



IICA



Proceedings of the
**III MEETING OF THE INTER-AMERICAN
COMMISSION ON ANIMAL HEALTH
(COINSA III)**

Buenos Aires, Argentina
June 28-30, 1989

WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 31 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The contributions provided by the Member States and the ties IICA maintains with its twelve Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The 1987-1991 Medium Term Plan, the policy document that sets IICA's priorities, stresses the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration.

In order to attain these goals, the Institute is concentrating its actions on the following five programs: Agricultural Policy Analysis and Planning; Technology Generation and Transfer; Organization and Management for Rural Development; Marketing and Agroindustry; and Animal Health and Plant Protection.

These fields of action reflect the needs and priorities established by the Member States and delimit the areas in which IICA concentrates its efforts and technical capacity. They are the focus of IICA's human and financial resource allocations and shape its relationship with other international organizations.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea and Spain.

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PROGRAM V: ANIMAL HEALTH AND PLANT PROTECTION

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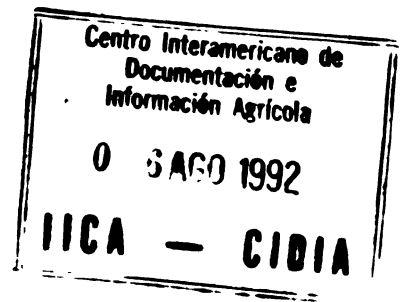
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REPORTS, RESULTS AND RECOMMENDATIONS
FROM TECHNICAL EVENTS SERIES

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"The views expressed in signed articles are those of the authors and do not necessarily reflect those of the Inter-American Institute for Cooperation on Agriculture."



PRESENTATION

The Inter-American Commission on Animal Health (COINSA) is the most important mechanism through which animal health directors from the Americas can analyze the current problems in that field at the hemispheric and subregional levels. It serves as a forum to discuss and evaluate possible solutions.

Since it was founded in 1983, COINSA has become the highest level forum on animal health in the Americas, because of the seriousness and professionalism with which its members have deliberated on the issues before them.

This book presents the report of the Third Hemispheric Meeting of COINSA and the papers discussed during the same.

The orientation proposed for the action to be taken is an important guide not only for IICA but also for other international and regional technical cooperation organizations active in the field of animal health in the Americas.

Héctor Campos
Deputy Director Animal Health
IICA

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III MEETING OF THE INTER-AMERICAN COMMISSION ON ANIMAL HEALTH

FINAL REPORT

The Third Meeting of the Inter-American Commission on Animal Health was held at the Plaza Hotel, in Buenos Aires, Argentina, from June 28 to 30, 1989, according to the convocation made by the Director General of the Inter-American Institute for Cooperation on Agriculture and accomplishing Resolution No. 15 of the Second Extraordinary Meeting of the Inter-American Board of Agriculture.

DIRECTIVE BOARD

During the Preliminary Session, held at the beginning of the Meeting, the Directive Board was elected as follows:

Chairman:	Dr. Oscar Bruni (Argentina)
Deputy Chairman:	Dr. Lynden Bryan (Jamaica)
Rapporteur:	Dr. Pedro Bartzabal (Uruguay)

Dr. Héctor Campos, Deputy Director of Animal Health of IICA, acted as Ex-Officio Secretary.

During the Preliminary Session, a Committee for the Acknowledgement of Professional Merits was appointed to select those professionals who would be specially distinguished by the Inter-American Commission on Animal Health. Said Committee was composed of the Representatives of Barbados, Chile, Colombia and Honduras.

In accordance with their discussion, the members of this Committee decided to award the following outstanding professionals with diplomas, in acknowledgement of their remarkable work in favour of Animal Health in the American countries: Dr. Pedro N. Acha (RIP), Dr. Raúl Casas Olascoaga, Dr. John Mason, Dr. Augusto Vallenias and Dr. Abraham Arce.

PARTICIPANTS

Representatives from the following Members States of the Inter-American Institute for Cooperation on Agriculture participated in the Meeting: Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, St. Vincent & the Grenadines, St. Lucia, Trinidad & Tobago, United States, Uruguay and Venezuela.

Observers from Belize and Israel as well as from the following regional and international organizations: FAO, PAHO, OIE, EDI/World Bank, IDB, also took part in the Meeting.

The United States Agency for International Development (USAID), the United States Animal Health Association (USAHA), the World Veterinary Association, the Pan American Association of Veterinary Sciences (PANVET), and the Inter-American Confederation of Livestock and Agricultural Producers (CIAGA) were also represented in this Meeting.

AGENDA

The Meeting was held in accordance with the following Agenda:

1. Compliance with Recommendations of COINSA II and of the Sub-Regional Meetings of COINSA held in 1987
2. Progress report in compliance with the goals of the Animal Health Plan for the Americas by the Year 2000 (PLASA 2000)
3. Report of the Seminar on Animal Health Administration and Economics
4. Inter-American Network of Animal Health Laboratories (RILSA)
5. Information and monitoring of animal and plant health in Latin America and the Caribbean
6. Report of the Hemispheric Swine Fever Surveillance System
7. Participation of the livestock sector in animal health programs
8. Exchange of information on sanitary legislation in the countries to facilitate the international trade of animals and animal products
9. Strengthening of international agricultural quarantine services and animal health emergency systems
10. Inter-American Compendium of Registered Veterinary Products
11. Biotechnology and animal health
12. Reports of the Inter-American Group for Coordination in Animal Health (GICSA)
13. Reorganization of the Pan American Association of Veterinary Sciences (PANVET)
14. Other business

DEVELOPMENT OF THE MEETING

During the development of the Meeting, an inaugural session was held addressed by the Secretary of Agriculture, Livestock and Fisheries of Argentina, Dr. Ernesto Figueras; Dr. Oscar A. Bruni, General Administrator of the National Animal Health Service of Argentina; Dr. Jacques Crosnier, Director of Seminars of the Economic Development Institute of the World Bank; Dr. Louis Blajan, Director General of the International Office of Epizootics and Dr. Martín E. Piñeiro, Director General of the Inter-American Institute for Cooperation on Agriculture.

Four meetings of the Sub-Regional Committees of the Inter-American Commission on Animal Health for the Central, Caribbean, Andean and Southern Areas were held, the reports of which appear as annexes 1, 2, 3 and 4 to this Final Report.

Resolution No. 1

IICA'S TECHNICAL COOPERATION ON ANIMAL HEALTH

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEING:

The document COINSA III/4, "Compliance with the Recommendations of COINSA II and of the Subregional Meetings of COINSA held in 1987; Report of the Actions of IICA on Animal Health",

CONSIDERING:

1. The effort made by the countries of the American hemisphere to fulfill the commitments of COINSA meetings held in 1985 and 1987,
2. The aid from IICA, other institutions of technical cooperation and the different financing agencies to support the countries in the development of the animal health programs,

RESOLVES:

1. To accept the report submitted by IICA on the activities developed by the countries, the different agencies and IICA itself to fulfill the recommendations of 1985 and 1987 COINSA meetings.
2. To request to the IICA General Directorate to keep within its priorities the support to the animal health services and programs of the Ministries of Agriculture of Latin America and the Caribbean countries.

Resolution No. 2

**FOLLOW UP OF THE ANIMAL HEALTH PLAN FOR THE AMERICAS
BY THE YEAR 2000**

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/5, "Progress report in complying with the goals of the Animal Health Plan for the Americas by the Year 2000",

CONSIDERING:

1. The efforts that the Latin American and Caribbean countries are performing to improve the animal health services and their fight programs against the main diseases and pests, which agrees with the Animal Health Plan for the Americas by the Year 2000 (PLASA 2000),
2. That according to the PLASA 2000 its first partial evaluation should be performed by the end of 1990,

RESOLVES:

1. To encourage the Latin American and Caribbean countries to continue applying the Animal Health Plan for the Americas by the Year 2000 (PLASA 2000) as an orientation and guideline to develop their animal health programs.
2. To request IICA that by the end of 1990 it performs the first evaluation of PLASA 2000. In this case, it would be necessary the participation of a representative of each area: Central, Caribbean, Andean and Southern areas; the results of such evaluation should be submitted in the sub-regional meetings of COINSA, to be held in 1991.

Resolution No. 3

ADMINISTRATION AND ECONOMICS IN ANIMAL HEALTH

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/6, "Report on the Seminar on Animal Health Administration and Economics",

CONSIDERING:

That said report includes important recommendations for the improvement of the managing and operative capacity of the officials in charge of the Latin American and Caribbean Animal Health Programs and for a more efficient performance of the veterinary services,

RESOLVES:

1. To adopt the report of the Seminar on Animal Health Administration and Economics and its recommendations.
2. To thank the National Animal Health Service of the Secretariat of Agriculture, Livestock and Fisheries of the Argentine Republic, the Economic Development Institute, the International Office of Epizootics and the Inter-American Institute for Cooperation on Agriculture the support given to make the performance of this Seminar possible.

Resolution No. 4

INTER-AMERICAN NETWORK OF ANIMAL HEALTH LABORATORIES

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The documents: COINSA III/7, "Progress report on the implementation of the Inter-American Network of Animal Health Laboratories (RILSA)", COINSA III/8, "Report on the Evaluation of RILSA's Laboratories", COINSA III/9, "Model of project of technological exchange to strengthen the Laboratories. Strengthening of the Veterinary Diagnostic Laboratories of REDSUR",

CONSIDERING:

1. That the Animal Health Laboratories are the axis of the Animal Health Services, and thus, its optimum performance and operation is required for better support of the animal health programs,
2. That the Interamerican Network of Animal Health Laboratories (RILSA), which IICA has already organized, is a very important mechanism for the technological exchange in that field,

RESOLVES:

1. To request IICA to continue its support for the strengthening of the Animal Health Laboratory Services of the countries, promoting the instrumentation of multinational projects with external resources in order to improve the operation of those services.
2. To continue the instrumentation of the Interamerican Network of Animal Health Laboratories as a way of exchange and link between the laboratory services of the countries of the Americas.

Resolution No. 5

USE IN ANIMAL HEALTH OF THE ADVANCES IN BIOTECHNOLOGY

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/10, "Biotechnology and Animal Health",

CONSIDERING:

1. The development and future prospectives of the recombinant DNA technologies for animal health, both in the diagnostic and in disease prevention fields,
2. That IICA, with the aid of different agencies, among them, PAHO, OIE, OAS, IDB, has been working to develop guidelines on how to use and secure products derived from recombinant DNA technology as well as to the safety upon release into the environment,

RESOLVES:

To encourage the countries to take advantage of the developments in biotechnology, in favour of their animal health programs; the guidelines, which IICA has been developing with the aid of other agencies, should serve as a basis for their production and use.

Resolution No. 6

**MONITORING AND INFORMATION ON ECONOMIC LOSSES DUE TO ANIMAL PESTS
AND DISEASES IN LATIN AMERICA AND THE CARIBBEAN**

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The documents: COINSA III/11, "Progress report of the Animal and Plant Health Monitoring Network for Latin America (RIMSAL)", and COINSA III/12, "Progress report of the Caribbean Animal and Plant Health Information Network (CARAPHIN)",

CONSIDERING:

1. That the factor knowing the economic losses caused by the diseases and pests of animals is important to plan the animal health programs properly and to adopt priorities as to the allotment of resources to combat them,
2. That RIMSAL and CARAPHIN Networks, which IICA is developing, are important mechanisms to accomplish the above-stated aim,

RESOLVES:

1. To encourage the countries to establish national units with specialized personnel, in charge of the collection, analysis, processing and spreading of information on the economic losses caused by animal diseases and pests.
2. To request IICA to continue developing RIMSAL and CARAPHIN in Latin America and the Caribbean countries, respectively, trying to unify the methodologies and procedures of those two mechanisms: monitoring and information, for their future integration to a hemispheric network.
3. To request IICA to assist in the design of projects and the identification of resources to support the countries to develop their monitoring and information units.

Resolution No. 7

CONTROL AND ERADICATION OF HOG CHOLERA IN LATIN AMERICA

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/13, "Report of the Hemispheric Swine Fever Surveillance System",

CONSIDERING:

1. That Hog Cholera continues to be a serious sanitary problem for most of the Latin American countries,
2. That the developments in the availability of resources and methods of control of said disease make it possible to carry out eradication programs,
3. That the Hemispheric Swine Fever Surveillance System has been of outstanding importance in monitoring the hog cholera incidence in the American countries,

RESOLVES:

1. To encourage the countries to organize effective programs to control hog cholera, leading to eradication.
2. To request IICA and other institutions of technical and financial cooperation, to support the development of programs to fight against that disease in those countries where hog cholera is present.
3. To request IICA and PANAFTOSA/PAHO to continue developing the Hemispheric Swine Fever Surveillance System.

Resolution No. 8

INTER-AMERICAN COMPENDIUM OF REGISTERED VETERINARY PRODUCTS

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/14, "The Inter-American Compendium of Registered Veterinary Products, Progress Report 1989",

CONSIDERING:

1. That the Inter-American Compendium of Registered Veterinary Products developed by IICA with the support of the Virginia Polytechnic Institute, the Food and Drugs Administration (FDA) of the United States and the United States Department of Agriculture (USDA) is an important way to exchange information on the veterinary products which are in use in the countries of the Americas,
2. That it is in the interest of every Latin American and Caribbean country to establish or strengthen its services to and control veterinary products,

RESOLVES:

1. To request IICA that, with the aid of other interested agencies, it continues developing the Inter-American Compendium of Registered Veterinary Products, updating and enlarging the information available and organizing its third stage, which is comprised of information on registered biologic products.
2. To encourage the Latin American and Caribbean countries to develop or improve their services to and control veterinary products, requiring, when necessary, the aid of IICA and other institutions' animal health technical cooperation.

Resolution No. 9

PARTICIPATION OF THE LIVESTOCK SECTOR IN ANIMAL HEALTH PROGRAMS

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/15, "Organization of the United States Animal Health Association (USAHA) in support of the animal health programs",

CONSIDERING:

1. That the participation of the livestock sectors in the planning, discussion and execution of national animal health programs is of major importance for their optimum development,
2. That the creation in the Latin American and the Caribbean countries of groups similar to the United States Animal Health Association (USAHA) but specifically tailored to each country's needs would provide important forums to analyze and promote the animal health programs,

RESOLVES:

1. To encourage the countries to create national and regional associations, unions, commissions or committees with the participation of producers, manufacturers and authorities from the livestock sector which can discuss the animal health problems and their solutions.
2. To request IICA to promote and support the creation of these groups in the animal health field.

Resolution No. 10

**EXCHANGE OF INFORMATION ON SANITARY LEGISLATION IN
THE COUNTRIES TO FACILITATE THE INTERNATIONAL
TRADE OF ANIMALS AND ANIMAL PRODUCTS**

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/16 "Exchange of information on Sanitary Legislation in the countries to facilitate the international trade of animals and animal products",

CONSIDERING:

1. That sanitary legislation by the countries concerning the international trade of animals and animal products is of major importance,
2. That an analysis and understanding of the sanitary legislation of each country will facilitate their harmonization,
3. That the International Office of Epizootics (OIE) maintains the International Zoosanitary Code, which serves to aid the promulgation of national sanitary legislation for the exchange of livestock and livestock products,
4. That IICA has commenced a study of the sanitary legislation affecting the international livestock trade,

RESOLVES:

That IICA continue the study of the legislation regulating international trade of animals and animal products and suggest a mechanism to facilitate the permanent exchange of regulatory information and promote the harmonization of laws and regulations based on the International Zoosanitary Code and other available documents.

Resolution No. 11

**STRENGTHENING OF THE EMERGENCY AND INTERNATIONAL
QUARANTINE SYSTEMS IN ANIMAL HEALTH**

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/17, "Organization of a national animal health emergency and quarantine system",

CONSIDERING:

1. That larger international trade of livestock products among the countries increases the risk of introduction of exotic diseases and pests,
2. That in order to prevent the introduction and establishment of such diseases in any country, it is necessary to strengthen the national animal health emergency and quarantine systems,
3. That IICA has created the Animal Health and Plant Protection Emergency Fund,

RESOLVES:

1. To encourage the Latin American and Caribbean countries to strengthen their animal health emergency and quarantine services, by appointing trained veterinarians in charge of said services.
2. To request IICA and other regional organizations of technical cooperation in animal health support the strengthening of animal health quarantine and emergency services with appropriate projects.
3. To request IICA to maintain and, if possible, increase the Animal Health and Plant Protection Emergency Fund.

Resolution No. 12

ANIMAL HEALTH ACTIONS IN THE CENTRAL AREA

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/18, "Report of the Central Area Committee of COINSA",

CONSIDERING:

That the above-stated report includes recommendations on specific actions to improve the animal health situation of the countries of the Central Area,

RESOLVES:

To adopt the report and recommendations of the Committee for the Central Area.

Resolution No. 13

ANIMAL HEALTH ACTIONS IN THE CARIBBEAN AREA

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/19, "Report of the Caribbean Area Committee of COINSA",

CONSIDERING:

That the above-mentioned report includes recommendations of specific actions to improve the animal health situation of the countries of the Caribbean Area,

RESOLVES:

To adopt the report and recommendations of the Caribbean Committee.

Resolution No. 14

ANIMAL HEALTH ACTIONS IN THE ANDEAN AREA

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/20, "Report of the Andean Area Committee of COINSA",

CONSIDERING:

That said report includes recommendations of specific actions to improve the animal health situation of the countries of the Andean Area,

RESOLVES:

To adopt the report and recommendations of the Andean Committee.

Resolution No. 15

ANIMAL HEALTH ACTIONS IN THE SOUTHERN AREA

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/21, "Report of the Southern Area Committee of COINSA",

CONSIDERING:

That said report includes recommendations of specific actions to improve the animal health situation of the countries of the Southern Area,

RESOLVES:

To adopt the report and recommendations of the Southern Committee.

Resolution No. 16

INTER-AMERICAN GROUP FOR COORDINATION IN ANIMAL HEALTH

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The documents: COINSA III/22, "Report of the V Meeting of the Inter-American Group for Coordination in Animal Health"; and COINSA III/23, "Report of the VI Meeting of the Inter-American Group for Coordination in Animal Health (GICSA)",

CONSIDERING:

1. The efforts made by the international, regional and subregional institutions of technical cooperation in animal health in the Americas to rationalize the use of their resources, to avoid over-lapping of subjects and, if possible, to perform joint activities,
2. That despite the above-mentioned, there are still areas of action, such as animal health information, emergency and quarantine, in which joint action and coordination may be necessary,

RESOLVES:

1. To acknowledge the actions of the institutions comprising the Interamerican Group for Coordination on Animal Health (GICSA), towards the optimum advantage of their resources in favour of the countries of the region.
2. To request GICSA to continue researching the means to improve the inter-managing cooperation, mainly in the information, international quarantine and emergency areas.

Resolution No. 17

PAN-AMERICAN ASSOCIATION OF VETERINARY SCIENCES

The Third Meeting of the Inter-American Commission on Animal Health,

HAVING SEEN:

The document COINSA III/24, "Reorganization of the Pan-American Association of Veterinary Sciences (PANVET)",

CONSIDERING:

1. The efforts initiated by the Board of Directors of the Pan-American Association of Veterinary Sciences (PANVET) to consolidate this association and unify the veterinary profession in America,
2. That it is of major convenience for all the associations and Colleges of the American countries to be recorded as members of PANVET and to take active part in its strengthening,
3. That the Second Ordinary Meeting of PANVET will take place during the XII Pan American Congress of Veterinary Sciences, in La Habana, Cuba, June 31 to August 4, 1990, to discuss the future prospects of the Association,

RESOLVES:

That the COINSA delegates report to their Veterinary Associations about the PANVET reorganization, encouraging them to become active members and attend the XII Pan American Congress of Veterinary Sciences.

VOTE OF THANKS TO THE GOVERNMENT OF ARGENTINA AND IICA

The Third Meeting of the Inter-American Commission on Animal Health,

CONSIDERING:

1. The generous support of the Government of the Argentine Republic in carrying out the Third Meeting of the Inter-American Commission on Animal Health, and the cordial hospitality offered to the delegations of the countries and the participating organizations; and
2. The substantial contribution made by the Inter-American Institute for Cooperation on Agriculture for holding this meeting,

RESOLVES:

1. To express its thanks to the Government of Argentina for its excellent support in making the Third Meeting of the Inter-American Commission on Animal Health possible and for its hospitality in hosting this event.
2. To express its thanks to the Inter-American Institute for Cooperation on Agriculture for its valuable cooperation in organizing and carrying out the meeting.

VOTE OF RECOGNITION IN MEMORY OF DR. PEDRO N. ACHA

The Third Meeting of the Inter-American Commission on Animal Health,

CONSIDERING:

1. That the establishment of the Inter-American Commission on Animal Health was due, in great part, to the efforts of Dr. Pedro N. Acha, whose vision enabled him to foresee the usefulness and benefits of this type of organization for consultation and the exchange of ideas in order to find solutions to the animal health problems that afflict the countries of the Americas,
2. That throughout his successful professional life, until his untimely death on August 27, 1988, Dr. Acha worked tirelessly to improve public veterinary health and animal health in the countries of the American hemisphere, combining his great human qualities with his dedication, sense of responsibility and vitality,

RESOLVES:

1. To grant a vote of gratitude in memory of Dr. Pedro N. Acha as testimony to his professional merits and his valuable contribution to veterinary sciences in the countries of the Americas.
2. To request the Inter-American Institute for Cooperation on Agriculture (IICA) to express the sympathy of the members of COINSA to the members of Dr. Acha's family for the irreparable loss of this illustrious professional.

ACKNOWLEDGEMENT TO DR. HARRY C. MUSSMAN

The Third Meeting of the Inter-American Commission on Animal Health,

CONSIDERING:

1. The outstanding performance of Dr. Harry C. Mussman during his professional career devoted to animal health and especially during the last three years when he was responsible for IICA Animal Health and Plant Protection Program,
2. That Dr. Mussman is leaving the Inter-American Institute for Cooperation on Agriculture in July, 1989,

RECOMMENDS:

To extend an acknowledgment to Dr. Harry C. Mussman for his valuable support to the Animal Health Services of the American countries and to wish him the greatest success in his future activities.

REPORT OF THE COINSA MEETING FOR THE CENTRAL AREA

The Meeting of the Sub-Regional Committee for the Central Area of the Inter-American Commission on Animal Health was held at the Plaza Hotel, Buenos Aires, Argentina, on June 28, 1989.

