastos relativos a esta operación podrán ser cargados al Fondo Rotario previsto en la Sección del contrato de préstamo correspondiente.

1/ Se ha computado sobre la base de un promedio de honorario mensual de US\$2.000 por consultor.

2/ Los pasajes internacionales se estimaron a razón de US\$500 cada uno.

3/ El costo de las becas se ha estimado a razón de US\$500, en promedio, por mes/hombre.

- 8.02 Los desembolsos destinados al financiamiento de las becas de capacitación, estarán condicionados a la previa aprobación por el Banco del programa de entrenamiento y especialización de cada una de las becas y de los candidatos seleccionados para usufructuarlas.

IX. CONTRATACION DE CONSULTORES

- 9.01 IINNS elegirá y contratará directamente los servicios de los consultores individuales previstos en el plan, conforme al siguiente procedimiento:
- (a) IINNS someterá previamente a la aprobación del Banco: (i) el procedimiento de selección; (ii) la nómina de los expertos entre los cuales se hará dicha selección, señalando detalladamente los antecedentes y experiencias profesionales de los mismos; y (iii) los términos de referencia y los calendarios de trabajo respectivos.
 - (b) Una vez que el Banco haya aprobado los requisitos anteriores, IINNS procederá a seleccionar los consultores. El texto del proyecto de contrato correspondiente deberá ser sometido a la aprobación del Banco.
- 9.02 En los contratos entre IINNS y los consultores individuales deberá estipularse que:
- (a) Con respecto a los consultores domiciliados en el Perú, su remuneración será pagada exclusivamente en soles.
 - (b) Con respecto a los consultores no residentes en el Perú: (i) que el máximo porcentaje posible de su remuneración será pagado en soles y el resto en dólares o su equivalente en otras monedas, excepto soles, que formen parte del Fondo para Operaciones Especiales, en el entendido de que en caso que el porcentaje de la remuneración que vaya a ser pagada en soles sea inferior al 30% del total de la misma, una justificación completa y detallada será sometida al Banco para su aprobación previa, conjuntamente con el proyecto de contrato correspondiente, y (ii) que los viáticos serán pagados en soles.

X. INFORMES

- 10.01 En el convenio que se suscriba con el prestatario, así como en los contratos que IINNS suscriba con los consultores, deberán establecerse las siguientes obligaciones:

- (a) Todo consultor individual deberá presentar un informe final a IINNS con copia al Banco, a más tardar dentro del último mes de su contrato.
- (b) Los consultores independientes contratados por períodos mayores de seis meses deberán presentar a IINNS informes trimestrales de progreso, con copias al BID.
- (c) Los consultores proporcionarán al BID toda la información que éste razonablemente pudiera solicitarle en relación con la ejecución de sus labores.
- (d) Cada uno de los beneficiarios del plan de becas de capacitación incluido en esta asistencia técnica deberá presentar a IINNS, con copia al Banco, un informe detallado, a la finalización de su respectiva beca, sobre el entrenamiento recibido, especialización alcanzada, trabajos realizados y demás aspectos salientes de su participación en el programa.

XI. SUPERVISION

- 11.01 El BID podrá ejercer la supervisión de esta asistencia técnica por intermedio de su Representación en Perú, y a tal efecto, los consultores deberán mantener al BID permanentemente informado de sus actividades.

XII. CONVENIO

- 12.01 El convenio de asistencia técnica deberá ser suscrito por el BID y la República del Perú en la misma oportunidad en que se firme el contrato de préstamo. En el convenio de asistencia técnica se deberá establecer que IINNS se comprometerá a poner en práctica las recomendaciones pertinentes de los consultores o sustituir aquellas que no merecieran su conformidad por otras alternativas que resultaren igualmente aceptables al BID.