The Directive Board was composed as follows:

Chairman: Luis A. Barba (El Salvador)
Rapporteur: Jorge González (Mexico)

Dr. Jorge Torres Barranca from IICA acted as Ex-Officio Secretary.

Participants

Representatives from: Costa Rica, El Salvador, Guatemala, Honduras, Mexico and Nicaragua participated in the Meeting.

Agenda

The meeting was held according to the following Agenda:

1. Election of the Chairman and of the Rapporteur
2. Discussion on the Project on Evaluation of the Economic Losses Caused by Animal Pests and Diseases
3. Production and exchange of biologicals for prevention and diagnosis in the Central Area
4. Experiences regarding the settlement of agreements directed to strengthen Animal Health laboratories
5. Current situation and prospectives of controlling Hog Cholera in Central America and Mexico
6. Situation of Venezuelan equine encephalitis in Central America and Mexico
7. Other business

Recommendations

The following recommendations were adopted by the Committee:

Recommendation No. 1

CONSIDERING:

1. That the economic impact caused by animal pests and diseases in livestock production is hardly known,
2. That, in order to know animal health situation within the region, it is necessary to have a Laboratory Network as well as National Units which will make possible to capture, to process and to analyze the economic losses caused by animal pests and diseases,
3. That there is lack of a system for disseminating information related to zoosanitary situation within the region,
4. That, in order to know the cost/benefit relation of the official zoosanitary campaigns, it is necessary to have a system for the evaluation of the economic losses caused by animal pests and diseases,

IT IS RECOMMENDED:

1. To urge the national authorities to analyze and, if it is the case, to approve the project "Economic Losses Caused by Animal Pests and Diseases".
2. To ask IICA to devote itself to seeking external financing for the settlement and execution of the project.
3. To ask IICA to support the establishment of priority zoosanitary campaigns for the Central Area, according to the information obtained through the System for the Evaluation of the Economic Losses Caused by Animal Pests and Diseases.

Recommendation No. 2

CONSIDERING:

1. That the countries of the Central Area have the infrastructure and equipment to produce biologicals for the diagnosis and prevention of animal diseases,
2. That the staff currently working in diagnosis, research, production and testing of biologicals needs to be specifically updated in these areas,
3. That some countries of the Central Area have a limited capacity to produce biologicals,
4. That in some countries of this Area, the official animal health campaigns are limited by the lack of biologicals and by the shortage of financial resources to purchase them in other countries,

IT IS RECOMMENDED:

1. To request IICA support to begin studies directed to learn the real needs for biologicals in order to orient properly their production.
2. To identify those units that can be used as reference laboratories in the production of biologicals for other countries.
3. To unify technical criteria for the production and quality control of biologicals according to international standards.
4. To promote agreements among the countries of the region directed to the exchange of biologicals.
5. To determine the needs and places for staff training in biological production.
6. To request IICA support to identify the mechanisms to provide laboratories with the necessary resources for producing biologicals.
7. To require IICA and other technical and financial cooperation agencies, to support the training of professionals and technicians in production of biologicals.

Recommendation No. 3

CONSIDERING:

1. That the sources that have financed traditionally the Projects for the Strengthening of Animal Health Laboratories have diminished,
2. That according to the experiences of the Agreement for the Strengthening of Animal Health Laboratories between IICA and SARH (Mexico),

IT IS RECOMMENDED:

To urge the National Authorities of the Central Area countries to analyze and, if it is the case, to approve the settlement of Cooperation Agreements for the Strengthening of their Animal Health activities.

Recommendation No. 4

CONSIDERING:

1. That El Salvador, Guatemala, Honduras, Mexico and Nicaragua are carrying out isolated actions for controlling Hog Cholera,
2. That Costa Rica, Panama and the Dominican Republic are countries free from this disease,

IT IS RECOMMENDED:

1. To require IICA support to hold periodic regional meetings in order to analyze the situation and the progress of sanitary campaigns in these countries.
2. To require the support of Technical Cooperation Agencies to draw up and to instrument a regional project for the control and eradication of Hog Cholera.

Recommendation No. 5

CONSIDERING:

1. That Venezuelan equine encephalitis is still a problem for the countries of the Central Area,
2. That these countries have problems to diagnose this disease and to acquire the biologicals necessary for controlling it,

IT IS RECOMMENDED:

1. To require the support both of the IICA and of other technical cooperation agencies in order to strengthen the diagnostic methodologies of Venezuelan equine encephalitis in the Central Laboratories of this Region.
2. To require IICA to support these countries in searching due mechanisms for acquiring the biologicals which are necessary for controlling this disease.

REPORT OF THE COINSA COMMITTEE FOR THE
CARIBBEAN, CANADA AND THE UNITED STATES

The meeting of the regional sub-committee of COINSA for the Caribbean, Canada and the United States was held on June 28, 1989, at the Hotel Plaza, in Buenos Aires, Argentina.

The Executive Board of the Committee was:

Chairman: Dr. Trevor King (Barbados)
Rapporteur: Dr. Keith Scotland (St. Lucia)

Dr. Barry Stemshorn of IICA acted as Ex-Officio Secretary.

Participants

The following countries were represented at the meeting: Barbados, Canada, Dominica, Grenada, Guyana, Haiti, St. Lucia, Jamaica, St. Vincent & the Grenadines, Trinidad & Tobago and the United States of America. Also in attendance were observers from Belize, the United States Agency for International Development, the United States Animal Health Association and IICA.

Agenda

The meeting addressed the following topics:

1. Implementation of the Caribbean Animal and Plant Health Information Network (CARAPHIN)
2. Proposals for training activities to strengthen laboratory services, disease surveillance at slaughterhouses, and quarantine services
3. Control of Amblyomma variegatum and associated diseases in the Caribbean
4. Bluetongue and CAE studies in the Caribbean
5. Export/Import issues
6. Participation of the Caribbean in activities of the OIE

Recommendations

The Committee adopted the following recommendations:

Recommendation No. 1

CONSIDERING:

1. That a crucial factor to facilitate the development of animal health programs is that of the availability of timely and accurate information for planning and decision making, and
2. That a major drawback to livestock development in the Caribbean has been the chronic lack of accurate information on animal diseases and the timely transfer of the available information,

RESOLVES:

To thank the Canadian International Development Agency, IICA and their collaborators for their support in the development of the Caribbean Animal and Plant Health Information Network (CARAPHIN), and recommends that this support be continued.

Recommendation No. 2

RECOGNIZING:

1. The fact that disease surveillance systems must rely on information from field and other areas where animal diseases are detected,
2. That the quality of this information is important to the effective functioning of CARAPHIN, and
3. That some strengthening of the existing meat inspection, laboratory testing and quarantine procedures is deemed necessary in the Caribbean at this time,

RESOLVES:

That IICA seek funds from donor agencies to support training in slaughterhouse inspection and laboratory testing, and to strengthen quarantine activities in order to enhance the effectiveness of animal disease surveillance and the protection of public health in the Caribbean.

Recommendation No. 3

CONSIDERING:

1. Previous COINSA recommendations with respect to the eradication of Amblyomma variegatum which currently poses a significant threat to livestock development in the Caribbean,
2. The continuing threat posed by this tick and the diseases that it transmits, to livestock production in the Americas,
3. That IICA and other agencies have put much effort into securing funding and technical assistance for the eradication of this tick, and
4. That certain funding and regulatory obstacles are now impeding the implementation of an eradication program,

RESOLVES:

That IICA, FAO, USAID and other agencies, urgently seek means of overcoming the regulatory obstacles that are now impeding the development or implementation of an effective regional program to eradicate Amblyomma variegatum and its associated diseases (heartwater and dermatophilosis) from IICA member countries in the Caribbean.

Recommendation No. 4

IN RECOGNITION:

1. That Caprine Arthritis Encephalitis (CAE) infection appears to be an emerging problem in the Caribbean, and concerned about the impact that this may have as an obstacle to intra-regional trade in goats, and
2. That efforts are being made by individual governments in many member states towards encouraging goat breeding and rearing projects,

RESOLVES:

That IICA support the development of regional testing capability for CAE by facilitating the procurement of antigen and other materials required for laboratory testing.

Recommendation No. 5

RECOGNIZING:

1. The valuable role played by the OIE in the collection and dissemination of technical and epizootiological information,
2. And further the other benefits that participation in OIE activities can provide, and
3. Bearing in mind that many Caribbean states are not members of the OIE,

RESOLVES:

That IICA assist the CARICOM member states nominee, who would be one of the national Directors of Animal Health, to participate as observer in OIE meetings, with a view to facilitating the fullest participation of these countries in the programs of the OIE.

Recommendation No. 6

BLUETONGUE STUDIES

RECOGNIZING:

The valuable contribution that IICA, OIRSA, USDA/OICD, Universities of Wisconsin and Florida have made in the study of prevalence and isolation of Bluetongue virus in a number of countries in the Caribbean and Central America,

COGNISANT:

Of the potential effect that this would may have on the movement of animals and germplasm in the hemisphere,

RESOLVES:

To recommend that IICA and the other organizations involved continue their support of these bluetongue studies and where possible, expand the programme to involve other interested countries, with a view of harmonizing international trade.

REPORT OF THE COINSA COMMITTEE FOR THE ANDEAN AREA

The meeting of the COINSA Sub-Regional Committee for the Andean Area was held at the Plaza Hotel, Buenos Aires, Argentina, on June 28, 1989.

The Directive Board was composed as follows:

Chairman: Dr. Jaime Cárdenas (Colombia)
Rapporteur: Dr. Marco Arbulú (Peru)

Dr. Enrique E. Rieger from IICA acted as Ex-Officio Secretary.

Participants

Representatives from Bolivia, Colombia, Ecuador, Peru and Venezuela participated in the Meeting.

Agenda

The meeting was held according to the following agenda:

1. Discussion on the Project Profile: Dr. Enrique Rieger
"Andean Program for Cooperation,
Training and Technological Exchange
IICA-JUNAC, for the Laboratories of
Animal Health and Epidemiological
Surveillance PACCIT"
2. Discussion on the Project: "Develop- Dr. Jaime Cárdenas
ment of the Integral Centers of Animal
Health and Production -CISPAS- within
the framework of the National Network
of Livestock Laboratories with focus
to the Andean Area"
3. Discussion on the Project Profile: Dr. Enrique Rieger
"Strengthening of the International
Emergency and Animal and Plant
Quarantine Systems in the Andean
Area"
4. Discussion on the Project Dr. Guido Cuadros
"Strengthening of Veterinary Dr. Enrique Rieger
Laboratories for Production and
Control of FMD Oil-Based Vaccine,
Ecuador 1990-1998"

5. Reactivation of the Laboratory
Network from the Ministry of
Agriculture of Venezuela

Dr. Marco Herrera
Dr. Dante Castagnino

6. Other business

Recommendations

The following recommendations were adopted by the Committee:

Recommendation No. 1

Andean Program for Cooperation, Training and Technological
Exchange IICA-JUNAC

CONSIDERING:

1. That the services rendered by the laboratories which are part of the National Networks of Veterinary Laboratories in every country of the Andean Area are basic and necessary to carry out and evaluate the different campaigns or sub-programs for the prevention, control and/or eradication of the main diseases,
2. That despite the efforts of the five Andean Countries, there is still constant weakening and, in some cases, stagnation of the structures and services rendered by the Veterinary Laboratories, which causes a negative effect on the campaigns or sub-programs for disease control,
3. That specialized high quality reference centers have been identified in the Andean Area, such as LIMV, LIVET VECOL and LANIP in Colombia and IIV from CENIAP in Venezuela, and that it is necessary to optimize the existing laboratory resources,
4. That IICA and the Board of the Cartagena Agreement adopted the suggestions and recommendations made to the "Andean Program for Cooperation, Training and Technological Exchange" which were given in each of the workshops, where the document was discussed,
5. That in its last meeting held in Caracas during last April, the Agriculture and Livestock Bureau from the Board of the Cartagena Agreement approved, as a decision, the profile that had been drawn up.

IT IS RECOMMENDED:

1. To accept the proposal of the profile: "Andean Program for Cooperation, Training and Technological Exchange IICA/JUNTA, for the Laboratories of Animal Health and Epidemiological Surveillance" as a sub-regional joint activity for strengthening the National Networks and the Andean Sub-Regional Network.
2. That the countries of the Area, through their institutions, organize and be responsible for the Program with the support and assistance of IICA/JUNTA and with the aid of other international organizations.
3. To request IICA/JUNTA their support to draw up and settle the project as soon as possible, so that, as a sub-regional initiative, once duly approved by the five countries of the Andean Area, it may be submitted to financing agencies.

Recommendation No. 2

Support to the Project for Strengthening the Veterinary
Laboratories in Ecuador

CONSIDERING:

1. That on February 4, 1971, it was enacted in Ecuador the law, which enables veterinary laboratories to function as a technical and administrative unit, under the National Institute for Tropical Hygiene and Medicine (INHMT), ascribed to the Ministry of Public Health, depending on the Undersecretariat of Public Health-Zone II; that its headquarters are in Guayaquil and that it has no link to the National Animal Health Program (PNSA), of the Ministry of Agriculture and Livestock,
2. That such condition diminishes the animal health policies, activities and actions, which are different in their context and priority, as compared to Public Health; thus showing a weakened institutional consistency,
3. That in the rest of the countries of the Andean Area, except for Ecuador and Peru, there is a close relation between the services rendered by the veterinary laboratories and the Ministries of Agriculture and Livestock, concerning their organization and operation,
4. That Ecuador has drawn-up a "Project for Strengthening the Veterinary Laboratories for the Production and Control of FMD Oil-Based Vaccine", where the institutional constraints already explained are closely analyzed, giving the alternative to move the Veterinary Laboratories currently under the Ministry of Public Health to the Ministry of Agriculture and Livestock as an ascribed institution,

IT IS RECOMMENDED:

1. That the Government of Ecuador continue the initiatives presented and that the document be considered as a guideline to be adopted by other Governments of the Andean Area that have similar problems.
2. To support the initiative for strengthening the National Network of Veterinary Laboratories of Ecuador and the National Animal Health Program.
3. That the Ministry of Health consider the institutional alternative of passing the responsibilities of the Veterinary Laboratories of INHMT to the Ministry of Agriculture and Livestock.

Recommendation No. 3

Strengthening the International Emergency and
Animal and Plant Quarantine Systems

CONSIDERING:

That it is necessary and of prior importance to settle and officialize the emergency systems on Animal Health, as well as to strengthen the quarantine services in each one of the countries of the Andean Area,

IT IS RECOMMENDED:

To accept and support the proposed "Project for strengthening the International Emergency and Animal and Plant Quarantine Systems", drawn up and submitted by IICA/JUNTA at the sub-regional Andean level.

REPORT OF THE COINSA COMMITTEE FOR THE SOUTHERN AREA

The meeting of the COINSA Sub-Regional Committee for the Southern Area took place at the Plaza Hotel, in Buenos Aires, Argentina, on June 28, 1989.

The Directive Board was composed as follows:

Chairman: Dr. Sergio Garay (Paraguay)
Rapporteur: Dr. Eugenio Perdomo (Uruguay)

Dr. Raymond Dugas from IICA acted as Ex-Officio Secretary.

Participants

Representatives from Argentina, Brazil, Chile, Paraguay and Uruguay participated in this meeting. Observers from the Pan-American Center of Zoonosis (CEPANZO), from the Pan-American Sanitary Office, from the Regional Office of the World Health Organization, from the Inter-American Development Bank and from Israel also attended the meeting.

Agenda

The meeting was held according to the following agenda:

1. Election of the Chairman and the Rapporteur
2. Discussion on the Project for the Economic Evaluation of Animal Pests and Diseases
3. Discussion on the Project for the Strengthening of the International Emergency and Animal and Plant Quarantine Systems for the Southern Area
4. Report about the progress in the organization of the National Networks of Animal Health Laboratories in Argentina and Uruguay
5. Proposals for putting in motion animal health laboratories as Reference Centers
6. Progress reports of the Projects for strengthening the official animal health services in Southern Area countries with external financing

Recommendations

The following recommendations were adopted by the Committee:

Recommendation No. 1

Economic Evaluation of Animal Diseases and Pests
in the Southern Area

CONSIDERING:

1. That the knowledge of the economic impact of animal diseases and pests in livestock production, productivity and trading, is essential to set up priorities for their prevention, control and/or eradication,
2. That existing information mechanisms on presence of diseases do not include their economic evaluation, development of sanitary programs,
3. That the main source of information on disease and pest occurrence is provided by animal health laboratories,
4. That, despite the important laboratory infrastructure existing in the Southern Area countries, it is necessary to strengthen the technical capacity of the units in every country, and to establish a mechanism for the technical exchange among those units,

IT IS RECOMMENDED:

1. That IICA brings to feasibility study level the project "Economic Evaluation of Animal Diseases and Pests in the Southern Area".
2. To present said project to international financing institutions, to ensure its short-term execution, having technical assistance from IICA.

Recommendation No. 2

Strengthening of emergency and animal and plant
quarantines systems in the Southern Area

CONSIDERING:

1. That due to the growingly dynamic international agricultural and livestock trade, the risk of introduction of exotic diseases and pests on animals and plants has been increased,
2. That the countries need to maintain an adequate and reliable sanitary level to access to the international markets of agricultural products,
3. That official animal protection services need to strengthen their Programs for prevention, diagnosis and combat of exotic diseases and pests, that enable them to maintain their sanitary status,

IT IS RECOMMENDED:

1. That IICA bring up to feasibility study level the project "Strengthening of Emergency and Animal and Plant Quarantines in the Southern Area".
2. To present said project to international financial institutions, to ensure its short-term execution, having technical assistance from IICA.

Recommendation No. 3

Organization of the National Networks of Animal
Health Laboratories

CONSIDERING:

1. The importance that official and private research and teaching Animal Health Laboratories use diagnostic methods with the same technical procedures and with the same interpretation criteria, and be provided with reactivities duly controlled by national and/or international reference laboratories,
2. The importance of laboratories in providing information for epidemiological surveillance systems of the Animal Health Services,

IT IS RECOMMENDED:

That IICA continue supporting these countries in the establishment of mechanisms for the unification of diagnostic techniques, capture and diffusion of information from the laboratories of the Southern Area countries.

Recommendation No. 4

Putting in motion of the Animal Health Laboratories
as Centers for Production and Control of Biologicals

CONSIDERING:

1. That it is difficult for the laboratories to be supplied with veterinary biologicals, mainly reactivities for disease diagnosis,
2. That it is important that the Animal Health Laboratories use reactivities of a same origin to unify interpretation criteria,

IT IS RECOMMENDED:

1. To begin studies tending to know the actual needs of the countries concerning biologicals in order to focus their production properly.
2. To assess the present capacity of the laboratories of the Southern Area, concerning production and control of veterinary products for diagnosis and prevention of diseases, based on the Catalog of Animal Health Laboratories for the Southern Area - LABSUR.
3. To identify the units which may serve as reference laboratories to supply other countries with biologicals.
4. To carry out feasibility studies to put in motion those laboratories identified as reference centers in production and control of biologicals as well as to determine administrative mechanisms for supplying them for other countries.

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COMPLIANCE WITH THE RECOMMENDATIONS OF COINSA II AND
OF THE REGIONAL MEETINGS OF COINSA HELD IN 1987.
REPORT OF THE ACTIONS OF IICA ON ANIMAL HEALTH

Héctor Campos*

I. COINSA II

The Second Meeting of the Inter-American Commission on Animal Health -COINSA II- was held in Brasilia, D. F., Brazil from April 29 to May 1, 1985.

During the course of this meeting, 11 recommendations were adopted. They have served as a guide in the last two years for the countries of Latin America and the Caribbean to develop their actions in animal health, and to focus the efforts of IICA and other international and regional organizations in delineating their technical cooperation programs in this area.

Provided below is a summary of the main actions taken by the governments, IICA, and other institutes, to comply with the recommendations of the Second Meeting of COINSA.

Recommendation No. 1

Participation of the Livestock Sector in the Planning and Development of Animal Health Programs

Recognizing the importance of the productive sector in the development of animal health programs, IICA included in its 1987-1991 Medium Term Plan the need to encourage farmers to participate in health programs. Indeed their input is viewed as fundamental to the programs' success.

In the majority of countries, there is a notable and increasing interrelation between the government sector working in animal health and the private sector of producers and related industries.

In Central America and Panama, when implementing the screwworm eradication program, participation of livestock associations was sought immediately, in a strategy similar to the one used in Mexico for this purpose.

In the planning and execution of the Hemispheric Program for the Eradication of Foot-and-Mouth Disease, sponsored by PANAFOSA/PAHO, a very active participation of the livestock industry is included.

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In Chile, the program to control bovine leukosis in the pilot area is formulated at the request of cattle organizations and with their participation. The participation of the livestock sector to eradicate the foot-and-mouth disease in this country in 1988, was of primal importance.

In Paraguay, the pilot plan to control infectious equine anemia is implemented in close coordination with the producers; likewise, in this country the Rural Society participates in and has promoted programs to combat ticks, to provide laboratories for testing veterinary products, and to manage reproductive problems.

In Peru, programs to control bovine brucellosis and tuberculosis are promoted and sponsored by producers in the dairy zones of the country.

In the Caribbean Area, livestock owners have strongly advocated and supported programs to combat the Amblyomma variegatum tick, which is found in various countries.

These are only a few examples of the coordinated action between livestock owners and the public sector in the countries of the region. There is notably closer communication between groups for sharing the responsibility of controlling animal diseases and pests.

Recommendation No. 2

Social Communication in Animal Health

Under an agreement with Radio Nederland, IICA has begun the Project for Applied Communication in Education and Rural Development for Central America and the Caribbean. This project seeks to strengthen communication structures so that agriculture programs, including animal health, can be further developed and better used.

Several countries are working to establish or strengthen social communication units in support of animal health programs. Among them, Guatemala, Honduras and others.

In Chile, personnel received training and refresher courses to strengthen the social communication unit in that country's Division of Livestock Protection.

The recently initiated program to eradicate screwworm in Central America and Panama has a strong component of social communication, which will precede the rest of the field activities.

Recommendation No. 3

Diagnostic and Research Laboratories for Animal Health

In 1987, IICA began implementing the multinational project to strengthen laboratory services for animal health and epidemiological surveillance in the Central, Andean and Southern Areas. This project works to upgrade operating

structures of laboratory units in the countries. In August 1988 IICA began the implementation of the Inter-American Network of Animal Health Laboratories (RILSA), as a means of sponsoring horizontal technological exchange in this field.