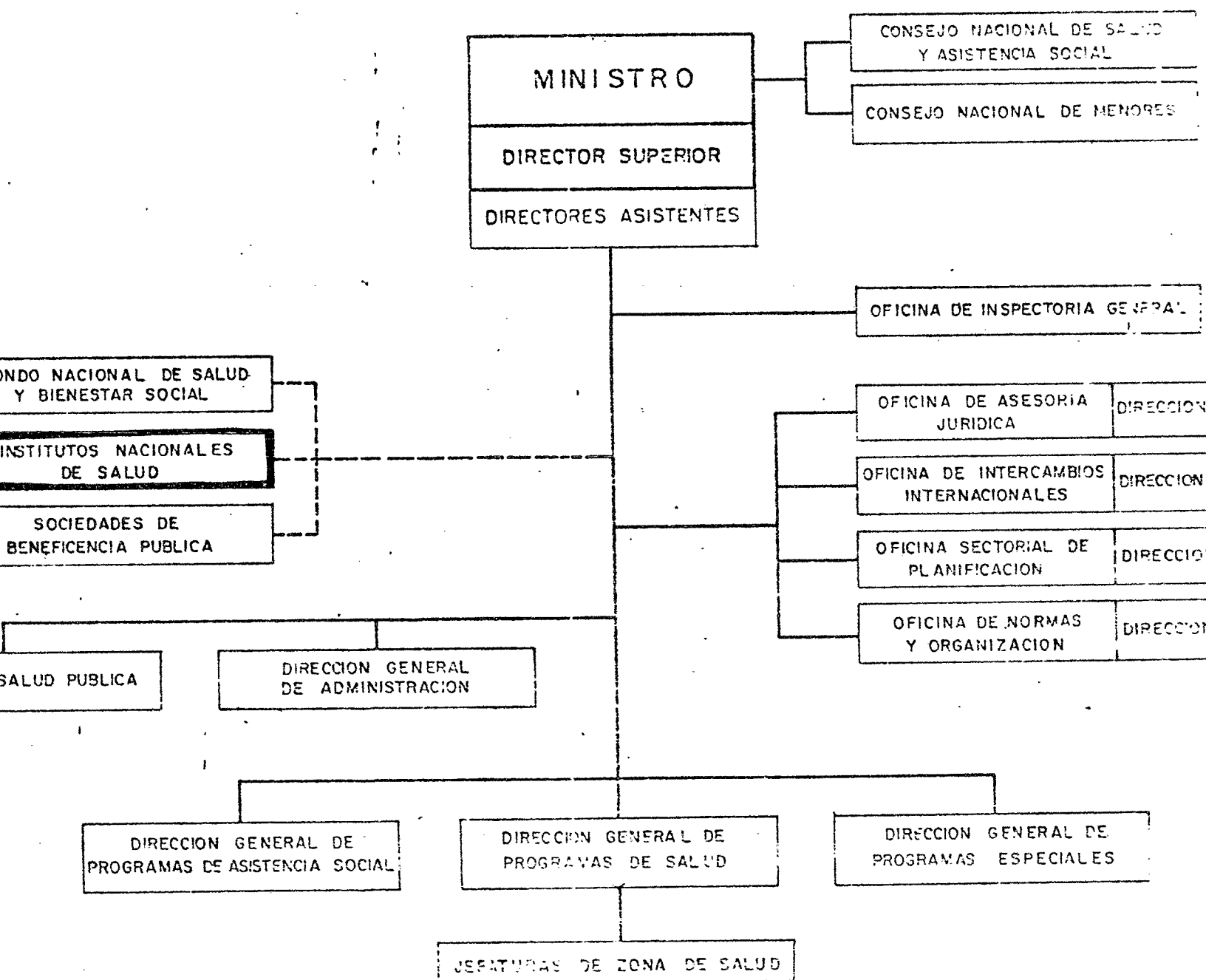
XIII. CRITERIOS DE EVALUACION

- 13.01 Los beneficios de esta operación de asistencia técnica se evaluarían teniendo en cuenta los resultados alcanzados en relación con los objetivos previstos en el párrafo 3.01, de la siguiente manera:
 - (a) Enseñanzas, experiencia y entrenamiento adquirido por el personal profesional y técnico de IINNS a través de la intervención de los expertos que se contratarían y del usufructo de las becas programadas.

- (b) Implantación de recomendaciones y sugerencias técnicas formuladas por los consultores, o alternativas igualmente aceptables y que hubieran sido aprobadas por el Banco.
- (c) Aumento de la productividad general de los recursos humanos de la institución.
- (d) Expansión de las actividades generales de IINNS.

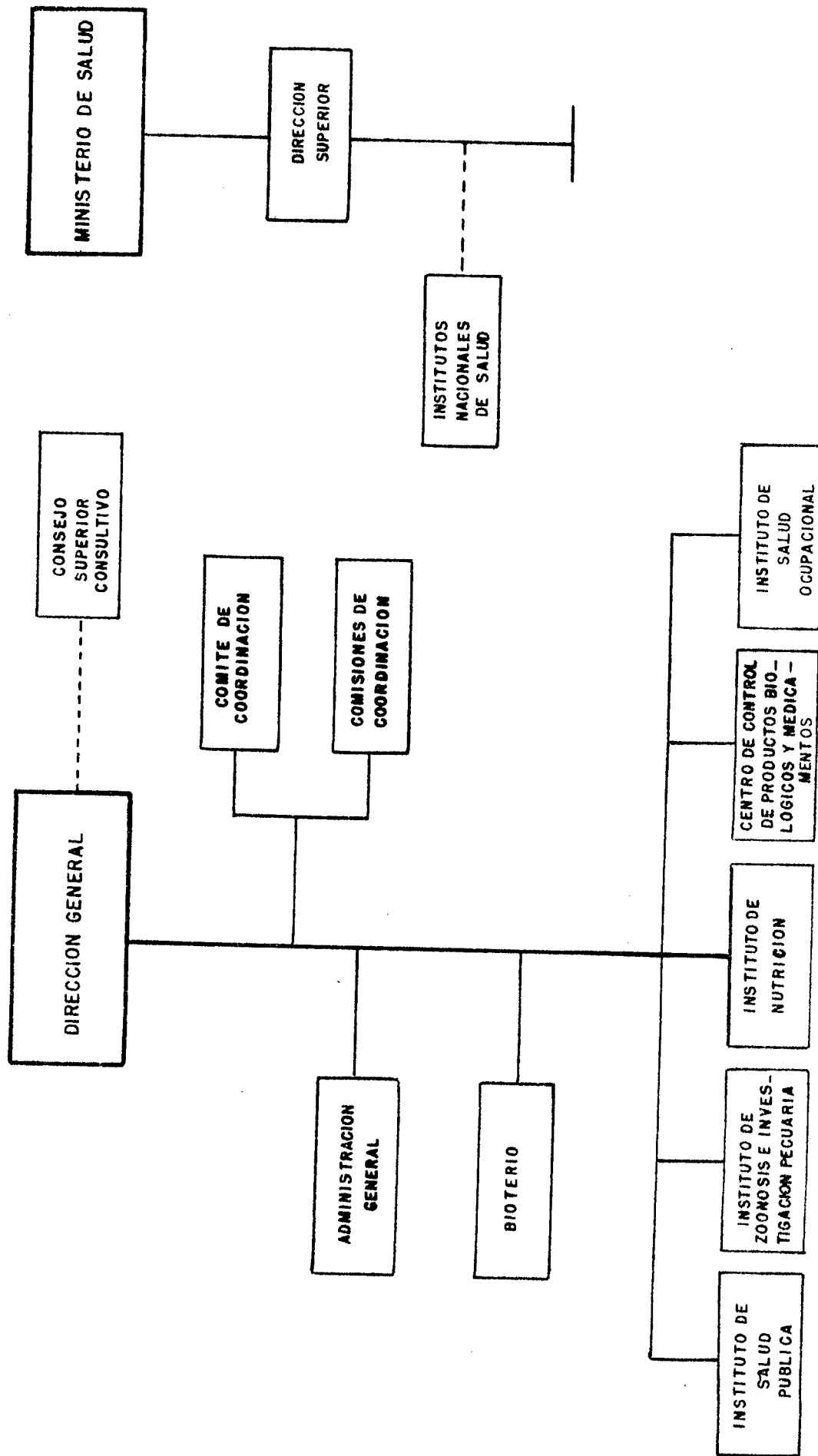
XIV. RESPONSABILIDAD DEL BANCO

14.01 La División de Préstamos, Zona II tendrá la responsabilidad básica de la operación hasta la aprobación y firma del contrato de préstamo y convenio respectivo, a partir de entonces la responsabilidad básica pasará a la División de Administración de Préstamos, Zona II. La responsabilidad técnica correspondería en todo momento a la División de Análisis de Proyectos de Desarrollo Social la cual podría contar con la asesoría de la Organización Panamericana de la Salud y otras entidades que se estimare conveniente.



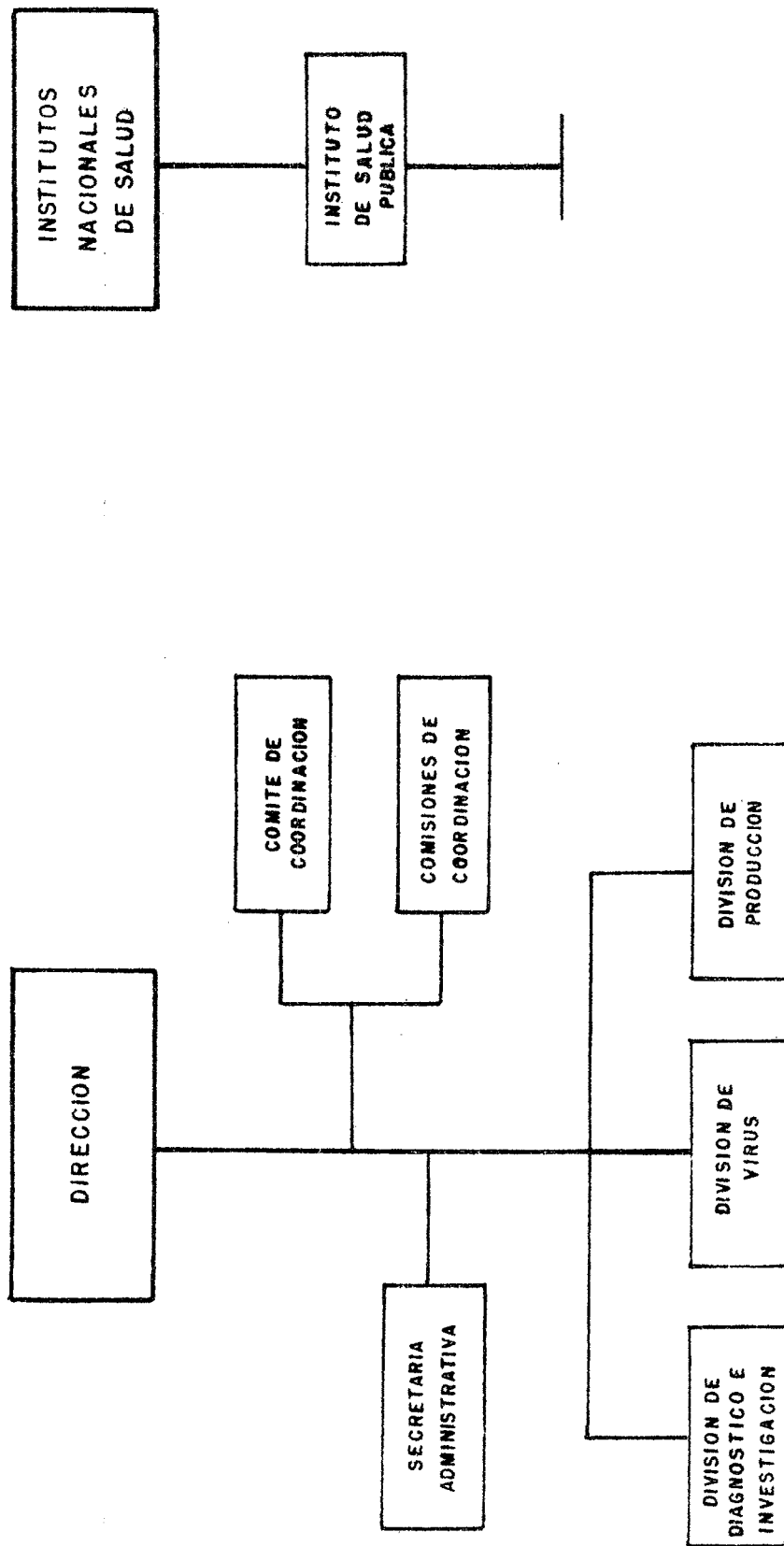
ORGANIGRAMA ESTRUCTURAL
DE LOS INNS-1970