Over the past two years, the countries, collaborating with IICA in charge of the Technical Secretariat, delineated the formation of the subregional networks of animal health laboratories in the Central, Andean and Southern Areas. In the Caribbean Area, they established bases for technological exchange between diagnostic laboratories of that subregion.

The meetings of laboratory directors in IICA's four geographic areas -LABCENTRAL, LABANTILLAS, LABANDINA and LABSUR- held between April and July of 1987, contributed to the aforementioned efforts.

Moreover, and in keeping with the specific requests of each country, training for laboratory personnel has been supported and encouraged by various measures: courses in laboratory management, offered in Venezuela; in-service training in new diagnostic techniques in several Central American countries; a seminar in the Central Area to detect toxic residues in meat; support for the implementation of a national laboratory network in Bolivia, and many other similar efforts.

Recommendation No. 4

Quarantine and Emergency Programs

In November of 1986, a course-seminar was offered in Mexico to train teachers in the management of "AUTOSIM", a technological package developed by the Mexican-American Commission for the Prevention of Foot-and-Mouth Disease (CPA), with the support of IICA. This package is designed to train personnel for emergency animal health programs. Delegates from a number of Latin American countries participated in the event, and as a result, systems and groups to handle emergencies have sprung up in several countries.

IICA co-sponsored the first regional course on exotic diseases with the Argentine National Institute of Agricultural Technology (INTA), the National Service for Animal Health (SENASA), and the U.S. Department of Agriculture (USDA). Officials from various countries of the hemisphere were updated on epidemiology and diagnostic techniques.

Also noteworthy is the new data bank for Brazilian exotic diseases. The service, established in collaboration with the USDA and IICA, is now being offered to all South American countries.

The international organizations of the Americas are unifying procedures for training and execution of animal health emergency programs, in order to propose homogeneous and harmonic strategies to the countries.

Also noteworthy is the establishment of the IICA's Animal and Plant Health Emergency Fund which can be used by Member States in justified emergency situations.

Recommendation No. 5

Coordinating International Technical Cooperation in Animal Health

Representatives from various international, regional and sub-regional organizations with technical cooperation projects in the hemisphere continue to meet periodically. Among them are the Food and Agriculture Organization (FAO), IICA, the Pan American Health Organization (PAHO), the International Office of Epizootics (OIE), the International Regional Organization for Animal and Plant Health (OIRSA) and the Board of the Cartagena Agreement. Representatives from USDA/APHIS (Animal and Plant Health Inspection Service) also participated.

The 1986 meeting was held in Washington, D. C. and sponsored by IICA. The 1987 meeting was convened by PAHO. Information was exchanged at both meetings about various projects being planned or already underway, so that efforts could be complemented and duplication avoided.

The 1988 meeting was convened by OIRSA in San Salvador, El Salvador. The 1989 meeting was held in Caracas, Venezuela, and sponsored by the Board of the Cartagena Agreement (JUNTA). During this last meeting the rules and bylaws of the new Inter-American Group for Coordination on Animal Health (GICSA) were approved.

Recommendation No. 6

Ticks and other External Parasites

Several agencies, including FAO, IICA, U.S. Agency for International Development (USAID), and USDA prepared a feasibility study for a project that would help various Caribbean countries plagued by the Amblyomma variegatum tick, dermatophilosis and heartwater. They also promoted efforts to obtain external funding for the project. Meanwhile, IICA continued supporting efforts to eradicate this tick in Dominica and Saint Lucia.

USAID has committed some resources to execute this project in the Caribbean. Some actions have begun in Antigua.

IICA has encouraged the technical exchange among officials in charge of tick control in the countries of the Southern Cone.

Also, IICA has supported the implementation of various tick programs in several countries: Guatemala and Honduras, among others. The Honduras program includes the epidemiological research and control of Dermatobia hominis (grubs).

Recommendation No. 7

Screwworm

Mention should be made of Mexico's achievements in eradicating the screwworm from most of its territory. The Mexican-American Commission in charge of this program has already launched efforts in Guatemala and Belize, as part of the project extending the fight against screwworm through the Central American Isthmus.

Recommendation No. 8

Bluetongue

The countries of Central America and the Caribbean have launched studies on the epidemiology of bluetongue with the collaboration and support of IICA, OIRSA, the USDA's Office of International Cooperation and Development (OICD), the University of Florida and the University of Wisconsin.

The first results from these studies are available.

In the countries of the Southern Cone, criteria have been standardized for interpreting diagnostic tests of this illness. Livestock trade among these countries will benefit.

Recommendation No. 9

Inter-American Compendium of Registered Veterinary Products

IICA, in conjunction with Virginia Polytechnic Institute, published the first part of this Compendium. It lists the organizational and functional structures in the countries for registering veterinary products.

The second part of the Compendium was also published with information on all veterinary products registered in the following countries of the American hemisphere: Bolivia, Brazil, Colombia, Chile, Ecuador, Grenada, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad & Tobago and Uruguay.

A project to prepare a third phase, including biological products, has been discussed.

Recommendation No. 10

Animal Health Plan for the Americas by the Year 2000

- PLASA 2000 -

The countries are now using PLASA 2000 as a tool to guide and direct their actions in the animal health field.

Recommendation No. 11

Inter-American System of Epidemiological Information
and Surveillance in Animal Health

IICA has held various meetings with officials from OIE and PAHO, to coordinate unified actions in the field of information on animal health.

As a result, it has been agreed that IICA will collaborate with the OIE to obtain and disseminate information on animal health from Member States of IICA that are not members of OIE.

IICA and PAHO's Pan-American Center for Foot-and-Mouth Disease (PANAPTOSA) have begun a hemisphere-wide system for epidemiological surveillance of swine pests. This system is continually being revised and adapted to the needs and requirements of the countries. The 1987 and 1988 reports have been published.

In the Caribbean, co-sponsored by the Canadian International Development Agency (CIDA), IICA has begun the implementation of the Caribbean Animal and Plant Health Information Network (CARAPHIN). A similar project for Latin America (RIMSAL) was initiated by IICA with the support of USDA/APHIS. Both projects are aimed to evaluate the economic losses due to pests and diseases in the countries of the Americas.

II. SUBREGIONAL MEETINGS OF COINSA HELD IN 1987

a. RESACENTRAL IV

The Fourth Meeting of Directors of Animal Health of the Central Area was held in Panama City, Panama from April 22 to 24, 1987.

During the meeting, seven recommendations were adopted. The following is a summary of the main actions carried out to implement these recommendations:

Recommendation No. 1

Organizational Development of Animal Health Services

In some countries of the Central Area, animal health directorates are being restructured to improve their services, based on the policy of decentralizing and regionalizing animal health services.

The participation of small farmers in animal health programs is steadily on the rise.

Recommendation No. 2

Follow-Up on the Animal Health Plan for the Americas by the Year 2000

PLASA 2000 is used as a guideline by the countries; a report on compliance with and follow-up on PLASA 2000 will be presented during the COINSA III Meeting.

Recommendation No. 3

Animal Health Laboratory Network for the Central Area

The members of the LABCENTRAL Committee are Dr. Fernando Calderón (Costa Rica), President, and Dr. Celso Peña (Mexico), Vice President; Dr. Jorge Torres (IICA) is the Technical Secretary.

After having evaluated the situation of the Animal Health Laboratory Network for the Central Area, the Technical Committee, through its secretariat and the IICA animal health specialist in Mexico, prepared a schedule for upgrading the Network. The program is geared toward the following activities:

1. Promotion and support for the organization, management and implementation of national animal health laboratory networks.
2. Training and technological exchange to improve the operation of laboratory and epidemiological surveillance services.
3. Revision, preparation and dissemination of manuals on technical-administrative procedures to standardize the operation of diagnostic and epidemiological surveillance laboratories.

As a result of these activities, Mexico has signed a series of agreements with commercial laboratories that produce veterinary biologics, plants, TIF; with small farmer organizations, and with the Secretariat of Agriculture and Water Resources, using special funds earmarked to increase the operational and functional capacity of laboratory facilities and equipment, including the hiring of technical and professional personnel.

In other countries of the Area, national authorities are studying possibilities for securing financial resources in order to support the strengthening of national animal health laboratory networks.

As a result of evaluations made, a data bank has been set up for animal health laboratories in the Central Area.

Recommendation No. 4

Toxic Residues in Meat Exports

In February, 1988, IICA complied with the recommendation concerning the elimination of problems generated by the requirements of meat importing countries resulting from the presence of toxic residues in export meat, by

holding the First Technical Meeting on Residues in Meat, in San Jose, Costa Rica. Professionals from the Food Security and Inspection Services (FSIS) of the United States Department of Agriculture participated, as did observers from Uruguay, the Pan American Health Organization (PAHO), the International Office of Epizootics (OIE) and the International Regional Organization of Agricultural Health (OIRSA).

The eight countries of the Central Area were represented by technical and professional staff.

The Meeting provided information on compliance with the requirements for exporting meat to the United States.

Recommendation No. 5

Information and Evaluation of Losses Due to Diseases and Pests

IICA, through the Animal Health and Plant Protection Program Directorate, is developing a hemispheric project entitled the Latin American Animal Health and Plant Protection Monitoring and Information Network, one of the objectives of which is to determine economic losses caused by animal and plant diseases and pests.

At present, the United States Department of Agriculture (USDA) has assigned a specialist the program coordinator, to IICA.

At the same time, a regional project for an agricultural health information and data monitoring network in the Central Area is being prepared. After the project is analyzed by IICA, it will be submitted to the ministers of agriculture of the Central Area, and external resources will be sought to fund its implementation in the countries of the Area.

Recommendation No. 6

Membership in the International Office of Epizootics (OIE)

IICA sent OIE non-member countries of the Central Area the information needed to become active members of the International Office of Epizootics (OIE).

Nevertheless, to date, the countries have not responded. Renewed efforts must be made for them to join OIE and thus participate in the benefits offered by membership.

Recommendation No. 7

Upgrading International Quarantine and Health Emergency Systems

OIRSA, USDA, PAHO and IICA have provided technical cooperation to countries of the Area, through staff training in the application of emergency plans and evaluation of international quarantine inspection services.

OIRSA is currently implementing a regional project on the prevention of exotic diseases in Central America, Mexico and Panama, which includes upgrading international quarantine and health emergency systems.

FAO is providing resources for an emergency health and quarantine service for the Central Area.

b. RESANTILLAS IV

The Fourth Meeting of Directors of Animal Health of the Caribbean Area was held in Georgetown, Guyana, from April 8 to 10, 1987.

During the Meeting, six recommendations were adopted. The following is a summary of the main actions taken to comply with these recommendations.

Recommendation No. 1

Animal Health Information Systems

The report on the feasibility study to implement an animal health information and monitoring system in the Caribbean was distributed and studied by the governments of the countries.

As a result of the study, the Caribbean Animal and Plant Health Information Network (CARAPHIN) is being implemented, sponsored by IICA and the Canadian International Development Agency (CIDA). One of the aims of this network is to provide training in epidemiology and economics.

The first coordination meeting of CARAPHIN was held in Port of Spain, Trinidad and Tobago, November 17 to 18, 1988.

Recommendation No. 2

Membership in the International Office of Epizootics (OIE)

Haiti became a member of the OIE.

Recommendation No. 3

Animal Health and International Trade Regulations

The Animal Health Code of the OIE is not available to some countries; consultation and use of this Code should be encouraged.

Recommendation No. 4

Inter-American Compendium of Registered Veterinary Products

The Compendium was distributed to the countries of the Caribbean. No country has requested support to implement veterinary product registry and control services.

Recommendation No. 5

Management of the Tropical Bont Tick (*Amblyomma variegatum*) in the Caribbean

Dominica and St. Lucia continue work on their programs to eradicate the A. variegatum; recently, USDA/APHIS provided resources to IICA to support the Dominica project.

The Antigua-USAID-USDA/APHIS pilot project has not yet been implemented.

FAO is providing funds to support the general project in the Caribbean.

Recommendation No. 6

Epidemiology of Blue Tongue

Activities for the epidemiological surveillance of blue tongue continue in Barbados, Jamaica and Trinidad and Tobago, under a project implemented by USDA, OIRSA, the Universities of Florida and Wisconsin, the ministries of agriculture of these countries, and IICA.

c. RESANDINA IV

The Fourth Meeting of Directors of Animal Health in the Andean Area was held in Santa Cruz, Bolivia, May 13 to 15, 1987.

During the meeting, seven recommendations were adopted. The following is a summary of some of the actions carried out in relation to these recommendations.

Recommendation No. 1

Compliance with Health Requirements for Animal Imports

Health legislation of the countries is considered to be adequate; greater health control for imported animals is being sought.

Some quarantine substations are underused.

Recommendation No. 2

Follow-Up on the Animal Health Plan for the Americas by the Year 2000

During the workshops to strengthen laboratory networks, held in 1989 and sponsored by JUNTA and IICA, an in-depth study was made of animal health programs and actions to be undertaken in the future.

PLASA 2000 was used as an instrument in many of the discussions.

Recommendation No. 3

Operation of Bilateral Border Agreements in Animal Health

During 1988 and 1989, border meetings were held, especially in regard to the control of foot and mouth disease; PAHO, JUNTA and IICA continued to support and promote the operation of these mechanisms.

Recommendation No. 4

Support to Externally Funded Investment Projects on Animal Health

A subregional project entitled "Andean Program for Cooperation, Training and Technology Exchange for Animal Health and Epidemiological Surveillance Laboratories" was prepared with a view to upgrading the laboratories. It was approved by the vice ministers of agriculture sitting on the Agricultural Commission of the Cartagena Agreement.

IICA is also providing support to each of the countries of the Andean Area in preparing their national projects to upgrade their laboratory networks and services.

Recommendation No. 5

Hemispheric Surveillance System for Hog Pests

The countries of the Andean Area continue to participate in the system, with the exception of Ecuador which, as of July 1988, decided to temporarily discontinue its participation until improvements are made in its internal information system.

Recommendation No. 6

Inter-American Compendium of Registered Veterinary Products

All of the countries, with the exception of Venezuela, provided information on the pharmaceutical products registered in their country. This information was included in the Compendium, which has already been distributed to the countries.

Recommendation No. 7

Recommendations of LABANDINA III

Over the past two years, IICA has provided support to the countries in regard to the six recommendations that came out of the Meeting of Laboratory Directors, held concurrently with RESANDINA IV.

An animal health specialist for the Andean Area began work at the official headquarters in Quito, Ecuador, as of March 1988.

Much work has been done to evaluate the laboratories, upgrade national networks, provide staff training, foster technological exchange, and prepare project proposals for external funding.

d. REDSUR IV

The Fourth Meeting of the Directors of Animal Health of the Southern Area was held in Montevideo, Uruguay, June 24 to 26, 1987.

During the meeting, ten recommendations were adopted. The following is a summary of some of the actions undertaken to comply with the recommendations:

Recommendation No. 1

Support to Hydatitosis Programs

Affected countries continued their programs to control this disease.

Recommendation No. 2

Exotic and Emergency Diseases

INTA, with support from IICA and USDA/APHIS and the participation of SENASA (Argentina), organized three subregional courses on exotic diseases. Professionals from the Southern Area participated in the courses.

A project to upgrade emergency and quarantine systems for the Southern Area was prepared. It includes laboratory and field actions, as well as mechanisms to secure funds and resources for emergencies.

Argentina, Brazil and Chile have established emergency committees.

Recommendation No. 3

The Relationship Between the Trade of Animals and Animal Products and Health Restrictions

OIE standards are used as a reference in adopting regulatory provisions for the exchange of genetic materials.

INTA-Argentina has conducted research on the transmissibility of infectious agents in genetic materials.

Recommendation No. 4

Institutional Strengthening

Argentina, Brazil, Chile, Paraguay and Uruguay are at different stages (preparation, analysis, implementation) of external funding projects for strengthening their health institutions.

IICA is promoting two subregional projects: one on quarantine and emergencies, and another on the evaluation of losses due to diseases and pests. Both projects are geared to strengthening national institutions in specific fields.

Recommendation No. 5

Information and Epidemiological Systems

IICA is currently preparing a project to evaluate losses due to diseases and pests, which includes strengthening animal health information analysis and gathering systems.

All the countries of the Southern Area participate in the hemispheric swine fevers surveillance system.

Recommendation No. 6

Inter-American Compendium of Registered Veterinary Products

Information from Brazil, Chile, Paraguay and Uruguay was included in the second stage of the Compendium on pharmaceutical products.

This stage of the Compendium has already been published and distributed to the countries.

Recommendation No. 7

Horizontal Cooperation in Animal Health

The subregional evaluation project on losses includes, as a basic strategy, horizontal technical cooperation among the countries of the Southern Area.

Recommendation No. 8

Programs for Reproduction Control and Health Management in Herds

The last publication in the series on animal reproduction was published and distributed through the IICA Office in Uruguay.

Recommendation No. 9

Integration of Veterinary Services and Veterinary Education Programs

All projects in preparation or under way in the five countries of the Southern Area include the training of professional personnel.

Notable progress has been made in establishing relations and coordination among official animal health services, research institutions and universities.

Recommendation No. 10

Situation of the IICA Animal Health Project for Paraguay and Uruguay

As a result of changes in the staffing structure of IICA's Animal Health and Plant Protection Program, it was not possible to assign specialists to these two countries; therefore, the specialist headquartered in Argentina will take charge.

III. SUMMARY OF THE MAIN ACTIONS CARRIED OUT BY IICA IN ANIMAL HEALTH

a. Multinational projects and activities.

In 1987, a project was implemented to strengthen animal health laboratory services and epidemiological surveillance in the countries of the Central, Andean and Southern Areas.

Through this project, the Inter-American Network of Animal Health Laboratories (RILSA) was established. The Network is a mechanism that promotes technological exchange to strengthen the operation of animal health laboratories in Latin America and the Caribbean.

The basic goal of this project is to strengthen the organizational structure of laboratory services in order to respond to users' demands.

In 1988, in the Caribbean Area, the Caribbean Animal and Plant Health Information Network (CARAPHIN) began operations as part of a project partially funded by the Canadian International Development Agency (CIDA).

A similar project, the Latin American Animal and Plant Health Monitoring and Information Network (RIMSAL) was also implemented in 1988, with the support of USDA/APHIS.

The aim of both projects is to establish national epidemiological-economic information and monitoring units, through which the main diseases and pests affecting livestock production and productivity can be identified, and an evaluation can be made of the economic impact of the same.

The Hemispheric Swine Fevers Surveillance System was initiated in October 1987, and receives valuable support from the Pan American Foot and Mouth Disease Center; the system has been in full operation for two years and has provided important information on the distribution and incidence of classic swine fever, information which is essential for programs working to control that disease.

Also at the hemispheric level, work continued on the preparation of the Inter-American Compendium of Registered Veterinary Products. The second phase, on pharmaceutical products, containing information provided by 10 countries of the Americas, has already been published and distributed.

It should be noted that an emergency animal and plant health fund has been set up within IICA. Although it is a modest fund, it can help the countries take the first steps necessary to control any exotic disease or pest that might appear; regulations regarding the use of this fund have already been distributed to the countries.

b. Projects and activities at the country level

Support continued to be provided through specific projects in the field of animal health in the following countries, among others: Argentina,

Brazil, Chile, Dominica, Guatemala, Haiti, Honduras, Mexico and Venezuela. In Guyana, a new project was implemented with the assignment of a new animal health specialist to that country.

Funding for these projects has come from IICA, the countries and several funding agencies.

Support was provided to several other countries for specific actions, especially those related to the preparation of projects aimed at securing external resources; in addition, support was provided for various activities resulting from multinational projects under way.

In regard to more specific fields, support continued to be provided for carrying out epidemiological studies on blue tongue in the Caribbean, for actions to control the tropical bont tick Amblyoma variegatum in the Caribbean, to standardize criteria for detection of residues in meat exports in the Central Area and several other activities in different fields.

When implementing these actions, IICA respects activities carried out by other international institutions with which it seeks to establish joint cooperation agreements, striving to complement and support the development of actions by other agencies.

The Inter-American Group for Coordination in Animal Health (GICSA), in which IICA participates actively, has proven to be an efficient instrument for regulating and promoting inter-agency cooperation.

The Plan of Joint Action for Agricultural Reactivation in Latin America and the Caribbean, promoted by IICA at the request of the ministers of agriculture of the hemisphere, contains several projects and actions to be developed in the field of animal health; the implementation of these activities, subject to the obtaining of resources for their funding, will be extremely valuable in raising the level of agriculture and the standard of living of the rural population.

**PROGRESS REPORT IN COMPLYING WITH THE GOALS OF THE
ANIMAL HEALTH PLAN FOR THE AMERICAS BY THE YEAR 2000**

Rolando Alvarenga*

The Animal Health Plan for the Americas by the Year 2000 (PLASA 2000) was approved by the Inter-American Commission on Animal Health during its Second Meeting, held in Brasilia, D. F., Brazil, from April 29 to May 1, 1985.

This document provides comments on some of the actions undertaken in the countries over the past four years, in follow-up on or compliance with the goals established in the Plan.

The information was compiled from a survey of animal health specialists and other IICA specialists in the following countries: Argentina, Brazil, Colombia, Costa Rica, Ecuador, Honduras, Mexico, Peru, Saint Lucia, Trinidad and Tobago, and Venezuela.

A first and partial evaluation of compliance with the goals planned for the 1986-1990 period will be conducted at the end of that five-year period.