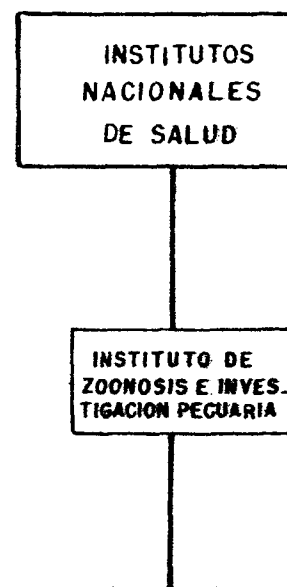
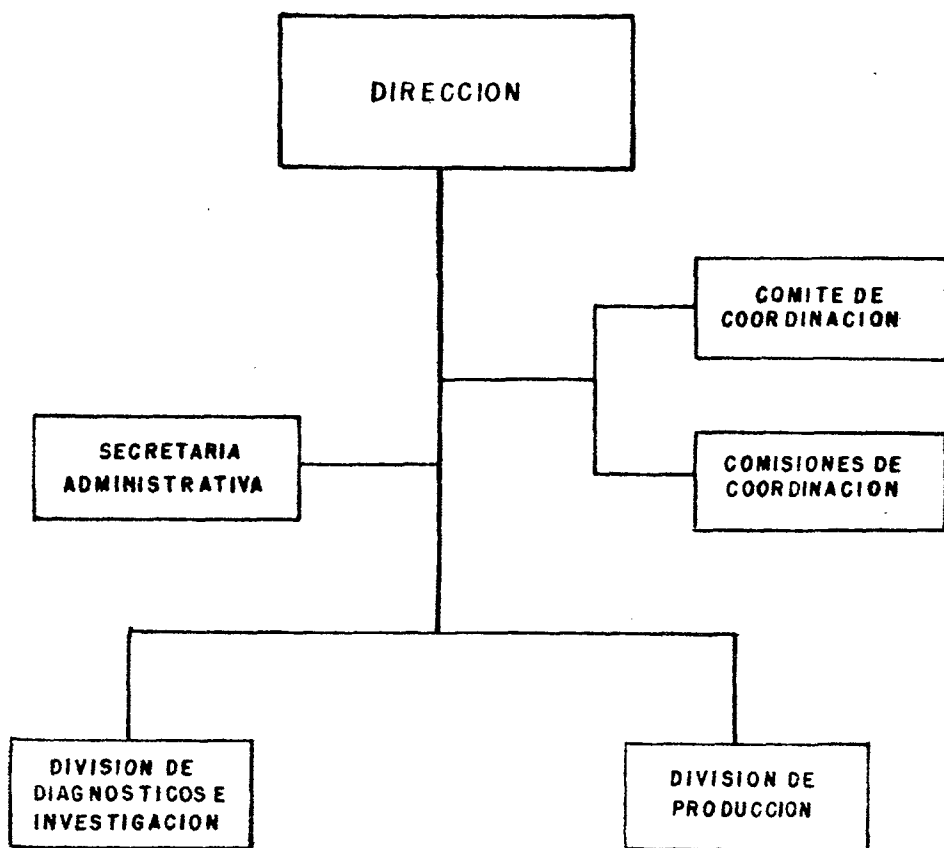
ORGANIGRAMA Nº 1

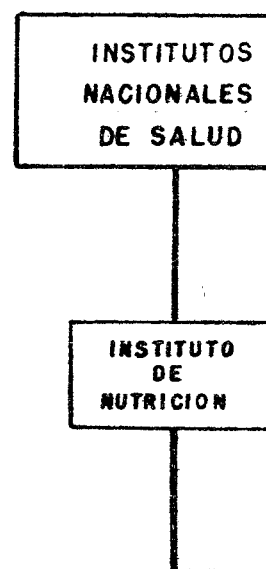
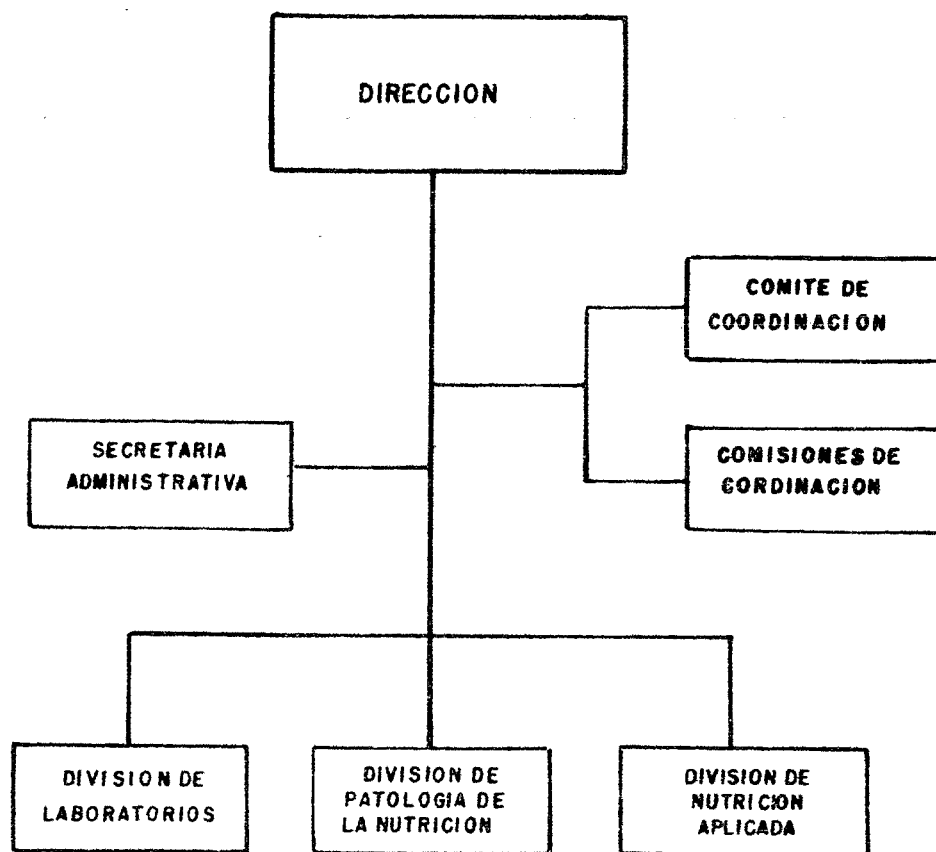