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<p style="text-align: center;">GOALS</p>	<p style="text-align: center;">ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS</p>
<p><u>1. Administration of Animal Health Services</u></p> <p>a. Evaluation of the administrative organizational structures of the official animal health services in each of the countries of the hemisphere showing both the internal organizational structure and the interrelational agencies and institutions.</p>	<p>No formal study has been conducted of the structure of veterinary services throughout the hemisphere. The organization of said services in some countries, such as Bolivia, Nicaragua and Mexico, is currently being reviewed.</p>
<p>b. Location of the Office of the Director or the Head of the Official Animal Health Services under the Ministries of Agriculture of each country at least a third decision-making level so that the person in charge of the services may have direct access to the second level, Deputy Minister or Assistant Secretary, and to the first level, Minister or Secretary.</p>	<p>In most countries of Latin America the Head of veterinary services is located at the fourth level: Minister, Vice-Minister, Office of the Director of Livestock, Directorate of Animal Health. In some countries of the Southern Area, these services are already located at the third level; in the Caribbean, most of them at the fourth level.</p>
<p>c. Structuring of the Animal Health Services of each country so that they have at least at the central level the following units and depending of the capabilities of each country extensions that correspond to the peripheral levels to cover minimal needs:</p> <ul style="list-style-type: none">. Planning and Evaluation. Epidemiology. Statistics and zoosanitary information. Social communication. Control of internal mobilization of animals and their products. Zoosanitary inspection of international quarantine	<p>Most of the countries of Latin America have these services, with the exception of meat inspection, milk inspection and social communication, which come under other offices. The services concerning the registry and control of veterinary products are being implemented or reorganized in some countries.</p> <p>Some of the Caribbean countries have only one veterinarian who carries out these duties; the larger countries have several of these units.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<ul style="list-style-type: none"> . Registry and control of biological, pharmaceutical and food products for use in animals . Laboratory diagnostic and reference services . Sanitary inspection of meats and milks . Programs to combat priority sanitary problems 	
<p>d. Implementation in the countries of the hemisphere of systems accrediting the private veterinary doctors to enable them, through proper control and supervision, to cover official activities of sanitary certification and other activities pertinent to animal health programs.</p>	<p>Private veterinarians in most of the Latin American countries are being accredited to carry out official activities in the area of animal health.</p> <p>This practice is taking place in the Caribbean in Barbados, Jamaica and Trinidad and Tobago.</p>
<p>2. <u>Information and Epidemiological Surveillance</u></p> <p>a. Development of a model of information on animal diseases in each country that may be used indistinctly by various countries independently of the development of their sanitary infrastructure.</p>	<p>A uniform information model already exists for vesicular diseases and classic swine fever.</p> <p>A standard model has not yet been developed for the rest of the diseases.</p>
<p>b. On the basis of the foregoing model, adapted to their specific needs, implementation in each of the countries of the region of a single system of information on animal diseases.</p>	<p>Each country has its own system for collecting and processing information.</p> <p>These national systems have not yet been standardized with a view to establishing certain uniformity among the countries.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>c. Implementation of a unified system of information on animal diseases at the hemispheric level to which all of the countries of the hemisphere and the international technical cooperation agencies involved in animal health at the regional and subregional levels would contribute.</p>	<p>The countries of the Americas participate in the OIE-FAO-WHO information system. In addition, they participate in the PANAF-TOSA information system on vesicular diseases and the IICA-PANAF-TOSA system on swine diseases.</p>
<p>d. Development of studies on morbidity-mortality losses from 30 diseases diagnosed most frequently in the country to determine the feasibility of launching programs for control and/or eradication.</p>	<p>IICA has begun projects in the Caribbean (CARAPHIN) and in Latin America (RIMSAL) to initiate studies on losses caused by pests and diseases.</p>
<p>3. <u>Laboratory Diagnostic Services in Animal Health</u></p> <p>a. Implementation in each of the countries of the hemisphere of at least one diagnostic laboratory in animal health that may be considered as providing complete services in the areas of pathology, bacteriology, serology, parasitology, virology, and toxicology, with the necessary equipment, material and reagents as well as trained professional staff to cover those areas.</p>	<p>All the countries of Latin America have a laboratory providing complete services, although in some countries these services are not operating at full capacity.</p> <p>In the Caribbean, at least three countries have complete laboratory services: the rest of the countries have laboratories providing services that can attend minimum veterinary service needs.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>b. Establishment of Reference Diagnostic Laboratories for specific areas, using those units in Latin America and the Caribbean that have excelled or progressed more effectively in them, and obtaining external financing for their proper development.</p>	<p>The countries of the Americas use the PANAFITSA, CEPANZO, Plum Island Animal Disease Center and the Vesicular Diseases Diagnostic Laboratory in Panama as reference laboratories. FAO is currently establishing 3 reference laboratories for viral swine diseases, hemoparasites and neonatal diarrhea. IICA, through RILSA, is identifying national laboratory that can carry out reference work. The laboratory in Barbados has been used as a reference lab for bluetongue and Costa Rica serves as a reference for bluetongue.</p>
<p>c. Building and development of laboratory animals' facilities to cover the needs in the field.</p>	<p>Almost all Latin American countries have laboratory animals' facilities; in the Caribbean they exist in Barbados, Guyana, Jamaica and Trinidad.</p> <p>Some countries, such as Argentina, Costa Rica, Chile and Guatemala are undertaking actions to construct and upgrade laboratory animals' facilities.</p>
<p>d. Implementation of the Inter-American Network of Animal Health Diagnostic Laboratories, with Sub-regional Committees to cover more reduced geographic areas, the purpose of which would be to effect technological exchange and reference support to optimize laboratory diagnosis at the hemispheric level.</p>	<p>The Inter-American Network of Animal Health Laboratories was established in August 1988.</p> <p>Exchanges at the sub-regional level have continued in IICA's four geographic areas (Central, Caribbean, Andean and Southern).</p> <p>Currently, projects are being drafted to seek external funding to boost and increase technological exchange among the laboratories of the four areas.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>4. <u>Control of Internal Mobilization of Animals and their Products</u></p> <p>a. Evaluation of the various systems in use in the countries for control of internal mobilization of animals and their products, including legislative, documentary processing, infrastructure and animal identification aspects, with recommendations on the most appropriate and advanced aspects in those fields.</p>	<p>No studies have been conducted at the hemispheric level on the control systems in effect in each of the countries. Some countries, like Argentina, Brazil, Chile and Uruguay are currently revising their internal control procedures.</p>
<p>b. Implementation in each country of a single system for the control of the mobilization of animals and their products, adapted to the conditions of each country in particular, including the use of a single document for the sanitary authorization of internal mobilization of animals and their products as well as the quarantine stations and necessary supervisory posts, in accordance with the sanitary programs under way in the different areas in each country.</p>	<p>All the countries of Latin America and the Caribbean have legislation governing the internal mobilization of animals; internal quarantine control points will be established in accordance with sanitary programs in effect. Ecuador is developing a pilot project which envisages a single control system on the mobilization of animals.</p>
<p>c. Research and extension of new methods for animal identification.</p>	<p>The Livestock Conservation Institute of the United States held an international symposium on identification in December 1988. IICA will distribute the results of the symposium.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>5. <u>Import and Export Inspection of Animals and their Products</u></p> <p>a. Evaluation of the various systems in use in the countries of the hemisphere for quarantine inspection of importation and exportation of animals and their products, including the facilities in each country, equipment and staff.</p>	<p>With the support of the different organizations that cooperate in this field, such as FAO, PAHO, IICA, JUNTA and OIRSA, most of the countries have conducted an evaluation of their zoo-sanitary inspection services for importation.</p>
<p>b. Establishment in each country of the hemisphere of a definite system for quarantine inspection for the importation and exportation of animals and their products, with establishment at all international airports, maritime ports and harbors and borders of the necessary minimum infrastructure for the facilities, equipment and staff to carry out the effective work of animal health quarantine inspection.</p>	<p>The legislation of all the countries is adequate; frequent rotation of personnel makes it necessary to have ongoing training programs.</p> <p>In general it can be said that infrastructure and equipment has improved notably over the past few years; a number of organizations have cooperated to this end.</p> <p>Several quarantine stations for animals, built in different countries, are not in operation.</p>
<p>c. Research on the transmission of infectious agents through semen, embryos and other animal products.</p>	<p>INTA in Argentina, PANAFIOSA and the Plum Island Animal Disease Center, among others, have carried out work in this area.</p> <p>Important information is already available on this subject.</p> <p>OIRSA and the University of Wisconsin conducted a workshop in 1989 on the exchange of genetic livestock resources, where the latest information and advances in this health topic were presented.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>6. <u>Emergency Systems for Prevention, Control and Eradication of Exotic Diseases</u></p> <p>a. Evaluation in each of the countries of the hemisphere of those diseases that must be considered as being exotic for each country and for which systems or mechanisms for immediate control and eradication must be established where the presence of those diseases has been confirmed.</p> <p>b. Establishment in each country of an emergency system for the prevention, control and eradication of exotic animal diseases. This would include:</p> <ul style="list-style-type: none"> • Epizootiological surveillance mechanisms to detect any suspicious case. • Laboratory diagnosis in the country or established mechanisms to direct samples to a laboratory of international reference. • Mechanisms established for the use of available civilian and military resources for the emergency control of the problem area. • Mechanisms established for the use of emergency economic resources to initiate the work of wiping out the problem disease. 	<p>The countries of the American hemisphere have identified the diseases that do not exist in their respective territories and which can be classified as exotic; the diseases on the OIE's lists A and B were used as a reference.</p> <p>Emergency systems against exotic diseases have been in place in Canada, the United States and Mexico for a number of years. The countries of Central America and Panama, with support from OIRSA, USDA/APHIS, IICA, PAHO and other organizations, have trained staff to establish emergency groups. Likewise in Haiti and the Dominican Republic.</p> <p>In the Caribbean, with the support of the PAHO and IICA, staff have received training for emergencies.</p> <p>A FAO/JUNTA project was developed in the Andean Area to upgrade institutions in their capabilities to prevent African Swine Fever.</p> <p>In the Southern Area, with support from IICA and USDA/APHIS, staff have received training, and the organization of emergency animal health systems has been encouraged.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p><u>7. Production of Biological Products for Diagnosis and Prevention in Animal Health</u></p> <p>a. Evaluation on current biological veterinary production and the estimated needs of the countries for prevention and diagnostic purposes and to allow for proper programming as regards supply and distribution in each country and to cover the needs of those countries that do not have the necessary local biological production.</p>	<p>Through RILSA, laboratories which produce veterinary biologics have been identified.</p> <p>The evaluation of the current production of these biologics and the countries' needs in this area has not been completed.</p> <p>The countries of the Caribbean import their products from Canada, the United States and the United Kingdom, primarily.</p>
<p>b. Identification and strengthening, through external resources, of those laboratories engaged in veterinary biological production that may be converted into suppliers of countries needing those types of products and that do not produce them locally.</p>	<p>IICA, PAHO and FAO are working to upgrade the laboratories in certain countries that could become the suppliers of biologics to third countries. IICA is preparing a catalog of services and areas of support, including biologics that can be offered by the countries.</p>
<p><u>8. Control of Biological, Pharmaceutical and Food Products for Use in Animals</u></p> <p>a. Evaluation on the systems in use in the countries of the hemisphere for the registry and control of biological, pharmaceutical and food products for use in animals including the existing infrastructure in each country and the list of authorized products.</p>	<p>In January 1986, IICA published the study on the structure of the services for the registry and control of veterinary products in 26 countries of the Americas. A revised and updated version of this study is ready to be published in the Inter-American Compendium of Registered Veterinary Products.</p>

GOALS

ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS

b. Implementation in each of the countries of the hemisphere of a system for the registry, inspection and control of biological, pharmaceutical and food products for use in animals and establishing a minimum necessary infrastructure.

As a result of the study conducted by IICA, some countries of Latin America and the Caribbean have begun to establish and strengthen their system for the registry of veterinary products.

c. To conduct quality control tests for registry of all biological and pharmaceutical products for use in animals in each country of the hemisphere and request origin certificates for imported products.

This practice has not been established in the countries, except in those with extensive infrastructure. All countries that import veterinary products require certification from the country of origin.

d. Establishment in the countries of cold conservation systems for the distribution and trading of the products.

In general, the distribution of biologics is made by pharmacies and private companies. Only some countries sample biologics that are already available for direct purchase.

e. Establishment of control mechanisms for using of products.

The legislation in some countries of Latin America and the Caribbean provide for control mechanisms for product use. In practice, no control is exercised.

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>9. <u>Food Protection</u></p> <p>a. Survey of meat, poultry and fish inspection and hygiene in each country, both when meat is for domestic consumption and when it is for export. Such a status report should include at least the following for each facility:</p> <ul style="list-style-type: none"> . Conditions of infrastructure and equipment for processing, storage, industrialization and distribution. . Professional, technical and auxiliary personnel. . Health and hygiene procedures. . Slaughter by species and byproducts. <p>b. Preparation on the basis of the preceding survey of strategies and projects for each country to locate slaughterhouses and meat packing and refrigeration plants in the areas where animals are raised, to avoid unnecessary transportation of live animals over large distances, and in order to improve health and hygiene systems for meat and meat byproducts.</p> <p>c. Establishment in each country of an official meat, poultry and fish inspection system, in charge of trained Veterinarians, in order to assure the healthy status of the products for human consumption and for obtaining the necessary information for animal health.</p>	<p>In the Southern countries, the Plate Basin Veterinary Meat Inspection Commission (CINVECC) has been established. CEPANZO provides the secretariat and technical assistance. It provides ongoing evaluation of the services and infrastructure in each country.</p> <p>Meat-exporting countries evaluate their establishments periodically.</p> <p>In general, sanitary control of meat destined for domestic consumption is very weak in most of the countries.</p>
<p>b. Preparation on the basis of the preceding survey of strategies and projects for each country to locate slaughterhouses and meat packing and refrigeration plants in the areas where animals are raised, to avoid unnecessary transportation of live animals over large distances, and in order to improve health and hygiene systems for meat and meat byproducts.</p>	<p>In the Caribbean, the slaughterhouse in Barbados is being rehabilitated, and plans are under way in St. Vincent, St. Lucia, Dominica and Antigua to build new slaughterhouses.</p> <p>Several Latin American countries have plans to improve their slaughterhouse infrastructure.</p>
<p>c. Establishment in each country of an official meat, poultry and fish inspection system, in charge of trained Veterinarians, in order to assure the healthy status of the products for human consumption and for obtaining the necessary information for animal health.</p>	<p>Costa Rica has established a seafood inspection system managed by veterinarians.</p> <p>In most of the countries, these services come under the ministries of health and the municipalities.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>d. Evaluation in each country of hygiene systems for milk and milk products.</p>	<p>This activity comes under the responsibility of public health services in most countries. It is not known whether a formal evaluation has been made in each country. PAHO provides support to food protection programs in the countries.</p>
<p>e. Establishment and/or strengthening in each country of an official system for milk and milk products hygiene.</p>	<p>In general, all the countries conduct hygiene control for milk and dairy products. The hygiene measures used vary from country to country, and from region to region.</p>
<p><u>10. Research on Animal Health</u></p> <p>a. Preparation of a catalogue of all the institutions involved in animal health research in the countries of the hemisphere with a list of projects under way.</p>	<p>FAO has identified the research institutions involved with the three networks it sponsors. RILSA has identified some research institutions. No catalogue has been made of all the institutions and the research they are involved in.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>b. Biannual updating of the catalogue of institutions involved in research on animal health with a list of projects under way.</p>	<p>Has not been done.</p>
<p>c. Exchange of information on the findings of the research projects not only among research institutes in the countries of the hemisphere but also from the research institutes and universities to the official animal health services in the various countries and appropriate livestock industry.</p>	<p>FAO promotes exchanges through its three research networks. RILSA, through its Bulletin, is beginning to encourage exchange actions.</p>
<p>d. Quarterly publication of summaries on research on animal health conducted in all of the countries of the hemisphere and wide distribution of that publication to all the sectors concerned.</p>	<p>Has not been done at the hemispheric level. Each national institution publishes the results of its research.</p>
<p>e. Identification of the main problems in each country which require research and evaluation of the current research projects.</p>	<p>There is a marked tendency in the countries to identify and research the animal health problems causing greatest impact; examples are CAE in the Caribbean and Central America, Botulism in Brazil, and many others.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>f. Establishment of coordination mechanisms between the official research institutions and official veterinary services.</p>	<p>RILSA is encouraging the formation of coordinating committees for the purpose of strengthening laboratory services in which research institutions are invited to participate.</p>
<p>g. Development of laboratory and field techniques for fast diagnosis of animal diseases using the most advanced technological resources.</p>	<p>LIDIVET of Bolivia is making use of laboratory and field techniques for rapid diagnosis. INTA of Argentina and the Miguel C. Rubino of Uruguay have prepared a project with the U. of Montreal to develop rapid diagnostic techniques. IICA, FAO and PAHO have developed diagnostic courses on immunization and other techniques.</p>
<p>h. Development of vaccines for animal diseases prevention using the most advanced technology available for reducing costs and increasing effectiveness.</p>	<p>A project prepared by INTA in Argentina and Uruguay and the U. of Montreal includes the development of a vaccine for viral neonatal diarrheas. Work is being carried out in Chile to develop an anti-Brucellosis vaccine and in Paraguay to develop an anti-Newcastle vaccine. A vaccine for Aujeszky Disease is already in use in the United States.</p>

<p>ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS</p>	<p>GOALS</p>
<p>The Board of the Cartagena Agreement has updated legislative information for the Andean Area countries.</p> <p>PAHO has updated legislative information in the countries of the Americas through 1980.</p> <p>IICA is presently undertaking a study of sanitary-livestock information related to the importation and exportation of animals and agricultural products.</p>	<p><u>11. Legislation on Animal Health</u></p> <p>a. Updating of the catalogue of information on sanitary-livestock legislation in the countries of the hemisphere with the number and date of issue, tittle and summary of contents.</p>
<p>Both Mexico and Brazil are carrying out analyses of their respective sanitary-livestock legislation.</p> <p>Changes to sanitary-livestock laws and regulations are being studied in Honduras.</p>	<p>b. Study of sanitary-livestock legislation in each country to take the necessary action to eliminate legislation that is obsolete or not in effect and to update it on the basis of the actual needs of each country.</p>
<p>The countries are following the recommendations of the International Zoosanitary Code of the OIE.</p>	<p>c. Follow up of the International Zoosanitary code of OIE to harmonize and consolidating the use of official sanitary documentation for importation and exportation.</p>