ORGANIGRAMA ESTRUCTURAL
DEL ISP-1970

ORGANIGRAMA Nº 2



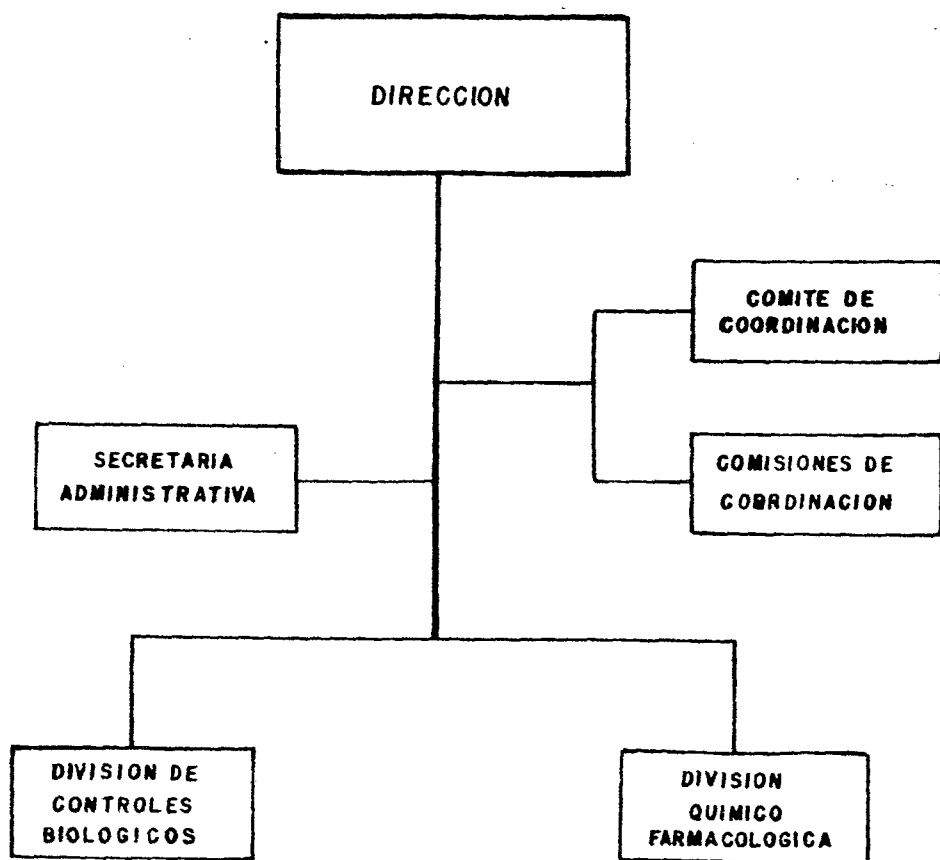




AMA ESTRUCTURAL

ORGANIGRAMA N.º 5

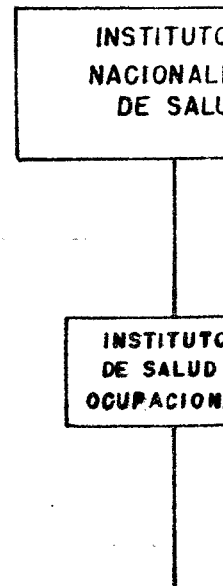
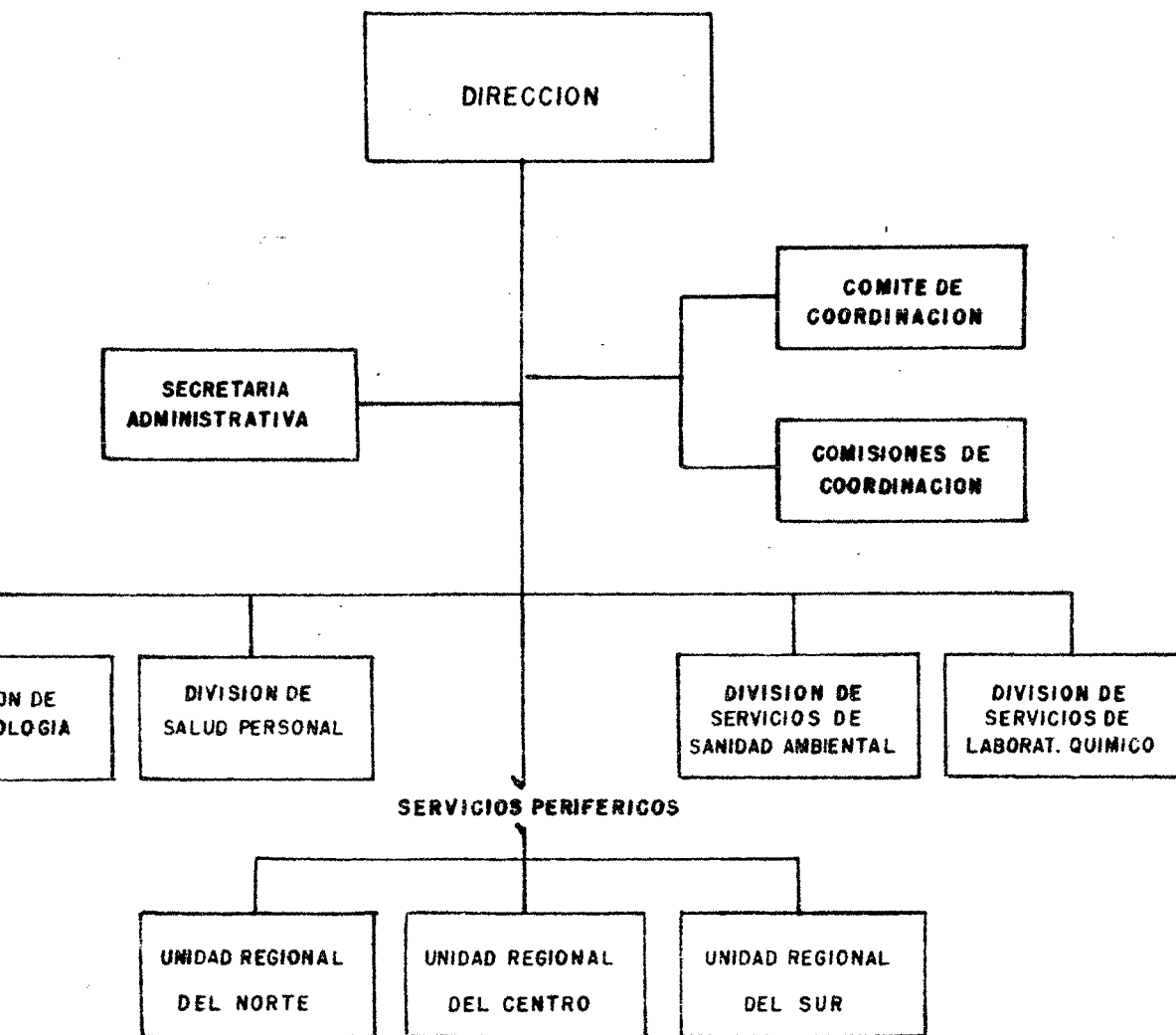
PBM -



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ORGANIGRAMA Nº 6

-1970



CURRICULUM VITAE

Harlan Dwight Anderson

1. PLACE AND DATE OF BIRTH: Plankinton, So. Dakota, March 21, 1914
2. TITLE: Vice President, Operations
Metabolic, Inc.
4520 Yoakum Boulevard
Houston, Texas 77006
3. TRAINING: M. S. and Ph.D. degrees, University of Wisconsin.
Major: Biochemistry. Minor: Medical Science.
4. RECENT EXPERIENCE:

1969 to present - Vice President Operations, Metabolic, Inc.,
Houston, Texas 77006

Designed and supervised construction of Blood Fractionation plant.
Prepared detailed methodology for entire process.
Phased in the plant and trained the employees.
General responsibility for manufacture of Blood Banking Reagents and control serums for AutoAnalyzers.

1966 to 1969 - Director, Biological Division
Parke-Davis & Company, Detroit, Mich. 48232

Directed 300 employees in two locations.
Responsibility for a branch plant:
Manufactured 78 product forms, human blood derivatives, animal serum products, vaccines, skin test agents, etc.
Prepared budgets and was responsible for the overall profitability of the division.
Very active in programs to develop supervisors, managers, and superintendents.

1964 to 1966 - Superintendent, Parkedale Biological Laboratories,
Parke, Davis & Company, Rochester, Michigan

Responsibility for operations of a branch plant - 250 employees.
Responsibility for design and phase-in of a new blood fractionation laboratory.
Responsibility for design and phase-in of an automated facility for manufacture of Influenza Virus Vaccine.

Responsibility for design of "clean rooms" used in tissue culture procedures.
Developed crash programs to train managers to replace personnel eligible for retirement.
Participated on five task forces (Chairman of two)

1950 to 1964 - Chief, Biological Products Division,
Michigan Department Public Health (120 employees)

Responsible for biological manufacturing, testing and Release Protocols on 38 product forms.
Designated "Responsible Agent" for U. S. License #99
Responsible for Research, Development, Field Trials, License application on all new or revised products.
Responsible for design and phase-in of new buildings, automated filling and packaging lines, remodeled laboratories, etc.
Author and prime motivator of three state-wide programs in the field of Public Health.
Innumerable speeches to both professional and lay groups.
Active in subordinate training programs.
Prime recipient of research grants.

5. PROFESSIONAL AFFILIATIONS AND HONORS:

American Chemical Society
Detroit Chapter, American Chemical Society
Society of Microbiology
Michigan Chapter, Society of Microbiology
Fellow, American Public Health Association
Fellow, American Association for the Advancement of Science
Royal Society of Health, London, England
Sigma Xi - President, Mich. State University Chapter, 1956
Phi Sigma, University of Wisconsin
Gamma Alpha - Secretary-Treasurer, 1939-1940, University of Wisconsin
American Society of Public Administration - Vice President 1962-1963
Amphion - President, 1933-1934, Pasadena Jr. College
Pasadena, Calif.

Listed in Chemical Who's Who
Listed in Who's Who in the Midwest
Listed in American Men of Science
Contributing Editor, Vox Sanguinis

Consultant, following standards committees of the Commission of Plasma Fractionation, Protein Foundation: (1948-1964)

Immune Globulin Committee

Albumin Committee

Clotting Components Committee

Formerly, Special Consultant to the Medical Director
Midwestern Area, American National Red Cross (5 years)

Former member, Subcommittee of Plasma, Div. of Medical
Sciences

National Research Council (1962-1964)

Special Consultant, Pan American Health Organization,
Sept. 15 - Oct. 5, 1962, Mexico City

Technical Committee on Immunization, American Public Health
Association Awards of Appreciation from:

American Red Cross (1964)

Michigan Chapter, National Hemophilic Foundation (1964)

Michigan Chapter, American Association of Blood Banks (1959)

6. PUBLICATIONS: 49 Scientific Publications.

7. OTHER PROFESSIONAL ACCOMPLISHMENTS:

Served on scientific advisory committees for Blood Research
Foundation (formerly Protein Foundation, Boston); immune
globulins, albumins and clotting component committees, 1948-
1964; currently a consultant to these committees.

Served on the Committee on Plasma and Plasma Substitutes,
National Research Council, 1962-1964.

Member of Multiple Antigens Committee, American Public Health
Association 1956-1965.

Special consultant to Pan American Health Organization and
the Minister of Health, Mexico, Sept. 15 - Oct. 5, 1962

Member of Ad Hoc Committee to plan the conference "Biological
Aspects and Clinical Uses of Immuneoglobulins", Ohio State Univ.
March 30-April 2, 1969, in association with the Div. of
Medical Sciences, National Research Council.

Chairman, Joint Committee between the Division of Biological
Standards, USPHS and the Biological Section, Pharmaceutical
Manufacturers Assn. established to study the toxicity of
pertussis vaccines - 1964-1969.

Served as special consultant, Saginaw County Hospital in
"Protein repletion studies in tuberculosis patients, 1952-1960.

Served as special consultant to Medical Director, midwest area,
Blood Program, American National Red Cross, 1948-1953.

Served as special consultant to Lansing Regional Blood Center,
American Red Cross, 1948-1964.

Recipient of Special Awards of Appreciation from American Red
Cross, Michigan Chapter, National Hemophilic Foundation, and
Michigan Chapter, American Assn. of Blood Banks.

CURRICULUM VITAE

William H. Gebhard

1. PLACE AND DATE OF BIRTH: Cassopolis, Michigan, U.S.A., December 19, 1915.
2. TITLE: Chief, Section of Testing and Control, Division of Biologic Products, Bureau of Laboratories, Michigan Department of Public Health
3. TRAINING: M.S. and Ph.D. degrees, University of Michigan.
Major: Microbiology. Minor: Chemistry.
4. RECENT EXPERIENCE:

1969 to present - Chief, Testing and Control Section

Responsible for supervision of the Testing and Control Section. Supervise the final potency, safety, identity, pyrogen, and sterility testing of bacterial vaccines, viral vaccines, toxoids, skin test antigens, antiserums, immune serum globulins, and human blood fractions. Development of improved in vivo and in vitro potency tests. Supervise distribution, housing and care of all mice, guinea pigs, and rabbits used in the production and testing of biologics. The filling and packaging of biologics into final containers. Inspecting and labeling of the products and maintenance of precautions and records to assure the integrity of their identification. Development of improved filling and packaging procedures and systems.