<p style="text-align: center;">GOALS</p>	<p style="text-align: center;">ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS</p>
<p>d. Implementation and updating of border agreements between neighboring countries for purposes of animal health and when it is deemed advisable, request to the international organizations that are more involved in animal health to serve as a Secretariat for those border agreements.</p>	<p>Implementation of border agreements for purposes of animal health has been encouraged and continued in the majority of Latin American countries with the support of PAHO/PANAFTOSA, IICA and OIRSA. Canada, the United States and Mexico meet regularly.</p>
<p>e. Incorporation of all countries of the American hemisphere to the International Office of Epizooties -OIE--.</p>	<p>Haiti recently became a member of the OIE; thus, 16 countries of the American hemisphere are members of this Organization.</p>
<p>12. <u>Participation of the Sector of Livestock Producers and Related Industries in the Animal Health Programs</u></p> <p>a. Establishment in all animal health services in the countries of the hemisphere of departments or offices devoted exclusively to activities concerning public information and the media in the animal health area to establish a constant link between the official sector and the sectorial producers and also with the related industrial sector.</p>	<p>A survey carried out by IICA en 1985 indicated that 7 countries have public information service offices concerned with animal health; the others receive some support from similar offices of the Ministries of Agriculture. Only Guatemala has strengthened its public information service in animal health.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>b. Strengthening of all public information offices and departments, dealing with animal health, in the countries of the hemisphere with specialized professional staff as well as equipment and material needed so that communication will produce an effective impact on animal health.</p>	<p>Some countries are reinforcing their communication infrastructure in animal health. Chile, Uruguay, Paraguay and Brazil have specialized professional personnel. Ecuador will include this area in its El Carmen pilot project. Honduras will reinforce this area in its PROGASA/IDB Project.</p>
<p>c. Organization in each country of the hemisphere of Animal Health Councils or Committees made up of government authorities and leaders of livestock producers to discuss animal health programs and projects in each country.</p>	<p>Committees or Councils are being formed in the majority of the countries to give support to laboratories and other animal health programs. Emphasis is being given to supporting programs in South America.</p>
<p>d. Invitation to the directors of the associations of livestock producers and related industries to national and international meetings to discuss animal health aspects that involve the participation of those sectors.</p>	<p>The meeting of RIMSA, COSALFA and the Hemispheric Committee for the Eradication of Foot-and-Mouth Disease, sponsored by PAHO, have experienced the increasing participation of groups of cattlemen. Representatives of cattlemen's associations were invited to the meeting of COINSA III.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p><u>13. Veterinary Education</u></p> <p>a. Evaluation of the operations of the Veterinary Medicine schools in each of the countries of Latin America and the Caribbean including, where pertinent, specific recommendations for improved operations and outreach.</p>	<p>No such evaluation has been carried out on a hemispheric level.</p> <p>Some countries of the Southern and Andean Areas have conducted internal evaluations of these institutions.</p>
<p>b. Preparation of careful, indepth studies, before opening a new Veterinary Medicine School in any country of the region. Such studies should include:</p> <ul style="list-style-type: none"> . Regional frame of reference. . Studies of supply and demand for outlining the formation of Veterinarians. . Delimitation of the area of influence. . Availability of similar education. . Analysis of the curriculum. . Analysis of potential faculty. . Analysis of the infrastructure and equipment. . Budget and financing. 	<p>A detailed feasibility study was carried out in relation to the opening of a Veterinary School in Trinidad.</p> <p>New Veterinary Schools have opened in Mexico without complete feasibility studies.</p>
<p>c. Review of the programs of study of each of the Veterinary Medicine schools in the region, to adapt them to the true needs of each country.</p>	<p>The curricula of the Veterinary Schools in Argentina, Chile, Paraguay and Uruguay have been periodically reviewed.</p> <p>There are associations or commissions having representatives of the Veterinary Schools in Argentina, Chile, Peru and Ecuador which are responsible for planning and evaluating the curricula of these institutions.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>d. Collection, publication and distribution of data on post-graduate courses offered by the Veterinary Medicine Schools of the countries of the region.</p>	<p>No institution has done this on a regional scale. Each Veterinary School publishes and distributes information about their respective course offerings. IICA and PAHO help publicize this information.</p>
<p>e. Updating and bi-annual publication of the preceding information.</p>	<p>No such publication has been issued.</p>
<p>f. Study of the ability of Veterinary Medicine Schools and government and private institutions in the hemisphere to implement regional or subregional centers for postgraduate training in the area of animal health.</p>	<p>The University of Zulia in Maracaibo, Venezuela, is proposing to upgrade its four-month animal health course to a master's level course. The Veterinary School of Minas Gerais, Brazil, has proposed a similar upgrading.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>g. On the basis of the preceding study, to set up regional centers for postgraduate training and continuous education in animal health, for at least the following areas:</p> <ul style="list-style-type: none"> • Animal Health Planning • Animal Health Administration • Epidemiology • Animal Health Information and Statistics • Mass Communications • International Quarantine • Prevention, Control and Eradication of Exotic Diseases • Veterinary and Economics • Laboratory diagnosis <ul style="list-style-type: none"> - Bacteriology - Virology - Parasitology - Micrology - Bromatology • Deficiency-Induced diseases • Production of biologicals <ul style="list-style-type: none"> - Vaccines - Antigens for diagnostic purposes • Quality control of drugs 	<p>At the national level the animal health services of the countries are using the infrastructure of the Veterinary Schools to provide advanced training for their professionals.</p> <p>CEPANZO and PANAFOTOSA have been actively working on the development of courses and ongoing training in animal health.</p> <p>THE PROASA project of PAHO, conducted from 1983 to 1987, provided training for a significant number of professionals in animal health.</p> <p>IICA's CARAPHIN project will provide ongoing training in Epidemiology for the Caribbean countries.</p>
<p>14. <u>Training of Middle-level Technicians</u></p> <p>a. Identification in each country of the region of the need for train-middle-level technicians and auxiliary personnel in the area of animal health, and analysis of the capacity of government animal health programs to absorb such personnel.</p>	<p>The evaluation has not been carried out.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>b. To develop, on the basis of each country's needs, training courses for middle-level technicians and assistants, using the existing infrastructure in each country and to direct such courses to specific areas of felt needs.</p>	<p>The REPAHA Center, established in Guyana, has provided training for animal health technicians for the Caribbean countries.</p> <p>Every country in Latin America has schools for agricultural technicians.</p>
<p>c. To have all animal health programs and projects include a component of training middle-level technicians and auxiliaries.</p>	<p>In general, animal health services offer training courses for the field and laboratory technicians that join their institutions.</p>
<p>d. Preparation and/or updating of training manuals for middle-level technicians and assistants in the following areas: laboratory diagnosis, quarantine, inspection, epizootic surveillance, mass communications and other areas of specific interest to the countries. These manuals may be used as a guide for national training courses.</p>	<p>All international technical cooperation agencies working in the field of animal health have drawn up and distributed training manuals for technicians in the countries.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>15. <u>Coordination of International Technical Cooperation in the Area of Animal Health</u></p> <p>a. Formalization of annual meetings of the international technical cooperation agencies operating in the hemisphere in the area of animal health, attended by representatives of countries and agencies that finance projects and activities in this field. The purpose is to achieve optimum coordination and avoid duplication of efforts, while ensuring the best possible utilization of available resources.</p>	<p>Technical cooperation agencies working in the Americas in animal health (FAO, PAHO, IICA, OIE, JUNTA, OIRSA) have established the Inter-American Group for Coordination in Animal Health (GICSA), which has been meeting regularly every year, since 1984.</p>
<p>b. That the Advisory Committee on the Coordination of International Technical Cooperation of COINSA conduct a review every two years of the reports of the coordination meetings of the international technical cooperation agencies in the area of animal health, and submit recommendations on fostering such coordination.</p>	<p>The reports of the Fifth and Sixth GICSA meetings, held in San Salvador, El Salvador and Caracas, Venezuela, respectively, will be presented to the Third COINSA Meeting.</p>
<p>c. Hemisphere-wide, subregional or country-level meetings at which similar animal health topics will be discussed, or that will be attended by people of the same or similar rank and speciality, and that are organized by international technical cooperation agencies in the field of animal health in the hemisphere should be held as joint meetings.</p>	<p>Several meetings were held, jointly sponsored by various organizations.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>16. <u>Prevention, Control and Eradication of Diseases of List "A" of the International Office of Epizooties -OIE-</u></p> <p>a. To keep free the American hemisphere countries of the following diseases of List "A" of OIE which are not present in any American country:</p> <ul style="list-style-type: none"> . Swine Vesicular disease . Rinderpest . Peste des petits ruminants . Contagious bovine pleuropneumonia . Lumpy skin disease . Rift Valley Fever . Sheep pox . African horse sickness . African swine fever . Teschen disease . Fowl plague 	<p>The countries of the Americas are still free of these diseases.</p>
<p>b. To keep free of Foot and Mouth Disease and Vesicular Stomatitis the American hemisphere countries which are free of that disease.</p>	<p>Chile was once again declared free of Foot-and-Mouth Disease in 1988.</p> <p>Nine countries in South America are still infected with Foot-and-Mouth Disease.</p>
<p>c. Eradication of Foot and Mouth Disease in South America maintaining the areas free of the disease.</p>	<p>A hemisphere-wide program exists to eradicate Foot-and-Mouth Disease by the year 2000. It is sponsored by PANAFIOSA/PAHO, and the South American countries participate actively in it.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>d. Execution of deep epidemiological studies on Vesicular Stomatitis to determine the most adequate measures to control that disease.</p>	<p>ORISA and USDA/APHIS are conducting studies on this disease. Studies are being carried out in Mexico by UNAM in the area of Matias Romero, Oaxaca.</p>
<p>e. Execution of epidemiological studies at hemisphere level to determine the real prevalence of Bluetongue in order to determine the policies regarding the disease.</p>	<p>Studies on bluetongue are being conducted in the Caribbean and in Central America.</p>
<p>f. Eradication of Hog Cholera from the hemisphere and maintenance of disease free areas.</p>	<p>A proposal is presently under study for eradicating hog cholera in Central America and Mexico. Several South America countries have begun formal control programs. Chile is conducting a hog cholera eradication program. An epidemiological surveillance plan exists in Jamaica.</p>
<p>g. Immediate control of any Newcastle Disease outbreak of any type in American countries.</p>	<p>The countries conduct control programs.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>17. <u>Prevention, Control and Eradication of Diseases of List "B" of the International Office of Epizooties -OIE- and others of economical importance in the American hemisphere</u></p> <p>a. Preservation of free status of the hemisphere countries of those diseases of List "B" of OIE which are not currently present.</p>	<p>The countries of Latin America and the Caribbean are upgrading their laboratory and epidemiological surveillance services.</p> <p>These services are essential for identifying more accurately the prevalence and distribution of List "B" diseases.</p> <p>In general, legislative and quarantine mechanisms exist to prevent the entry into the countries of diseases not currently present or those that are being controlled.</p>
<p>b. Epidemiological characterization and priorities in each country of diseases of List "B" of OIE.</p>	<p>With the support of CARAPHIN in the Caribbean, and RIMSAL in Latin America, it will be possible to advance on establishing the priorities with respect to these diseases in each country.</p>
<p>c. Annual vaccination of susceptible animal population of Anthrax at all endemic zones of hemispheric countries.</p>	<p>Vaccination programs have been established in low-risk populations.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>d. Execution of studies in each country to know the prevalence and incidence of Aujeszky disease to determine the control and eradication systems to be followed.</p>	<p>Studies completed in Argentina; partial studies conducted in Paraguay; the disease was not detected in Peru, Chile or Uruguay. A control program exists in Mexico. An optional eradication program for breeding farms exists in Brazil. Studies on prevalence are being conducted in Venezuela. An infected farm in Jamaica was depopulated.</p>
<p>e. Reduction of the rate of incidence of Echinococcosis/hydatidosis in endemic zones to levels that permit its eradication.</p>	<p>In Chile, Argentina, Uruguay and Peru control programs are being conducted in affected areas.</p>
<p>f. Eradication of Heartwater in infected Caribbean countries through eradication of Amblyomma tick vector of the Rickettsia etiological agent of that disease.</p>	<p>Countries infested with <u>A.variegatum</u> are conducting control programs for this tick. _____ IICA, FAO, USDA, CARICOM and other agencies conducted a feasibility study on management of this problem. USAID has approved resources for beginning control actions in Antigua. FAO is securing resources in support of the overall project for affected countries.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>g. Execution of prevalence and incidence studies at country level on leptospirosis to determine the most adequate control programs to execute on dairy farms in problem areas.</p>	<p>Training has been provided to professionals and technicians of El Salvador, Nicaragua, Panama and the Dominican Republic to undertake studies on prevalence and incidence in those countries.</p> <p>Mexico has a control program under way in the Tizayuca dairy basin.</p> <p>INTA and the La Plata University are conducting studies in the Salado Basin, Buenos Aires, Argentina.</p>
<p>h. Extension of the current Mexico-USA Screw-worm Eradication Program through Central America to establish a new barrier at the Darien Zone.</p>	<p>Control actions have begun in Guatemala and are about to begin in Belize. It is expected that Mexico will become screwworm-free by late 1989.</p>
<p>i. Eradication of Screwworm (Cochliomyia hominivorax) in Jamaica and execution of feasibility studies in other Caribbean and South America countries.</p>	<p>A project has been drawn up for Jamaica. It has not been implemented for lack of funding.</p>
<p>j. Epidemiological evaluation and execution of control measures of Dermatobia hominis at farm level using the most modern techniques.</p>	<p>Honduras is implementing a control program.</p> <p>Ecuador is conducting an epidemiological and ecological characterization of this parasite, with a view to beginning control efforts.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>k. Annual vaccination of susceptible animal population of endemic zones of Rabies of herbivorous and control of vector bats of the disease, including dogs and other wild animals.</p>	<p>A successful control program is being carried out in Trinidad and Tobago. Vaccinations are given in Grenada. All affected countries of continental America conduct control activities through vaccination programs and the control of vector bats.</p>
<p>l. Study of status of presence of ticks of different species in Latin America and the Caribbean.</p>	<p>Chile is tick-free; studies have been conducted in Argentina, Paraguay, Uruguay, Brazil, Guatemala, Mexico and Peru.</p>
<p>m. Implementation on Latin America and Caribbean countries of Boophilus sp. tick control and eradication programs and control programs of other cattle ticks of economic importance.</p>	<p>An ongoing and obligatory program exists in Mexico and is being set up in Guatemala and Honduras. Argentina is executing a control and eradication program and Brazil and Uruguay are beginning them.</p>
<p>n. Control of Bovine Brucellosis to critical rates that lead to the eradication of the disease at farm, zone and country levels.</p>	<p>Most Latin American countries conduct control programs in the principal dairy production areas. Progress achieved by the programs depends on the amount of resources available.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
o. Execution of studies on different types of Brucella in each country.	Have been carried out in all the countries with the support of CEPANZO. Information is available.
p. Control of Bovine Tuberculosis to critical rates that lead to the eradication of the disease at farm, zone and country levels.	Control activities are carried out in the main dairy production areas of the Latin American countries. A control program for this disease is being drawn up in Guyana.
q. Execution of Bovine Leukosis epidemiological studies at country level to determine the policy regarding that disease.	Studies have been conducted in Chile, where a control program is being designed. Epidemiological studies are being carried out in Panama and the Dominican Republic. Studies have been conducted in Trinidad and Tobago, Barbados and Jamaica.
r. Vaccination of susceptible animal population against Haemorrhagic septicaemia in the areas where the disease was confirmed in the hemispheric countries.	Bacterins are applied against pasteurellosis. Haemorrhagic septicaemia produced by <u>P. multocida</u> serotypes 6B or 6E, which cause this disease in <u>Asia and Africa</u> , has not been reported in the countries of the Americas.

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>s. Execution of Infectious Bovine Rhinotracheitis prevalence and incidence studies at country level to determine the control systems to follow at farm level.</p>	<p>Studies have been conducted in some countries. No official control systems have been defined.</p>
<p>t. Execution of studies of prevalence and incidence Campylobacteriosis, Trichomoniasis and other diseases of the reproduction system at farm level in each country to determine the control programs to follow up.</p>	<p>Studies have been conducted in some countries, generally of a very limited nature.</p>
<p>u. 100% vaccination coverage against Caprine Brucellosis in problem areas.</p>	<p>Vaccination coverage in countries having problem areas is very low, occasionally under 50%; vaccine availability represents a problem.</p>
<p>v. Execution of Trypanosomiasis prevalence and incidence studies at country level to determine the control and eradication measures to undertake in the countries with presence or suspect of that disease.</p>	<p>Very limited studies in some countries.</p>

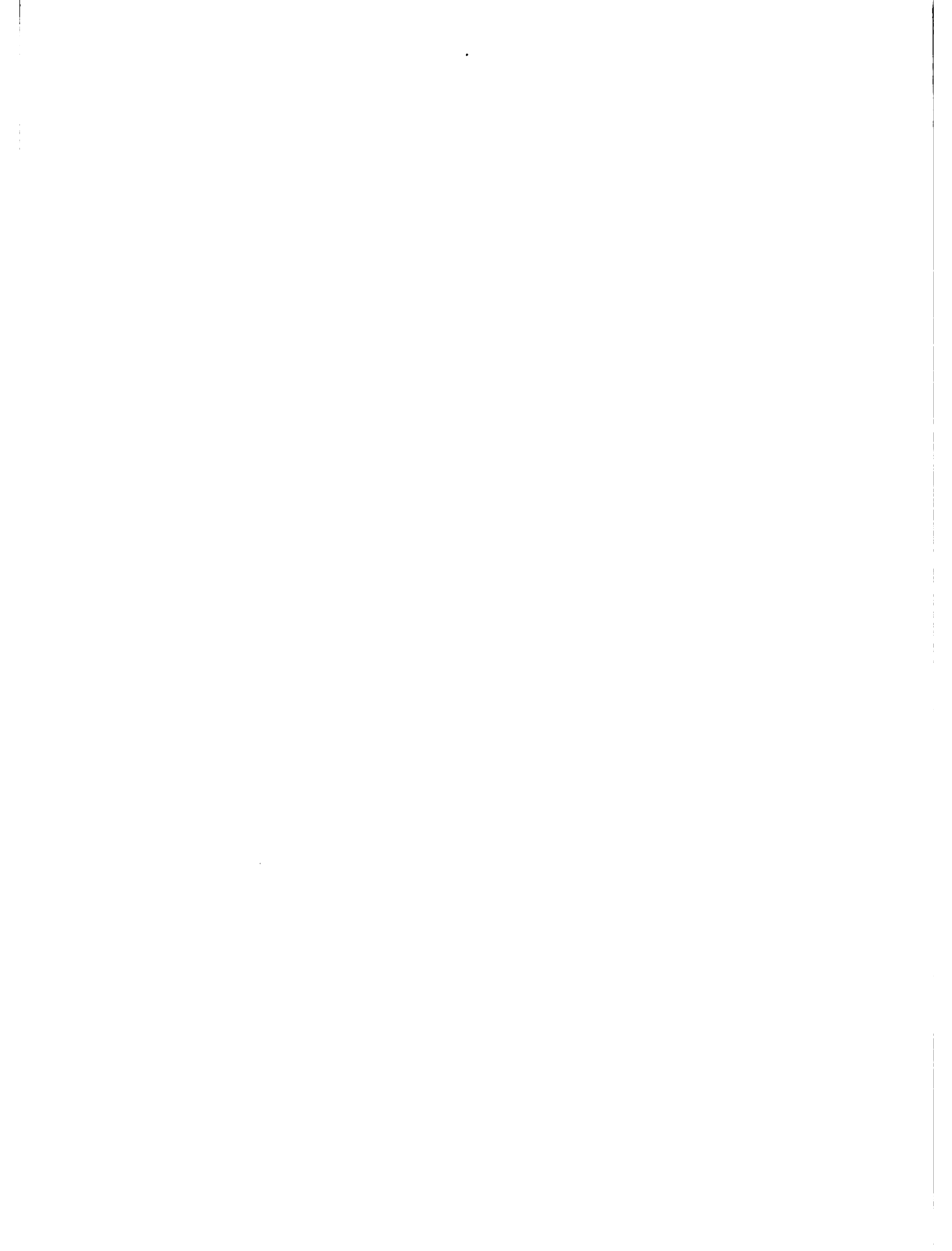
GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>w. Execution of Equine Infectious Anemia prevalence and incidence studies at country level to determine the control and eradication measures to undertake.</p>	<p>The disease has been eradicated at the race track and the stables of Peru. Studies exist in some countries; no control programs have been implemented at the national level.</p>
<p>x. Identification in each country of infected farms of Atrophic Rhinitis of swine to implement strict control measures to avoid dissemination of the disease to other farms.</p>	<p>This problem has not been studied in depth in the countries.</p>
<p>y. Execution of Porcine Brucellosis prevalence and incidence studies at country level to determine the control to be undertaken.</p>	<p>Some studies have been carried out in Argentina, Honduras and Venezuela.</p>

<p>GOALS</p>	<p>ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS</p>
<p>18. <u>Prevention and Control of other Pathological Processes Affecting Livestock Production</u></p> <p>a. <u>Aspects related to bovine reproduction</u></p> <ul style="list-style-type: none">• In representative areas of each country, evaluation of the causes having an adverse effect on meat and milk cattle production, with particular emphasis on nutrition, animal health, management and administration, and professional assistance to cattle producers.	<p>Studies will be conducted through CARAPHIN in the Caribbean and RIMSAL in Latin America.</p> <p>Colombia, Paraguay and Mexico, among other countries, have made progress on this type of study.</p>
<ul style="list-style-type: none">• Inclusion in the statistics units of government animal health services of data on production and productivity in each farm and area, and on specific pathological processes.	<p>Will be promoted through CARAPHIN and RIMSAL.</p> <p>Uruguay and some other countries handle this information.</p>
<ul style="list-style-type: none">• Integral pilot units should be set up in each country, to demonstrate the application of corrective measures or practices derived from research in the different areas, in an effort to increase production.	<p>INTA-Argentina and FONAIAP-Venezuela are working on pilot projects of this nature.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<ul style="list-style-type: none">Development of direct support programs for producers, to promote the use of integral animal husbandry practices.	<p>Under way in the Salado Basin, Argentina, through a program managed by INTA-Balcarce.</p>
<p>b. <u>Aspects related to the mammary glands</u></p> <ul style="list-style-type: none">Evaluation of the repercussions of mastitis in the milk-producing areas of each country, including study of the predisposition to the disease, such as the animal itself, the management, the micro-organism involved and man.	<p>In Uruguay, Argentina, Bolivia and Mexico, studies have been carried out in the milk-producing areas.</p>
<ul style="list-style-type: none">Establishing demonstration farms where integral mastitis control programs will be set up in the problem areas in each country.	<p>Demonstration programs have been carried out in the milk-producing area of La Laguna, Mexico.</p>
<ul style="list-style-type: none">Implementation of government programs for the control of bovine mastitis, including educational activities for the milking personnel and the owners, and for the promotion of appropriate practices to control the disease.	<p>Livestock extension programs include recommendations for the control of bovine mastitis.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>c. <u>Aspects related to diseases of calves</u></p> <ul style="list-style-type: none"> • Evaluation at the area level in each country of the principal factors intervening in the death of calves. 	<p>FAO fosters the exchange of information on factors having an impact on the death of calves.</p>
<ul style="list-style-type: none"> • Establishment of demonstration farms to show proper management of young animals. 	<p>Several countries have extension programs with demonstration farms.</p>
<ul style="list-style-type: none"> • Development of extension programs on the efficient management of young animals, including direct training activities for farm owners and managers. 	<p>Several countries have this type of extension program.</p>

GOALS	ACTIONS CARRIED OUT BY THE COUNTRIES OR INTERNATIONAL AGENCIES TO ACHIEVE THE GOALS
<p>d. <u>Aspects related to swine production</u></p> <ul style="list-style-type: none">. Evaluation at the area level in each country of the principal factors affecting swine production and productivity.	<p>Research institutions in countries with significant swine production have characterized the main problems in swine-producing areas.</p>
<ul style="list-style-type: none">. Development of extension programs to show proper management of swine farms and facilities to reduce production and productivity losses due to management, reproduction, nutrition and animal health problems.	<p>Extension programs include recommendations on proper management of swine farms.</p>
<p>e. <u>Aspects related to avian production</u></p> <ul style="list-style-type: none">. Evaluation at the area level in each country of the principal factors intervening in production and productivity of poultry farms.	<p>In general, all the countries have identified the principal avian production problems.</p>
<ul style="list-style-type: none">. Development of extension programs to show proper management of poultry farms to reduce production and productivity losses.	<p>Extension programs include recommendations on the management of poultry farms.</p>



PROGRESS REPORT ON THE IMPLEMENTATION OF THE
INTER-AMERICAN NETWORK OF ANIMAL HEALTH LABORATORIES

Héctor Campos*

One of the goals of the Animal Health Plan for the Americas by the year 2000 is the implementation of an Inter-American Network of Animal Health Laboratories. The network, to be divided into subregional committees responsible for specifically defined geographic areas, has as its primary objective the exchange of technology and the provision of reference support to make maximum use of laboratory diagnosis at the hemispheric level.

Since early in this decade, IICA has organized numerous meetings of the directors of the laboratory services in the countries of the Central, Caribbean, Andean and Southern Areas, which have provided the opportunity for technical exchange, in training as well as in the provision of reagents and other diagnostic elements.

In the Central, Andean and Southern Areas, this type of exchange has been formalized through the establishment of subregional committees: REDCENTRAL, LABANDINA AND REDSUR. IICA specialists in Costa Rica, Ecuador and Argentina, respectively, act as technical secretaries for these committees, which serve to link the laboratory services of the countries of each Area.

The Inter-American Network of Animal Health Laboratories (RILSA) was founded in Lima, Peru on August 16, 1988 at a meeting of representatives of the different areas and countries, held to discuss the role and scope of RILSA.

Participating in this meeting were: Dr. Fernando Calderón, of Costa Rica, representing the Central Area; Dr. Stephen St. John, of Barbados, representing the Caribbean Area; Dr. Gerardo Méndez, of Bolivia, representing the Andean Area; Dr. Eugenio Perdomo, of Uruguay, representing the Southern Area; Dr. Marvin F. Baker, of Canada, and Dr. Robert M. Nervig and Dr. Ron Yedloutschnig, of the United States.

Also present were observers from Brazil, Chile, Mexico, Panama, Peru and Venezuela, as well as from organizations such as the World Association of Veterinary Laboratory Technicians, FAO, PAHO, IDB, OIE, GTZ, PANAFTOSA and CEPANZO.

During this meeting, the bylaws of RILSA were discussed and approved. The objective of RILSA is to promote the organization, improvement and updating of laboratories, both technically and administratively, through the standardization of norms, criteria and procedures; the exchange of technology and experiences; and the continuous training of personnel.