1964 to 1969 - Chief, Viral Vaccines Section

Responsible for the supervision of the Viral Vaccines Section. Supervised the production and evaluation of safety, purity, and potency of smallpox and rabies vaccines. Was responsible for potency testing of polio vaccine, both before and after pooling into quadruple antigen. Responsible for measles antibody tests in immune serum globulins and rabies antibody tests on clinical specimen of serum. Directed Viral Vaccine Section in the development and control of new virus vaccines. Planned and developed, kept informed of and utilized recently developed techniques requiring propagation in tissue cell lines or embryonated eggs. Directed experimental studies in the rabies vaccine with the purpose of developing a method of producing it in tissue culture.

1950 to 1964 - Biochemist, Antigens and Antisera Unit

In Charge of the production of pertussis vaccine, rabies vaccine, smallpox vaccine and diagnostic antigens and antisera. This involved the training of the staff, supervision of the work and maintenance of control of the production records for these products.

1950 to 1958

Part time consultant to the Pan American Health Organization, Regional Office of the World Health Organization, on the production of vaccines. This required traveling to the various laboratories in order to determine their needs, ordering equipment and training personnel in biological production and testing procedures for laboratories in Latin America. Spent considerable time during this period in facilities in Peru, Chile, and Bolivia. From October 25 to December 19, 1958 served as consultant to the International Cooperation Administration and set up a laboratory to produce dried smallpox vaccine in Dacca, Pakistan.

5. SPECIAL INTEREST AREAS

Vaccine development
Laboratory instrumentation and equipment
Preservation of biologic specimens
Smallpox vaccine
Potency assay (statistical analysis)

6. PUBLICATIONS

Development of an Acceptable Rabies Vaccine for Human Use. I. Formation of the Protective Antigen. Anderson, G.R., Gebhard, W.H., Everest, R.F., in preparation.

Laboratory Instrumentation Manual 1950-- Lab Course, Michigan State University-- Michigan Department of Public Health.

APENDICE E

OFICIO No/235-71-EF/10(71)

Lima, 11 de Noviembre de 1971.

Señor Licenciado
Antonio Ortíz Mena
Presidente del Banco
Interamericano de Desarrollo
WASHINGTON

Me es grato dirigirme a usted en relación a la solicitud de préstamo, para Institutos Nacionales de Salud que formulara mi Gobierno mediante Oficio No 29-71-EF/75-DG CP, con fecha 14 de Enero del presente año.

En la revisión del proyecto efectuada por nuestros funcionarios y la Misión del BID que nos visitara últimamente, se llegó a establecer la necesidad de ampliar la solicitud de préstamo de U.S.\$3'150,000.00 a US\$5'000,000.00 en razón de haberse incrementado el monto de dicho proyecto.

Por este motivo el Gobierno del Perú - solicita considere la ampliación de dicho préstamo a la suma antes mencionadas.

Por su parte mi Gobierno ha dispuesto lo conveniente a fin de que se prevean las contrapartidas necesarias para cubrir el aumento requerido.

Aprovecho la ocasión para renovar le las seguridades de mi especial consideración y estima.

Dios guarde a Usted

General de Brigada E. P.
Francisco Morales Bermúdez G.
Ministro de Economía y Finanzas

2565-INS

LSS/amdr.

POSIBLE INCIDENCIA DE LOS DISTINTOS TIPOS DE CAMBIO SOBRE EL PROYECTO

- (1) El Banco ha acordado con las autoridades monetarias del Perú utilizar como tipo de cambio en sus operaciones el del mercado de los certificados de divisas, el cual se ha mantenido estable desde septiembre de 1967, en la cotización de S/. 38,70 por dólar, cotización que ha sido utilizada en todos los cálculos del documento de préstamo.
- (2) Además de esta cotización existe también en Perú, desde la misma fecha antes indicada, el tipo de cambio del mercado de giros, el que se cotiza a razón de S/. 43,38 por US\$1.
- (3) En el préstamo bajo análisis, se ha previsto la utilización de US\$500.000 para cubrir gastos locales, calculados los soles de los costos locales al equivalente de S/. 38,70 por US\$1.00. En el caso de que la equivalencia de los dólares que se destinan a financiar costos locales se calculara al tipo de cambio del mercado de giros (S/. 43,38 por cada US\$1), solo se necesitarían US\$446.000 para financiar con divisas el mismo monto de moneda local, en vez de US\$500.000. El aporte local en soles al financiamiento del proyecto, calculado a la tasa de S/. 43,38 por US\$1,00 se reduciría del equivalente de US\$5.000.000 al equivalente de US\$4.490.000. En este caso, el porcentaje del aporte local bajaría del 47,6% del costo total del proyecto al 45,2%, mientras que la participación del Banco se elevaría del 52,4% al 54,8%, porcentaje éste que se encontraría dentro de los márgenes de financiación admitidos por el Banco para esta clase de proyectos.