With this objective in mind, IICA, as technical secretariat for RILSA, has begun a technical cooperation project supported by animal health specialists in various countries of the Americas, which is intended to cover the following areas:

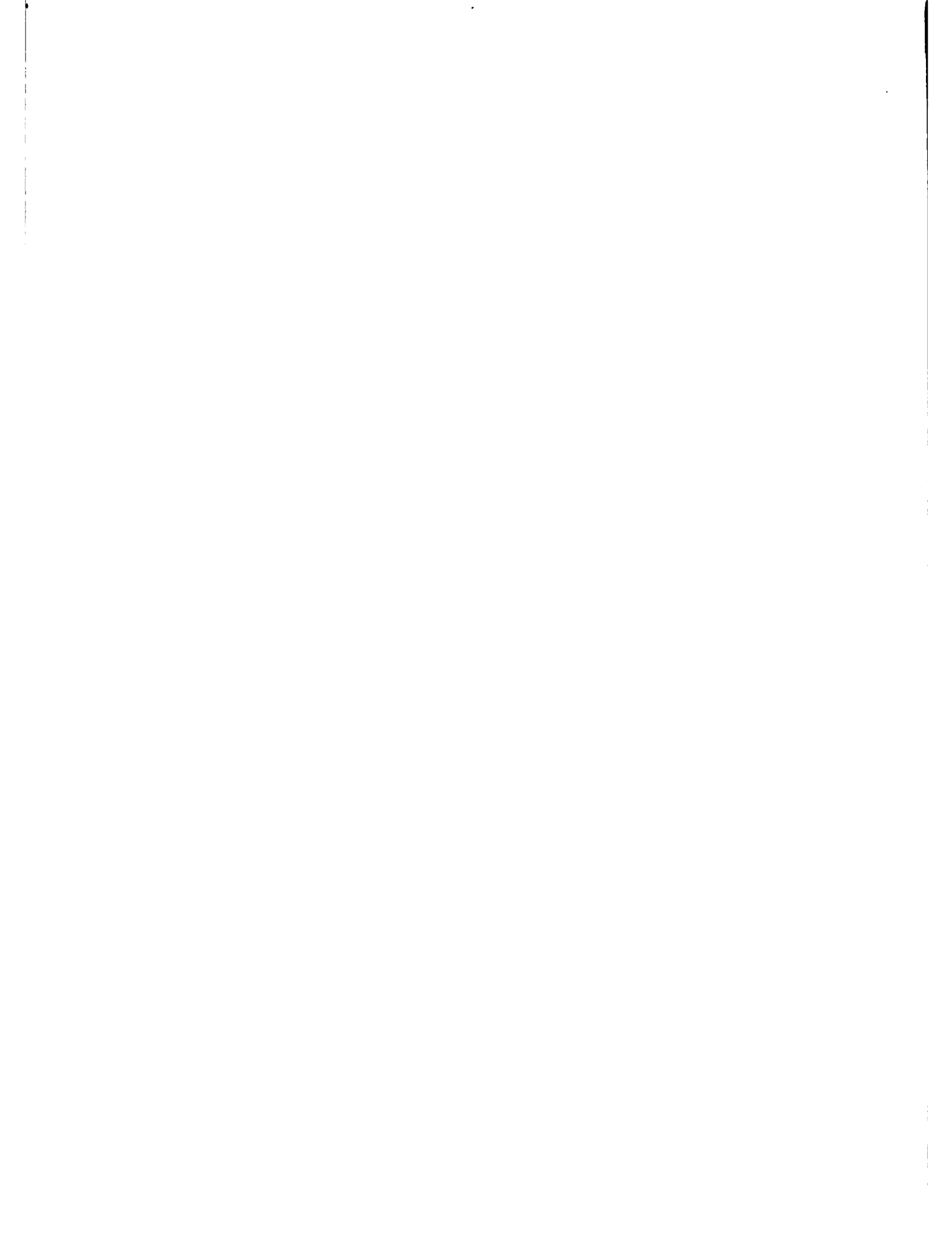
* Deputy Director of Animal Health, IICA.

- a. Evaluation of laboratories. The evaluation of laboratories in the countries of the Central and Southern Areas has been completed, and that of the labs in the Andean Area is well under way. Those in the Caribbean Area have yet to be evaluated. It is necessary to determine the current status of these labs prior to planning the cooperation actions to be taken in each country.
- b. Promotion of national laboratory networks. In almost all of the countries of Latin America, efforts are under way to strengthen the organization of national laboratory networks, as a means of upgrading the operation of the labs and standardizing their technical and administrative procedures.
- c. Administrative and financial strengthening. In several countries, emphasis is being given to the establishment of committees or councils, with the participation of livestock associations, to provide funding for the labs. It is hoped that this will make the labs self-sufficient and less dependent on government funds.
- d. Technical cooperation projects with national and external resources. IICA is collaborating with several countries in the development of projects designed to strengthen their animal health laboratories, using the resources of the countries themselves, as a means of simplifying the administrative management of these resources.
- e. Subregional technological exchange projects. Project profiles are being prepared in all four subregions to seek external funding for the development of laboratories by reinforcing horizontal technological exchange activities; these projects also include the strengthening of certain labs, which, because of their characteristics and capacity, might serve as reference units for a subregion.
- f. Training and technological exchange. Much has been done in this area. There have been training courses for lab personnel, professionals have been granted short-term scholarships for training overseas, and specialists have provided advisory services in priority areas.
- g. Publication of manuals. To date, several lab manuals have been published, and widely distributed in the countries. Among these are manuals on: techniques for diagnosing babesiosis and anaplasmosis; Veterinary bacteriology and mycology; immunoenzymatic techniques, etc.
- h. Bibliographic dissemination. Through different mechanisms such as content pages, bibliographic searches, distribution of technical literature, and, since November 1988, through the RILSA bulletin, IICA has sought to provide the countries with the most up-to-date technical information available in different fields, but especially that concerning laboratories.
- i. Standardization of techniques. Several actions have been undertaken to standardize the execution and interpretation of different laboratory techniques (blue tongue, hemoparasites, residues in meat, etc.).

RILSA is a new mechanism which began operations only a short time ago. Nonetheless, in the short time it has been in existence, it has proven to be a useful and necessary instrument for improving the operation of animal health laboratories. The fact that it has drawn the attention of top-level officials of the ministries of agriculture to this issue is in itself an important step forward.

Because of the speed with which scientific and technological changes are taking place nowadays, we must use every means at our disposal if we want to be better informed and benefit from the latest technological advances in fields of interest to us.

Unfortunately, at the present time only a few countries in Latin America and the Caribbean can take advantage of and use some of these technologies. The challenge for RILSA in the future is to facilitate the adaptation of these new technologies to conditions in the countries, by reducing the cost of application, in order to promote more extensive use of same.



REPORT OF THE EVALUATION OF RILSA LABORATORIES

Raymond Dugas*

I. INTRODUCTION

In the Multinational Project for the Strengthening of Animal Health Laboratories and Epidemiological Surveillance in the countries of the Central, Andean and Southern Areas, carried out by the IICA since 1987, the lack of connection and coordination among the laboratories of each country and the reduced access to international support have been identified as some of the reasons which lead to weakening the laboratory service structures.

This is undergone by most of the Latin American countries, where central and regional laboratories depending, in many cases, on a same official institution, usually the Ministry of Agriculture, lack of technical or administrative connection or coordination resulting in almost independent activities. Restraining the exchange of the available resources, on one hand and reducing the overall view of the sanitary problems within the country, on the other hand, are the consequences of this situation.

Furthermore, it may be mentioned that due to the limited capacity to extend the scope of the disease diagnosis and to introduce new diagnostic technologies, the situation of diseases in the countries are unknown or underestimated. Besides, heterogeneous technical criteria are applied to diagnostic methods from one country to the other and there is scarce use of laboratories with higher capacity in specific areas -training, diagnosis, production and control of biologicals-. Management and financing is another outstanding problem faced by the laboratories, which, in many cases, results in desertion of qualified personnel, worn-out furniture and equipment due to carelessness of maintenance, and few resources for laboratory and field work.

In the past few years, IICA -within the framework of the above-mentioned project- has devoted to carrying out activities for strengthening the operative and working capacity of the Animal Health and Epidemiological Surveillance laboratories, by consolidating the national network of laboratories and the Interamerican Network of Animal Health Laboratories (Red Interamericana de Laboratorios de Salud Animal - RILSA). Its purpose is to extend the capacity of the animal health services to solve efficiently the negative incidence of diseases and plagues in the livestock production and its consequences in international commerce.

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II. ACTIONS DEVELOPED BY THE PROJECT

Project actions are aimed at establishing coordination and cooperation mechanisms in the countries and among the countries, by establishing national, subregional and inter-American laboratory networks. These coordination and cooperation mechanisms include, at the three above-mentioned levels, a program of technological exchange for introducing new diagnostic techniques, harmonizing procedures and criteria for the different diagnostic techniques and using the larger laboratories which have been identified and set up as production and reference centers, staff training, diagnoses, and the production and the control of biologics.

Two other actions of the project involve research and promotion of management and funding models for animal health laboratories, as well as support to the countries that need it in preparing projects to strengthen their laboratory and epidemiological surveillance services.

i. Evaluation of the laboratories that are part of the Inter-American Animal Health Laboratory Network

The subregional animal health laboratories for the Central, Andean and Southern Areas (LABCENTRAL, LABANDINA and LABSUR) were established in 1982. In 1988, they came together to form the Inter-American Animal Health Laboratory Network (RILSA).

One of the objectives of RILSA is to make efficient use of human resources, equipment and facilities, promoting horizontal exchanges. In order to meet this objective, it is essential to have full knowledge of these resources which will facilitate proper programming and make it possible to evaluate the impact and thrust of these efforts. One priority is to maintain an up-to-date and complete catalogue of animal health laboratories which evaluates existing resources and describes training and diagnostic services, and the production and control of biologics offered by the laboratories to third countries.

A survey is being made in the countries of the Central and Southern Areas, covering 111 animal health laboratories (Appendix I). The survey includes gathering information on the services provided by the laboratories, type of diagnostic services offered, reference services offered and received, production of biologics, control of biologics, foods and medication, and techniques used. The survey also includes information on the most frequently made diagnoses; the number of staff member, their academic training and years of experience; as well as information of the physical infrastructure, general services and facilities, inventory of equipment, equipment not used and number of laboratory animals used.

This information has been processed, analyzed and published; its summary appears in Tables I to V.

Out of this information, it arises that for the laboratories of the Southern Area 73% and 60% of the reference services received, on training and biologics respectively may be considered low, since such services should be continuous and for the benefit of all the laboratories. For the Central Area, the percentages are more adequate: 70% on training, 73% on biologics, 91% on reactives and 79% on special techniques (Table I).

Biologic production was low (Table II) in the Central Area: 7% for antigens, 4% for antiserums, 2% for bacterins; in the South Area it reaches 18% for antigen and bacterine production, and 11% for antiserums and others. 13% of the laboratories in both areas control biologics, 29% control animal feed; 4% control antibiotics and vitamins in the South Area and between 2 and 4% in the Central Area.

Table III shows a summary of the techniques applied in the laboratories of the different countries.

In Serology, the most frequently diagnosed diseases in the Central Area are Brucellosis (98%), Pullorosis (39%), Equine Infectious Anemia (14%) and Hemoparasites, Leptospirosis and Newcastle (9%). In the South Area the prevailing diseases are Brucellosis (76%), Equine Infectious Anemia (44%) and Foot and Mouth Disease, Leptospirosis and Bovine Leucosis (25 to 32%).

For ELISA and direct and indirect immunofluorescence techniques, the most common diagnoses are Rabies (46%) and Hog Cholera (20%) in the Central Area, and Rabies (31%), Hog Cholera (25%), Clostridiasis (18%) and Aujeszky (13%) in the South Area.

TABLE I: FUNCTIONS OF THE ANIMAL HEALTH LABORATORIES

	CENTRAL AREA %	SOUTHERN AREA %
<u>Functions</u>		
Diagnosis	100	96
Investigation	16	51
Production and control	11 & 18	33 & 36
Reference	54	31
Training	43	24
 <u>Assisted species and averaged animal population in the labo- ratory area (in million)</u>		
Bovines	100 (1.2 M)	96 (5.6 M)
Porcines	94 (0.6 M)	93 (2.2 M)
Ovines	82 (0.2 M)	85 (2.1 M)
Equines	95 (0.1 M)	82 (0.2 M)
 <u>Diagnostic procedures</u>		
Serology	94	93
Bacteriology	79 & 43	87 & 40
Necropsy, clinical pathology	82	49
Parasitology	100	85
Virology	30	65
Toxicology	29	31
 <u>Reference services</u>		
Received:		
training and special techniques	71 & 79	73 & 62
biologics-reactives	73 & 91	60 & 71
Offered:		
training and special techniques	50 & 54	55 & 53
biologics-reactives	41 & 46	36 & 42

**TABLE II: PRODUCTION AND CONTROL OF BIOLOGICALS
FOOD AND MEDICINES**

	CENTRAL AREA	SOUTHERN AREA
	%	%
<u>Biologic production</u>		
Antigens and bacterins	7 - 2	18
Antiserums and other	4 - 10	11
 <u>Control</u>		
Vaccines		13
Food	13	29
Parasiticides	5	13
Minerals	2	9
Antibiotics and vitamins	4	4

TABLE III: TECHNIQUES APPLIED

	CENTRAL AREA %	SOUTHERN AREA %
<u>Patology</u>		
General pathology and clinical pathology	64 & 11	78 & 11
<u>Bacteriology</u>		
Aerobics: tintion and isolation	79 & 77	84
Anaerobics: tintion and isolat.	61 & 48	65
Other techniques	9 to 71	35 to 73
Mycology: tintion and ident.	50 & 39	65 & 31
mycoplasm, identif.	5	15
<u>Parasitology</u>		
Endo, exo and hemoparasites	100 to 57	89 to 75
<u>Virology</u>		
Cellular culture, inoculation of animals	7 & 14	40 & 62
<u>Serology</u>		
Plate and tube aglutination	95 & 60	87 & 84
AGID and other techniques	20 to 16	73 to 40
ELISA and immunofluorescence	4 to 32	22 to 55

The most common diagnoses in the Central Area were Endoparasitosis, Brucellosis, Mastitis, Rabies and Colibacillosis, while in the Southern Area, they were Brucellosis, Endoparasites, Equine Infectious Anemia, Mastitis, Clostridiasis, Hemoparasitosis, Leptospirosis and Rabies sharing the fifth place (Table IV).

TABLE IV: MOST COMMON DIAGNOSES

	CENTRAL AREA	SOUTHERN AREA
	%	%
<u>Most common diagnoses</u>		
Brucellosis	61	73
Endoparasites	82	62
Equine Infectious Anemia (EIA)		31
Mastitis	45	27
Clostridiasis, hemoparasites, leptospirosis		22
Rabies	43	23
Colibacillosis	45	
<u>Standardized techniques</u>		
Brucellosis	67	85
Equine Infectious Anemia (EIA)		38
Rabies	46	33
Endoparasites	70	31
Foot and Mouth Disease		29
Exoparasites	61	29
Tuberculosis	46	29

The average of equipment inventory for REDSUR Laboratories was 104 (85% of basic and 15% of sophisticated equipment). It was more than twice the average for REDCENTRAL. Brazil greatly influenced these figures, as it counts for 64% of the total.

The unused equipment represented 6% and 4% respectively in the Central and South Areas. The reasons given were, in order, lack of spare parts, maintenance, lack of demand, training and reactives to use the equipment.

Concerning human resources, the REDCENTRAL have 14.3% of professionals with specialization, 4.2% with Master degree and 1.2% with Doctorate degree, as compared to 17.2%, 13.3% and 6.9% respectively for the REDSUR. The professionals with more than 6 years of experience reach 64% in the Central Area and 75% in the Southern one, which shows a good stability.

TABLE V: PHYSICAL, MATERIAL AND HUMAN RESOURCES

	CENTRAL AREA	SOUTHERN AREA
EQUIPMENT		
Average of equipment per lab.	36	104
Unused equipment	6	4
due to: lack of spare parts	77%	35%
maintenance	70%	27%
lack of demand	29%	22%
HUMAN RESOURCES		
<u>Professionals:</u>		
DVM or Bachelor	80.1%	62.6%
specialization	14.3%	17.2%
MSc	4.2%	13.3%
PhD	1.2%	6.9%
Experience of more than 6 years	64 %	75 %
<u>Medium level technicians:</u>		
Primary School	6.5%	24 %
Secondary School	25.5%	56 %
Vocational	58.6%	11 %
Bachelor	9.6%	6 %
Experience of more than 6 years	63 %	57 %
<u>Management personnel:</u>		
Primary-Secondary School	44 %	28 %
Commerce-preparatory Sch.	46.4%	18 %
DVM or Bachelor	9.6%	23 %
MSc - PhD		3 %

The analysis of this information enables the Laboratory Services to compare themselves, as to their operative, human and material capacity, in the context of the national and subregional networks and the RILSA.

This information may be used by the Directorate of the laboratories to identify the areas to be strengthened, as well as a basis to identify centers which may serve as reference for diagnostic, training, production and control of biologicals. A first step towards the identification and putting into practice of such reference centers was the publication in May 1989 of a catalog with the services offered by the laboratories of the South Area to other countries. In short term, similar catalogs will be brought out and distributed in the Central and Andean Areas.

It should be mentioned here that a Cooperative Network of Laboratories on Veterinary Investigation and Diagnosis has been created through FAO, in such areas as: Bovine Neonatal Diarrhea, Hog Cholera, Aujeszky Disease and Blood parasites.

The central laboratories are usually the national reference centers for the regional and private laboratories of the national networks. One of the actions of the project consists of aiding there reference activities in supply of reactivities, training and quality control, towards the standarization of the diagnostic techniques used and the criteria for interpreting the different tests; thus, confident results may be obtained, which are essential for the epidemiologic surveillance systems and for the economic evaluation of animal plagues and diseases.

ii. Management and financing of the Animal Health Laboratories

Concerning the actions of the Project for strengthening the administration systems, in the Southern Area in 1988, a survey on management and financing of animal health laboratories was carried out; 8 Central Laboratories of the 5 countries of the Regional and the 3 Veterinary Colleges of Chile took part of it (Annex II).

Data were collected and analyzed according to the following items:

- a. Structure: degree of dependence of the laboratory on superstructures (i.e., Ministry of Agriculture).
- b. Managing system: degree of dependence of the laboratory on the organization (i.e., Official Veterinary Service, Investigation Institute, University).
- c. Budget: As far as planning, control and financing sources.
- d. Management of resources for personnel, material and inputs, equipment and buildings.

The results of this survey for the eight official laboratories may be summarized as follows:

Concerning structure, two laboratories depend on state decentralized, autonomous and self-financed institutions, under a Board of Directors composed of representatives of the different Agriculture and Livestock

sectors. It is interesting to notice that at present another two Animal Health Services are trying to get their autarchy on the basis that they may be financed with their own resources, a high proportion of them coming from the Laboratory Services.

Six of the eight laboratories surveyed have their own administration service, usually depending on the Central Administration of the Animal Health Service. However, in only one case (LANARA, Brazil) a Manual of Management Procedures specifically for Animal Health Laboratories is being used. In general (6 of the 8 laboratories), the Directors of the Animal Health Laboratories do not have access to management training programs adapted to their specific needs.

As regards the regional laboratories, found in 5 of the surveyed laboratories, only two of them respond to the Central Laboratory Administration Service.

The budget is planned annually, and it is controlled monthly to annually. Such control is financial in four laboratories, while in three others, technical evaluations are included.

The laboratories are financed by three possible sources: the State, through the Central Administration of the Animal Health Service, self-financing and external resources.

The State financing ranges from 0% (only one case) to 100% (in 2 laboratories). This source grants 84%, 69%, 40% (in two cases) and 35% of the budget of the other surveyed laboratories and meet expenses incurred by salaries, building maintenance, and in some cases, purchase of equipment. On average, the Government is responsible for 58.5% of the financing of Animal Health Laboratories.

In 2 laboratories their total income goes back to the Central Administration. The self-financing of the other laboratories, coming from diagnostic fees, royalty of new developed products, fees for veterinary medicines and residues control, and revenues on the sale of animals or veterinary products represents from 5 to 90% of the annual budget. On average, the laboratories self-finance 30.9% of their activities.

Finally, the external resources, from agreements with privately-owned enterprises and mainly from technical or financial assistance of national and international cooperation institutions, cover between 60% (only one case) and less than 1% of the laboratory activities; most of the laboratories declare contributions ranging from 2 to 10%. Many laboratories do not take into account this financing source, though it may be important for consultancies, training, purchase of reactivities, materials and equipment.

As for personnel management, only two laboratories consider promotions and institutional continuity. Everyone considers leaves for short, medium and long term training, but the posts of the technicians under training are not taken over. 50% of the laboratories can hire personnel for one-year periods.

Most of the laboratories may fit their budget to purchase materials and inputs, which were not planned in the annual budget. For the control of stored materials and inputs, most of the laboratories will be applying a computerized system in short term.

Despite the budgetary problems affecting every state service, five laboratories are carrying out strengthening projects with foreign resources (IDB, BIRF, Japan), including important equipment plans. Other two laboratories will be benefited with equipment plans when the projects for strengthening of the veterinary services -at present under negotiation in Argentina and Chile- be approved.

Five of the eight laboratories have their own equipment maintenance services; but only three of them include depreciation of such equipment in their annual budget.

Finally, within the framework of the Strengthening Projects, four laboratories carry out plans for extension of their premises; it is also considered in other three projects, currently in negotiation with international financing institutions. It should be remarked that only two of the eight surveyed laboratories consider building depreciation in their budget.

As it may be seen, the laboratory services share common problems such as application of proper managing and programming methods, drawing up of projects and training of laboratory technicians in these fields.

In November 1989, a two-week seminar-workshop on laboratory management and drawing up of projects for strengthening the national laboratory networks, organized jointly by CEPANZO and IICA will take place. The Animal Health Laboratory Directors of Argentina, Chile, Paraguay and Uruguay and other Latin American countries will be invited to this event, which will be held at CEPANZO, Buenos Aires.

The subjects for discussion will be management, economy, programming, appraisal and drawing-up of projects as well as preventive maintenance and biosecurity, incentives for personnel and training programs.

The expected results will be that the Laboratory Directors acquire general management principles, which may be applied according to the administrative background in each institution.

The Animal Health Program developed by IICA will continue supporting the different laboratories to develop managing rules and procedures and laboratory financing for strengthening national networks.

ANNEX I

ANIMAL HEALTH LABORATORIES INCLUDED IN RILSA SURVEY

Central Area

1. COSTA RICA
Centro de Diagnóstico e Investigación en Salud Animal (Ministerio de Agricultura y Ganadería) with four regional laboratories.
2. EL SALVADOR
Laboratorio Central de Referencia de Patología Animal (Ministerio de Agricultura) with three regional laboratories.
3. GUATEMALA
Laboratorio Central de Diagnóstico en Sanidad Animal (Ministerio de Agricultura, Ganadería y Alimentación).
4. MEXICO
Centro Nacional de Salud Animal (Secretaría de Agricultura y Recursos Hidráulicos) with 34 regional laboratories.
5. NICARAGUA
Centro Nacional de Diagnóstico e Investigación Veterinaria (Ministerio de Agricultura) with four regional laboratories.
6. PANAMA
Laboratorio Nacional de Diagnóstico e Investigación Veterinaria (Ministerio de Desarrollo Agropecuario) with five regional laboratories.

Southern Area

1. ARGENTINA
Dirección de Diagnóstico, Control y Métodos del Servicio Nacional de Sanidad Animal (SAGyP) with 13 regional laboratories.

Centro de Investigaciones en Ciencias Veterinarias (CICV) and six regional units of Investigation on Animal Health, from the Instituto Nacional de Tecnología Agropecuaria (INTA), SAGyP.
2. BRAZIL
Laboratorio Nacional de Referencia Animal - LANARA - with nine regional laboratories of animal health (LARA) and 11 Centers on Diagnostic, Investigation, Production and Control for reference of the country, the States and the Veterinary Colleges.
3. CHILE
Laboratorio pecuario central de diagnóstico y control, División Protección Pecuaria, Servicio Agrícola y Ganadero (SAG) with two regional laboratories and the ones of the Veterinary Colleges.

4. PARAGUAY

Laboratorio de Investigación y Diagnóstico Veterinario (Ministerio de Agricultura y Ganadería).

Laboratorio de Diagnóstico del Servicio Nacional de Sanidad Animal (SENACSA).

5. URUGUAY

Centro de Investigaciones Veterinarias "Miguel C. Rubino", Dirección General de Servicios Veterinarios, Ministerio de Ganadería, Agricultura y Pesca (DGSV-MGAP) with three regional laboratories.

Laboratorio de la Dirección de Lucha contra la Fiebre Aftosa (DGSV-MGAP).

ANNEX II

**Countries Participating in the Survey on Management
and Financing of Animal Health Laboratories**

Southern Area

Argentina

Dirección Nacional de Diagnóstico, Control y Métodos, del Servicio Nacional de Salud Animal (SENASA), SAGyP.

Centro de Investigaciones en Ciencias Veterinarias (CICV) del Instituto Nacional de Tecnología Agropecuaria (INTA), SAGyP.

Brazil

Laboratorio Nacional de Referencia Animal (LANARA). Secretaría Nacional de Defensa Agropecuaria, Ministerio de Agricultura.

Chile

Laboratorio Pecuario Central de Diagnóstico y Control, División Protección Pecuaria, Servicio Agrícola y Ganadero (SAG), Ministerio de Agricultura.

Veterinary Colleges of the Universities of Chile (Veterinary Center of Diagnosis and Service), from the College of Concepción (Laboratory of Veterinary Diagnosis) and Austral College (Laboratories of Pathology, Clinical Pathology, Ictiopathology, Avian Pathology, Toxicology and Preventive Medicine).

Paraguay

Laboratorio de Diagnóstico e Investigación Veterinaria (LIDIIV) del Programa de Desarrollo de la Ganadería, Ministerio de Agricultura.

Laboratorio de Diagnóstico del Servicio Nacional de Sanidad Animal (SENACSA).

Uruguay

Centro de Investigaciones Veterinarias "Miguel C. Rubino" (CIVET), Dirección General de Servicios Veterinarios, Ministerio de Ganadería, Agricultura y Pesca (MGAP).

Laboratorio de la Dirección de Lucha contra la Fiebre Aftosa, Dirección General de Servicios Veterinarios, MGAP.

A MODEL FOR A PROJECT OF TECHNOLOGICAL EXCHANGE DIRECTED
TO STRENGTHEN ANIMAL HEALTH LABORATORIES: "STRENGTHENING OF
THE LABORATORIES FOR VETERINARY DIAGNOSIS INTEGRATING THE REDSUR"

Eugenio Perdomo*
Julia Saisar**
Raymond Dugas***

I. **ANTECEDENTS**

i. The Southern Region and its human and animal population

Argentina, Brazil, Chile, Paraguay and Uruguay compose the Latin American Southern Region, which total surface is 12,620,054 square km, and which population is 170,532,000 inhabitants.

Because of the different geographic areas included in it, as well as of the wideness of its surface, the region shows various ecological and climatic situations and also the population's habits differ from a zone to another, all this resulting in a very heterogeneous situation -both from the geographic and social point of view- which makes very difficult to draw up global regional characteristics.

In spite of the fact of the above mentioned differences, there exist common features that allow to make joint efforts to improve the people's social and economic welfare.

The livestock production is one of those common activities that can be strengthened among the countries of this region; furthermore, it has done a fundamental contribution to the development of these countries since their independence. At present, the livestock sector of the economy needs efficient mechanisms to protect and preserve animal health, in order to improve the productivity levels and to secure public health.

It is estimated that in the Latin American Southern Region there exist 204,030,000 cattle heads, which are 40.2% of the whole continent's stock. Apart from this, in each country there is production of other domestic animals, which are also a part of the regional livestock capital and which also require technology to improve their productive capacity, given conditions of high profitability.

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ii. Actions and studies already done

In 1982, during the First Meeting of Directors of Laboratories for Veterinary Diagnosis -LABSUR I- (Belo Horizonte, Brazil), it was clearly pointed out that there was a need for regional integration, in order to search solutions to problems affecting livestock production, mainly those related to animal health and epidemiological surveillance of laboratories.

In successive meetings of the network of laboratories today called REDSUR, whose By-laws are approved in 1986, the need of putting in force the mechanism to strengthen the REDSUR and to give more effectiveness to this regional veterinary integration was subsequently pointed out.

Every action performed within the framework of joint projects supported by different international organizations, as well as the results of samples about the situation of regional laboratories, all agree in remarking how scarce available infrastructure, resources and the training level of the research staff are, all these different appraisals concluding that it is necessary to look for solutions that could make the strengthening of these institutions possible.

iii. Integration

Integration among research and veterinary diagnosis laboratories in the Latin American Southern Region countries is highly necessary, in order to coordinate the activities of the regional and national animal health programs, to rule the matters related to diagnosis techniques and reactives, to reach an effective scientific integration and to facilitate animal product and by-product commercialization.

This integration will make possible to gradually strengthen the laboratories of the Southern Region and therefore the rational use of the available resources, in order to produce reactives for the diagnosis and for the training of human resources, the exchange of information and the performance of coordinated tasks will be easier.

The development of the regional information and communication as regards the epidemiological situation of the different diseases affecting cattle-herds is of the greatest importance. Similarly, the laboratories must be prepared and must have trained staff to deal with the problem both of emergent diseases and of exotic ones that may be introduced in the Area.

The biotechnologic improvements related to techniques for the diagnosis, reproduction, nutrition and production of zootherapeutic biologics require efforts combined among the countries as regards the needs for training and equipment, in order to answer the demands for assistance and technological transfer to the livestock sector.

It will be a very important step in animal health programs towards the year 2000 to reach this goal of strengthening a regional structure of permanent integration, in order to exchange ideas, to plan regional and national health policies, to train laboratory staff profiting from the experience of the human resources existing in this region, as well as from the production and exchange of diagnosis reactivities.

II. ANALYSIS OF THE TECHNICAL SITUATION

i. Livestock production systems

Agricultural production systems are exposed to several factors affecting their productivity which are due to different causes that may act separately or combined, thus potentializing their action.

In the livestock production systems, the negative effects of the different etiologies are observed in the most spectacular way. Such etiologies are associated with management, maintenance conditions, type of production, genetic causes, environmental conditions and variation, feeding and diseases.

Every livestock production system already initiated or in development requires healthy animals, being animal health one of the basic and at the same time constraining factors of the system.

The basic objective of an animal health program is to preserve sanity in order to increase productivity and to protect public health.

ii. Incidence of animal diseases

The pathogenesis of every affection is one of the most complex problems of veterinary medicine, because they are related to low production efficiency, low growth and production rates, perinatal mortality and immunological insufficiency, among other consequences.

Within a context of diseases whose etiology is known, it is possible to quote FMD, which is found in most of the Southern Region and which prevents meat products or live animals, semen and embryos from these countries from having access to markets which are free from this disease. Apart from this, many are the examples that can be mentioned.

It is necessary to add to this hardly quantifiable indirect loss the direct losses due to epizootic outbreaks which, in turn, represent quarantine measures, suspension or delays in the activities of the affected farm and, furthermore, expenses due to technical assistance, zootherapeutic inputs and the time necessary for the ill animals to recover as well as the national obligatory vaccination and epidemiological surveillance programs.

III. ANALYSIS OF THE INSTITUTIONAL, BUDGETARY AND FINANCIAL SITUATION

i. The problems

There are common features of the problem posed in the Southern Region. Among others, these are:

- a. Absence of an integrative infrastructure at the regional level.
- b. Use of different diagnosis techniques or of different criteria to appraise the results obtained.
- c. Use of reactivities from different origins in the same laboratory technique.
- d. Ignorance about the diagnosis activities performed in each country.
- e. Scarce exchange of scientific or epidemiological information.
- f. Insufficient training, both of the professional and of the technical staff.
- g. Generally speaking, scarcity of resources.
- h. Loss of high scientific level staff, as a result of not enough professional and wage encouragement.

ii. Potential for solving those problems

Generally speaking, and without changing much their infrastructure, the laboratories of the Southern Region may be strengthened by means of investments in new diagnosis techniques and in staff training, all this backed by an adequate wage policy in order to support those who are responsible for preserving animal health.

IV. **THE PROJECT**

i. Objectives

a. General objective

To be a contribution to improve animal health situation in the REDSUR member countries.

b. Specific objective

The strengthening of the REDSUR Laboratories for Veterinary Diagnosis has the objective of settling permanent mechanisms in order to:

1. Identify the Regional Reference Laboratories for Diagnosis and for Production of Diagnosis Reactives.
2. Produce and use jointly reactivities for the diagnosis of animal diseases and zoonosis.
3. Rule the diagnosis techniques.
4. Plan and develop applied research programs.
5. Train human resources.
6. Exchange scientific and technological information.
7. Establish a Regional Information Network about Animal Health.

V. **RESULTS**

Four years after its launching, the project is estimated to have an organization of Laboratories for Veterinary Diagnosis, which will allow to perform the tasks of continuity and coordination of activities having common interest or related to staff training at the regional level, being all this financially supported by the REDSUR member countries.

Specific programs both on diagnosis research or on applied research on the diseases mainly affecting animal health in the Southern Region will be in motion.

The staff training programs on different technical fields of veterinary science will have been approved. Furthermore, training on administration of laboratories will be in process of performance.

The Central Laboratories of the Southern Region countries will be, in turn, responsible for improving the technical capacity of the laboratories that compose the National Network (said network involve official regional, provincial, research, training and private laboratories). Such improvement will be carried out by means of similar training actions, provision of reactivities and quality controls, in order to

uniform the diagnosis techniques currently used as well as the interpretation criteria for every test, and also to obtain reliable information about the prevalence of the different diseases and their economic impact.

The necessary basis for developing a Regional Postgraduate College will have been settled, in order to strengthen the following areas:

- Animal Pathology
- Animal Immunology
- Biostatistic
- Epidemiology
- Information sciences
- Extension
- Transfer of technology
- Studies on animal production systems and project design
- Evaluation of zootherapics
- Production of laboratory reactivities
- Food protection
- Laboratory quality control

A Regional Network of Scientific and Epidemiological Information, connected to other world-wide network, will have been consolidated.

The basis for integrating research and extension programs will be settled, in order to establish an efficient system for the transfer of technology to the livestock sector.

The universities will take part in the teaching and research programs of common interest, through several coordinated activities.

VI. THE STRATEGY

i. Activities to be done

This project allows the development of joint activities tending to improve the regional epidemiological diagnosis and surveillance and to give more effectiveness to REDSUR resolutions and recommendations, to make actions regarding production of reactivities more rational, and also to train human resources.

According to those constraining factors that are considered to be the causes of the present situation of laboratories in this region, the contribution that the project will do in order to solve them will be as follows:

CONSTRAINING FACTORS

- a. There is no integrative infrastructure at the regional level.
- b. Different diagnosis techniques and reactivities are being used, and their results are being evaluated according to different criteria.
- c. The present diagnosis or research activities are not known throughout the region.
- d. The exchange of scientific information is scarce.
- e. Valuable human resources are lost by lack of professional or wage encouragement.
- f. The professional and paratechnical staff does not have enough participation.

ACTION DONE BY THE PROJECT

- a. The infrastructure that exists in the REDSUR Area will be strengthened by means of a Directorate, whose members will be the scientific Directors of the Diagnostic Laboratories of the five countries included in the Region.
- b. The techniques for the diagnosis and for the production of reactivities currently in use in the laboratories which are members both of the REDSUR or of the National Network will be regulated. Reference laboratories for diagnosis and for production of diagnosis reactivities will be established.
- c. Joint research programs on animal health will be created, and scientific information and experiences will be exchanged through special committees.
- d. A Regional Scientific Information Network will be established and connected to the main Reference Centers.
- e. The project will act indirectly, by means of the encouragement produced by the applied research programs that will be operating.
- f. The training program to be established will have clear objectives, so that the technician has the opportunity to apply his knowledge at his return to the laboratory where he usually works.

CONSTRAINING FACTORS

g. Generally speaking, there is an important lack of resources.

ACTION DONE BY THE PROJECT

g. The activities and results of the project will show the Governments the importance of devoting resources to animal health diagnosis institutions, as well as of rising the salaries of the staff committed to them. Investment and institutional strengthening projects will be drawn up, in order to obtain both external and internal support.

VII. BENEFICIARIES

The countries that will take part in this project will be the beneficiaries of its success. Nevertheless, it can be defined at which levels the member countries will experience the general regional and national benefits:

1. The reduction of enzootic and zoonotic diseases and the prevention of the diseases considered as exotic is a benefit both in sanitary and economic terms.
2. This project is basically oriented to strengthen the Veterinary Diagnosis Laboratories which are part of the REDSUR. Therefore, said laboratories will be the main beneficiaries, but as the project also involves the whole livestock sector, its benefits will reach to all the population related to that sector.
3. Professionals devoted to agricultural activities will profit, because as a result of the project, there will be a laboratory infrastructure which will provide them with adequate information about sanitary problems affecting cattle-herds, thus allowing them to develop planned activities for the assistance to producers.
4. Producers will profit by the application of the results of new laboratory technologies, which will allow to develop efficient protection measures against enzootic and exotic diseases, all this involving a general improvement in cattle health and thus in the productivity of the livestock capital.
5. The Directors of Animal Health Programs will profit by having a constantly updated Net of Laboratories for Diagnosis. Furthermore, they will also have a Net for the Epidemiological Surveillance, composed of their field and laboratory technicians. This net will enable them to carry out immediate actions against the outbreaks of any disease, to plan actions for sanitary campaigns and to evaluate their field services.

6. The population as a whole will be the indirect beneficiary of the project, because of the improvement of cattle health, which, no doubt, will result in an increase of economic activity. As a consequence of this, more food products having animal origin will be available and exportable excedents will grow out.
7. The Southern Region as a whole will profit by having an infrastructure which will ensure more protection for the livestock capital. The Region will also have several laboratory units for diagnosis integrated among themselves, which will provide more sanitary and technological information to maintain said protection.

VIII. RESOURCES

The activities of the project will be developed in the physical areas of the current animal health laboratories of the five countries that compose the Southern Region. The Directions of these laboratories will provide the project with staff, equipment and laboratory materials and inputs.

Additional resources will be necessary to be devoted to:

- a. **Fees** for international consultants, who will be specialists in specific areas that have particular interest for the laboratories of the Southern Region.
- b. **Traveling and per-diem fees** for international consultants, for REDSUR technicians to take part in training activities both at national or international level and also for the Directorate of the REDSUR to attend their biannual meetings.
- c. Laboratory reactives, materials and equipment; computers; expenses in document printing and distribution and expenses in telecommunications.

These expenditures are estimated to be US\$950.000 for the full four-year term of the project. US\$143.000 to afford general expenditures and US\$95.000 for non-predictable costs are also estimated. The total cost of the project is estimated to be US\$1.188.000.

IX. ORGANIZATION FOR ENFORCING THE PROJECT

The structure already created at the Southern Region level is proposed to be used in integrating the REDSUR Animal Health Laboratories. The IICA is in charge of the Technical Secretariat.

Directorate

- * It is composed of the Directors of Laboratories for Diagnosis, Research and Teaching from every Southern Region country. (Two institutions from each country will be represented). It is also

composed of the IICA Animal Health Specialists for the Southern Region (Technical Secretariat).

- * It will meet twice a year, in order to perform the following joint or coordinated activities:
 - a. Identification of priority areas to strengthen the Animal Health Laboratories, both at the regional or national level.
 - b. Selection of the alternatives that will allow to reach this strengthening as efficiently and at the lowest cost as possible.
 - c. Constant information about the results of the project and permanent evaluation of the objectives already reached.
 - d. Measurement of the profitability of the research, diagnosis and production programs, ensuring that the benefits will be larger than the costs.
 - e. Planning and coordination of activities with the Directors both of the National Animal Health Services and of the Regional Reference Centers, within the framework of the Pan American Health Organization and FAO Animal Health Programs.
 - f. Drawing-up of budgets and balances, and evaluation of the results of the actions performed within the context of the REDSUR.
 - g. Approval of the training programs for the staff of the laboratories that compose the national network.
 - h. Drawing-up of the schedules of the periodic meetings of laboratory staff, in order to organize courses, seminars or workshops.
 - i. Contracting consultants and experts from other regions, in order to strengthen specific actions of the REDSUR member countries.
 - j. Establishment of a mechanism for capturing information about diagnoses performed in the laboratories that compose the national network distribution of said information to the National Units, which will be in charge of carrying out economic evaluation studies of animal diseases and pests.

The Directorate of the REDSUR will be assisted and advised by the consultants selected by it, who will take part in its meeting having voice but no vote.

BIOTECHNOLOGY AND ANIMAL HEALTH

Jerry J. Callis*

It is a pleasure to attend this Hemispheric meeting and relate some of my thoughts and observations on "Biotechnology in Animal Health".

Firstly, I should like to call your attention to a Workshop held at the Inter-American Institute for Cooperation on Agriculture (IICA) headquarters in Costa Rica last year where a group reached agreement on a generic guideline for R-DNA standards. While the meeting was held in IICA facilities it was sponsored jointly by the Pan-American Health Organization (PAHO), the Food and Agriculture Organization (FAO), Office International des Epizootics (OIE), and IICA. The Workshop was held in recognition of the fact that not all countries of the hemisphere have issued guidelines for R-DNA studies. Perhaps, availability of a generic standard developed by a group from the hemisphere and published in English and Spanish will provide a guide for countries to develop their individual standards. The standard has now been published and distributed, and there is the hope that countries where standards regulating such studies do not exist will undertake standards development at an early date. There was the strong belief on the part of the participants that most countries would wish to develop guidelines. The book is an attractive publication with a black cover with a DNA segment depicted on the front. Those of you who have not seen it are urged to obtain a copy and to form national committees to address this issue. Everything you need to take action is there. This Workshop was possible because of funding from IICA, PAHO, OIE, Inter-American Development Bank (IDB), and the United States Department of Agriculture (USDA). The late Dr. Pedro Acha was primarily responsible for arranging the Workshop and preparation of the material which was reviewed. This particular guideline addressed work with R-DNA at the research or laboratory level and events in recent years have demonstrated such risks to be minimal. Copies of the booklet have been distributed to IICA member countries.

I take this opportunity to inform the delegates that a second Workshop is being planned for next year at a time and place not yet announced. The group will address Guidelines for the Release of the Products of R-DNA Technology into the Environment. As you will recognize this is a more difficult subject but one which must be addressed at an early date for in some countries there are products which are now, or soon will be, available for release and in some instances precautions should be taken to evaluate risks prior to release. IICA has asked the writer to be responsible for developing the working draft of the guidelines and plans are underway to convene the working group to consider this subject early in 1990. Should any of the delegates have comments on this subject, please bring them to the attention of IICA staff attending this conference or write IICA staff following the meeting.

I now turn to Biotechnology and Animal Health.

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Animal Health is an issue which is important to all of us, perhaps in some instances for different reasons; however, a healthy animal is apt to be one which has cost the producer less and one which in turn will be less costly to the consumer. Producers the world over are concerned about the health of their animals because of the economic and social costs of diseases including those transmitted from animals to man. In the last few years agriculture in general, including animal production, has moved from a resource based to a science based industry as science and technology have been substituted for land and labor. While this change is taking place all over the world it is happening faster in the developed than in the developing world. Technological changes are making animal production more efficient. The problems of over production which exist with some commodities in some countries are caused by different circumstances. Agricultural systems are adapting new protocols and technologies which allow them to be more efficient and competitive. Innovation is crucial to enhance productive efficiency and environmental acceptability. Biotechnology is one key to the innovation which is underway worldwide. Biotechnology has been defined variously and I will restate the broad definition from the glossary of the Guideline which I mentioned earlier. Biotechnology is the development of products by a biological process in which the production can be carried out by using organisms, such as yeasts or bacteria or by using natural substances such as enzymes from organisms.(1)

Biotechnology is not a new technology, what is new is the style of approach and methodologies now available. We can now tear microbes apart, take out pieces, insert others and understand its intricate system at levels which were not possible to dream about a decade ago. We can produce products in tissue cultures, animals and in microbes that it was not possible to imagine before. Eggs or ova can be removed from females, fertilized *in vitro*, incubated, split, re-inserted into females, removed and divided again to produce multiple births of animals all with identical characteristics. None of these tasks are easy, they require well trained people in well stocked and smoothly operating laboratories backed up by sophisticated infrastructures. Biotechnology is dependent upon a steady supply of chemicals, enzymes, solutions, sophisticated equipment and well trained scientists.(2)

In the time allotted to me I will review some of the areas of animal health and production where R-DNA studies have already brought about changes and where others are likely to occur. Genetic engineering is changing the way we create new plants, animals, vaccines and diagnostic tests. These developments did not occur overnight. They were a long time in coming. The first big event was the description of the molecular structure of DNA. This explanation gave us our first understanding of the chemical nature of genes which occur in all forms of life from simple viruses to complex things like trees, man or a whale. Just how tightly coiled the DNA or RNA must be in each cell is still difficult for most of us to comprehend; however, these chains or coils carry the whole plan of the organism and if we could read them we could produce wood, blood, bone, muscles or viruses. However, progress is being made, for example, the genome for man is expected to be deciphered by year 2000.

The second discovery necessary for R-DNA technology to take place was an understanding of plasmids, extra-chromosomal DNA contained in bacteria. Plasmids can be removed from bacteria, cut with enzymes, have genes spliced into them and returned to cells where they perform new functions for which they have

been programmed. They have become the workhorse of R-DNA technology. The third discovery was enzymes which cut DNA at prescribed places allowing genes to be inserted into genomes. These and other applications of newer methods of gene cloning and R-DNA technologies have provided powerful methods for the study of microorganisms.

Diagnosis of Animal Diseases

Traditionally, the diagnosis of animal diseases has relied upon direct examination of clinical specimens, cultivation of an infecting agent in an *in vitro* and occasionally an *in vivo* system, plus a variety of serological methods. These methods are frequently time consuming and in other instances may not be very accurate. Not all laboratories maintain lines of susceptible tissue culture cells and in other instances some agents are extremely difficult to cultivate. These problems associated with the traditional methods provide interests in more practical, expeditious and less costly methods of diagnosis. In addition, and of extreme importance, is the fact that few veterinary practitioners and not even all diagnostic laboratories are equipped to diagnose a variety of problems. Improvements in this situation are now feasible because of the availability of a wide array of diagnostic kits packaged and sold in a manner so that all one need do is to add the specimen to be tested. Kits, most of which are based on enzyme linked immuno-sorbent assay (ELISA) are available for testing for viral, bacterial and parasitic diseases, some of which are listed in Table 1.

Alternatively to kits, molecular techniques directed at the detection of microbial proteins, lipopolysaccharides or nucleic acids provide yet another alternative to cultivation of the microbe. In these cases it is only necessary to identify a specific molecule in a reaction with a molecular probe.

Most microbes have highly specific antigens against which antibodies can be produced. Antigen - antibody reactions can be completed in short order and in recent years with these highly improved diagnostic materials it has been possible to develop more specific assay methods for detection of a wide array of microbes. These tests include radioimmunoassay, enzyme assays, immunodiffusion, immunoelectrophoresis, agglutination, and immunofluorescence technologies. Some of these methods are not new, but the quality of the reagents has improved which in turn has improved their sensitivities. Most all of the above test methods have common faults and these are the kinetics of the antigen-antibody reaction, the limiting quantities of immunoreactants present in the reaction and the rate of non-specific reactions. For these reasons, tests not dependent upon the kinetics and binding characteristics of antibodies are needed. (3)

One non-immunological technique, available through R-DNA studies is nucleic acid hybridization. It is useful for the detection of microorganisms from clinical specimens and food products. It is based on the specificity of hybridization reaction, or simply stated, the strong binding between strands of DNA molecules with complementary sequences also known as hybridization. To be useful for diagnosis, the DNA probes must have 2 components, a detector and a reporter. The detector is obviously the fragment of DNA selected to hybridize

to a segment of the gene being sought. The probe can be from 15 to several thousand nucleotides. A marker component must be added such as radioactivity or fluorescence. The probe may be used to detect a specific gene or segment of DNA in its location in a cell or in a sample of DNA or segments. Probes may be designed to be specific or broad in their selectivity. Current uses include recognition of viruses, bacteria, prenatal diagnosis of genetic disease and for sexing of embryos. One specific example includes probes for detecting *Salmonella* in food products. While most probes are constructed with radioactive material, attention is being paid to developing alternative labeling procedures which do not require use of radioactive materials. These are a precipitate, a dye or fluorescence. The development of a probe is a very predictable straight forward reaction but it has yet to be extensively applied in clinical diagnosis in veterinary medicine. Thus far, its principle application is identification of organisms in food or mycobacterium in a carcass where in both instances it is causing striking changes in timely detection of these troubling organisms.(4)

The hybridization reaction is one in which single stranded or denatured DNA from one source will recognize and bind to specific sequences of DNA from another source. The process requires that a DNA extract or specimen be fixed onto a nitrocellulose filter, treated to denature the DNA which causes the strands to separate, addition of the labeled single strand or segment of DNA which binds to the suspect material. The matrix is washed to remove unbound probes and the examined for detection of color or radioactivity. An example of the probe technology appears in Figure 1 (5), and some applications in veterinary medicine of probe technology are listed in Table II.

Some clinical specimens contain too few organisms to be readily detected and require amplification prior to testing. A newly described polymerase chain reaction greatly increases the sensitivity of DNA probe tests. This enzyme reaction increases the sensitivity of the test because the DNA is replicated millions of times prior to application of the DNA probes. An instrument has been produced in which this replication takes place and it is described as an instrument which turns "DNA needles into stacks of hay."(6)

Monoclonal Antibody Technology for Diagnosis and Other Purposes

Tissue cells which grow in perpetuity, so called lines of cells are usually from cancerous sources and can be fused with other cells that have been primed to produce antibody. Such fused cells may produce antibody which is referred to as monoclonal because it is a homogeneous population of identical molecules, and is produced by a hybridoma resulting from the fusion of the single antibody producing cell with a cancerous cell. It has a high affinity only with a specific site, 6-7 amino acids long on the surface of the foreign antigen used to immunize an animal. The various uses for such antibody are not yet fully explored but include purification of antigens, analysis of antigenic sites on microbes, diagnosis and treatment of diseases.(7) They are especially useful in mapping the antigens of a microbe. Monoclonal antibodies have been used for mapping the antigenic sites of vaccine strains of influenza, rabies, polio, hog cholera, foot-and-mouth disease, bluetongue and herpes infections. Their use has increased because of the licensing of many diagnostic kits based

on M-ab. Their high specificity makes them less useful than polyclonal antibodies in initial screenings for diseases where there are multiple immunotypes. Perhaps one of the most promising uses is in the development of anti-idiotypic vaccines. Such antibodies have sites that mimic antigenic sites of the original antigen and they have potential as vaccines, especially after amplification in hybridomas or cloning and expressing in single-cell hosts.(8) One monoclonal antibody preparation has been licensed for use in the United States and Canada for treatment of calf scours. It is administered to the calf as a drench soon after birth and, thus, potentiates or supplements natural antibody in colostrum.(9)

In diagnosis, monoclonal antibody has been produced for tests for heartworms in dogs, *Babesia bovis* in cattle, leukemia in cats, leukemia in cattle, hog cholera, rotaviruses plus numerous others. Their greatest disadvantage is their inability to cross link when binding with an antigen, thus they are not useful in diagnostic tests where the reaction depends upon precipitation such as in agar gel tests. Assay tests using monoclonal antibody use radioactive labeling, ELISA or fluorescent labels to signify specific antigens. Table I lists several diagnostic kits which include monoclonal antibody for animal disease. Many, many more have been used for research purposes.

Vaccines

Immunization remains one of the most economical means of preventing specific diseases in animals. In some instances vaccines produce protection for life and overall offer benefits at comparatively low costs. There is much enthusiasm at present in hopes that additional improvement through the use of R-DNA technology will take place. Our knowledge of vaccines produced by this technology is undergoing constant change and can be linked to the use of probes for diagnosis as expressed by Yolken.(3) R-DNA technologies, when first applied to vaccines, it was thought, was an excellent idea from most points of view and there was a general sense of enthusiasm. Studies soon began to depict some limitations to the technology and we entered the disappointment phase but now I think a state of realism prevails. Some investigators think it is unlikely that all of the proposed advantages to vaccines produced by R-DNA technologies will take place. I am of the opinion we are now in the phase of realism where many, better and safer vaccines will be made through R-DNA technologies. This science offers for the first time vaccines for some diseases against which there were never vaccines such as the hemoparasitic diseases. It is doubtful that better vaccines will be made using R-DNA technology against all diseases so we should not throw away the products which have proven useful through the years. On the other hand, it is likely that unique products will be produced against many diseases and the application of these will result in decreasing effects of animal diseases.

At present there are many types of vaccines being produced experimentally by R-DNA technology Table III. These technologies include sub-unit products produced by cloning and by biosynthesis, organic synthesis of peptides, gene deletion or mutant living viral and bacterial products, vectored antigens in viruses or bacteria and anti-idiotypic products. While there are many different

types of products under investigation, in the United States three different gene deleted or mutant products have been licensed for pseudo-rabies in swine. In addition, vaccines for scours in calves and swine have also been produced through R-DNA technology applied to the *E. coli* enteric organism.(9)

Vectored Vaccines

Viruses and bacteria re-programmed to carry genes for the immunodominant surface proteins of unrelated infectious agents are being tested as experimental products. Vaccinia virus is the most commonly used vector for gene insertion. Other virus vectors include simian virus 40, bovine papilloma, adenoviruses, herpesviruses, baculoviruses and retroviruses.(10) In addition to vaccinia, other pox viruses under study as vectors include an attenuated strain of sheep pox, fowl pox and raccoon pox.(11) The most work has been done with vaccinia and in Table IV are listed some of the advantages and disadvantages of the use of vaccinia as a vector.(11) Pathogens against animal diseases vectored with vaccinia include rabies, vesicular stomatitis, Rift Valley fever, transmissible gastroenteritis of swine and rinderpest.

The baculovirus expression system propagated in cultures of moth cells has recently been shown by Inumaru et al.(12) to be a good system for producing proteins from bluetongue virus. In a more recent communication Roy (13) advised that segments 2 and 5 propagated in a baculovirus system and formulated into a vaccine using incomplete Freund's adjuvant protected sheep from challenge with virulent virus. Similarly, the G-1 and G-2 segments of Rift Valley fever virus propagated in a baculovirus system and formulated into a vaccine protected mice from infection with virulent virus.(14) Difficulties with this system include problems of purification of the protein following expression. Protection in livestock also need to be examined. A major advantage to this system would be the ease and safety of production. Rift Valley fever virus is infectious for man and must be investigated in P-3 or greater containment facilities. Such a vaccine would also have the advantage of not containing viral nucleocapsid proteins and serums from animals vaccinated with this product could be easily identified reducing confusion between immunized versus infected individuals.

Sub-Unit Vaccines - R-DNA and Organically Synthesized

Safe and immunogenic sub-unit or surface protein vaccines are being produced for many micro-organisms using R-DNA technology. Through molecular analysis and gene cloning, precise location of genes that produce antigens which immunize may be located. These genes may then be propagated in a variety of ways, the products harvested and then formulated into vaccines.

Chemical synthesis of peptides is another method used for production of immunogens. In this method, antigenic sites are found by screening small peptides encoded by the appropriate nucleotide sequence until immunizing activity is found. The production of peptides by this method is an exact science and such products are stable and safe. Differences in strains can be accommodated by substituting amino acids in the sequence.(15)

Sub-unit products suffer a major fault in that they do not mimic the native organism in producing a complete immune response. Whether this is due to failure of peptides to conform to the native structure or whether the peptides are not complete is still open to question. Several products produced by bio and organic synthesis at different locations have produced immunity in animals naturally susceptible to foot-and mouth disease virus. These are listed in Table V. In general, the organically synthesized peptides have been less protective in livestock than vaccines formulated from fusion proteins. The products which have been the most immunogenic are those in which the immunogen is in tandem or is repeated two to four times and is coupled to a fusion protein. While all such published reports listed in Table V are repeats of the same sequence, it is tantalizing to speculate on the results from fusion proteins from more than one type and sub-type of virus which may overcome the problems posed by the high mutation frequency of RNA viruses in general and FMDV in particular.(23) Such a product remains to be produced and evaluated in livestock naturally susceptible to the virus.

Hormones

Recombinant bovine, porcine and chicken growth hormones have been described in recent years. Supplementary dosages of bovine growth hormone (BGH) can increase growth rate of cattle from 10 to 40% and increase feed efficiency 5 to 15%. It enables food ingested by the cow to be converted into milk through nitrogen metabolism rather than by fat metabolism which is less efficient. This allows for increased milk yields with only a slightly increased food intake. Bovine growth hormone has been understood for 50 years, but before gene splicing the hormone used was limited because the only way to produce it was by extraction. New genetic engineering techniques have provided low cost sources. The potential market for BGH and similar products for swine and poultry in the near future are difficult to predict because of uncertainties of public acceptance. For unknown reasons, the problem of 3 dimensional folding that is critical for immune recognition has not had a similar effect on these groups of products. As I am sure most of you know, human growth hormone produced by gene splicing has been on the market for 2 years and has been well received especially since the product previously extracted from cadavers was shown to contain a so-called slow virus which causes Jakob-Creutzfeld in man. Several cases developed in the United States in recent years in which the source of the infection was traced to injections with natural hormone.

In this same category of products there is evidence that exposure of lambs prenatally to male testosterone alters their sex to male and results in a lamb that gained an extra pound per week on 16% less feed than normal female lambs in control groups. Animal scientists have known for years that male sheep are larger, grow faster and produce more lean muscle tissue without as much fat as females. At present, three doses are necessary, however, slower release mechanism are being studied.(24)

More news along the same line comes from observation that pigs produce a natural hormone called cholecystokinin (CCX) that tells it when to stop eating. When pigs are injected with a compound that neutralizes CCX, the pigs ate more and put on more lean meat than controls. The pigs are hungry so they continue to eat. We all know what happens when we do that.(25)

Follicle stimulating hormone, currently available by extraction from porcine pituitary glands has been produced by R-DNA technology and apparently can be produced competitively pricewise with the natural product.

Synthetic hormones added to feed or injected into pregnant sows can alter the date and time of parturition. With hormone treated sows, 60% of baby pigs were born during daytime insted of the usual 13%. Perhaps more importantly, births on week-ends was practically eliminated.

Embryo Transfer and Transgenic Animals

Methods for transfer of animal embryos are developing at a rapid rate, including the technology for the freezing of embryo. The best successes with frozen embryos have been achieved with bovine embryos. It is estimated that there were 150,000 bovine transfers in North America last year. Embryo transfer offers many advantages especially in moving germ plasm from one continent to another.(26) Were it not for the lack of information about the possibility of disease transmission by way of embryo transfer, the technology would be used more frequently to move germ plasm from one continent to another. This subject is being investigated at several laboratories, but there needs to be better co-ordination of it on an international basis. Regulatory and research officials from exporting and importing countries need to discuss their concerns, and assign priorities for research. The advantages of embryo transfer will be large if assurances can be given that diseases will not be transmitted in the transfer process. Specific advantages in addition to providing a basis for inexpensively moving germ plasm from one continent to another include methods for eradicating diseases from herds without loss of valuable blood lines, and promise of not introducing other diseases. The early results of research in the bovine leads one to conclude that viruses do not penetrate the intact **zona pellucida**, and if there is virus attachment in many cases, it can be washed off. In extreme cases, trypsin can ben put in one of the rinses. Sufficient information has been developed to show that the virus causing bovine leukemia and bluetongue can be washed off. Investigations are underway on bovine virus diarrhea, infectious bovine rhinotracheitis, foot-and-mouth disease, parvoviruses and rinderpest and early analysis are promising that these agents can also be removed by washing. Other developments in embryo technology include splitting and sexing. The embryo core already may be divided into four with good success on a regular basis, and the accuracy of the sexing of embryos is improving. As specific genes are identified one can expect to see efforts made to insert them into fertilized ova which will be expressed in the germ line of subsequent generations. In a limited way, this has already been done. Milk contains large amounts of protein, most of which consists of a few major species synthesized in the mammary gland. The genes encoding these proteins are single copy and are expressed during pregnancy and lactation. Although B galactoglobulin is the major protein in the whey of ruminants, it is not expressed in the rodent. Simons et al. quartered transgenic mice carrying the BGL genes and showed that in such mice, BGL is specifically and abundantly expressed in the mammary gland during lactation resulting in a marked alteration of milk composition suggesting that manipulation of milk composition by gene transfer has considerable potential for improving dairy animals.(27)

Transgenic mice, rats, sheep, cattle and swine have been generated, but all such studies are experimental except of the Harvard mouse.

The first patent for engineered animal issued in the United States last year. A patent granted Harvard University was for a transgenic non-human eukaryotic animal designed for use in cancer research. In the meantime, the issue is deadlocked in a U.S. Congress committee investigating the pros and cons of animal patents. I have read that 65 patents are pending including the rumor that one is a mouse that secretes tissue plasminogen activator in its milk. (28)

The feasibility of genetic farming of complex heterologous proteins that are extensively modified after genetic translation has been demonstrated. Insertion of exogenously rearranged IG genes into transgenic mice has suggested a new strategy for producing monoclonal antibody. These observations support the belief that larger transgenic livestock could be used for future production of certain medically important compounds. Transgenic mice support the belief that the composition of milk of cattle can be changed by gene transfer.

The impact of transgenic technology on basic studies in pathobiology, neurobiology, immunology and normal as well as perturbed development will be immense. The transgenic mouse is being called a "gold mine" for furthering knowledge in pathobiology.

Application of DNA Technology to Traditional Breeding

Livestock owners have traditionally kept their best animals for breeding, be it a milk cow that gives the most milk or the beef animal that weans the largest calf. Selections of this type have served us well but are time consuming and it is increasingly expensive to keep large numbers of animals for selection purposes. In addition, milk production and growth rates are complex traits, unlikely to be under the control of single genes. Current R-DNA technology, however, provides an opportunity to identify simple genetic polymorphisms that can be used as markers to predict inheritance of complex traits. This would permit selection of the so-called "best" animal before breeding. Close associations between simple traits and complex traits could lead to identification of major controlling genes. With the expected advances in gene transfer technology, transfer of economically important genes between animals will allow progress at a fast rate.

Public Concerns About Genetic Engineering

In the United States, it was the scientists themselves who first became concerned about the safety of R-DNA technology. A pioneering group met and recommended that R-DNA studies using tax money should be reviewed prior to being undertaken. A Recombinant DNA Advisory Committee was created at the national level and reported to the Director of the National Institute of Health. While this only concerned research using public funds, private industry agreed to comply voluntarily. Now, 13 years later, most R-DNA work at the laboratory

level is exempt, it having been shown in the meantime to pose no risk. Most researchers and regulatory officials are no longer concerned with laboratory studies but see some reason to regulate the products of R-DNA technology prior to release. In the United States these functions are regulated by the Food and Drug Administration, U.S. Department of Agriculture and the Environmental Protection Agency. At present, release of the products of R-DNA technology is considered on a case by case basis, however, there is the tendency to develop guidelines stipulating which products are free for releases and which products may pose a hazard and the release of which should be evaluated beforehand. This is an every changing subject which should be under continuing scrutiny at the national level of all countries where R-DNA studies are undertaken.

The Office of Economic Cooperation and Development recently issued a Biotechnology update on longterm impacts of biotechnology. During the last 2 years the range of application of biotechnology has narrowed, and it is no longer totally science driven. Products are increasingly focusing on market needs rather than scientific feasibility. Diversification is still highest in the pharmaceutical industry followed by agro-industrial companies. While in the food and feed sector there is weakness. In addition to better harmonization of patents, public confidence is a major factor in acceptance.

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Table I

Animal Disease Diagnostic Kits

canine heartworms	feline leukemia
bluetongue	sulfa drugs
Salmonella	aflatoxin
Listeria	parvovirus
pseudorabies	equine infectious anemia
pregnancy	immunodeficiency of foals
E. coli enteritis	several poultry diseases

Table II

DNA Probes Animal Diseases

Rabies	Johne's Disease
Salmonella	anaplasma
Campylobacter	bluetongue
pseudorabies	Listeria
foot-and-mouth disease	African swine fever
Babesia	rinderpest

Table III

Examples of R-DNA Vaccine Technologies

<u>Type of Vaccine</u>	<u>Disease</u>	<u>Status of Product</u>
Living virus vaccines virus-vectored	pseudorabies vaccinia-vectored rabies	Being extensively used. Public acceptance of safety.
bacterial living bacterial-vectored	Salmonella Salmonella	Being used. Being extensively experimented.
sub-unit-biological synthesis	hepatitis B	Extensively used.
sub-unit-chemical synthesis	foot-and mouth disease	Experiments underway.

Table IV

Pros and Cons of Vaccinia Virus Vected Vaccines

<u>Pros</u>	<u>Cons</u>
1. V ³ eradicated smallpox a. used in military recruits, 17 countries b. genetically stable c. T-cell immune response	1. Weak initial replication of V ⁴ vs. wild type a. Wistar rabies V ⁴ required virulent Copenhagen V ³ vector not used in U.S.A. NYBH strain would have to be used in U.S.A. b. No panacea. Polio doesn't work and no Abs in calves after revaccinations V ⁴ /HBsAg gene c. vaccinia virus/VSV G gene recombinant accident in human (Jones) d. further testing in animals and humans needed
2. V ⁴ research successes a. individual inserts b. multiple inserts to 25k bp	2. V ⁴ revaccinations a. several unanswered questions b. evidence for immunosuppression c. questionable efficacy in diseases with short durations of immunity, as in FMD
3. Easy ₃ production a. V ₁ , yes b. V ⁴ , probably c. V ⁴ alternate <u>in vitro</u> production for purified protein vaccine d. V ⁴ requires no adjuvant e. freeze-dry for 1 year at 38°C	3. Environmental release of replicating genome a. allows contact infection of immunodeficient individuals b. possible virulence for nontargeted hosts c. possible recombinations with animal or avian pox viruses to virulent or tumorigenic forms (as in myxoma and fibroma)
4. Easy application a. simulates live vaccines b. single dose c. biforcated needle d. multi-dose jet gun	4. Possible retention of V ³ side effects a. disseminated vaccinitis, 1/300,000 incidence b. encephalitis c. death, 1/1,500,000 incidence d. initial and revaccination scarrings
5. Eliminates large-scale animal cell and bacterial cultures and protein purification equipment	5. Question use of human virus vector for animal virus vaccines
6. V ⁴ probably not oncogenic and little or no integration into cellular genome	6. Dangerous for immunosuppressed individuals in prodromal stages of disease (e.g., early AIDS)
7. V ⁴ less virulent in mice than V ³	7. Variola virus will be destroyed world wide October 1987, with possible exception of one WHO site and one U.S.S.R. site

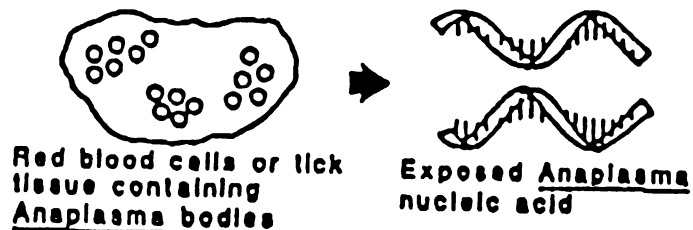
V³, vaccinia virus vaccine
V⁴, vaccinia virus vectored vaccine

Table V
Synthetic FMD vaccines which protect natural hosts

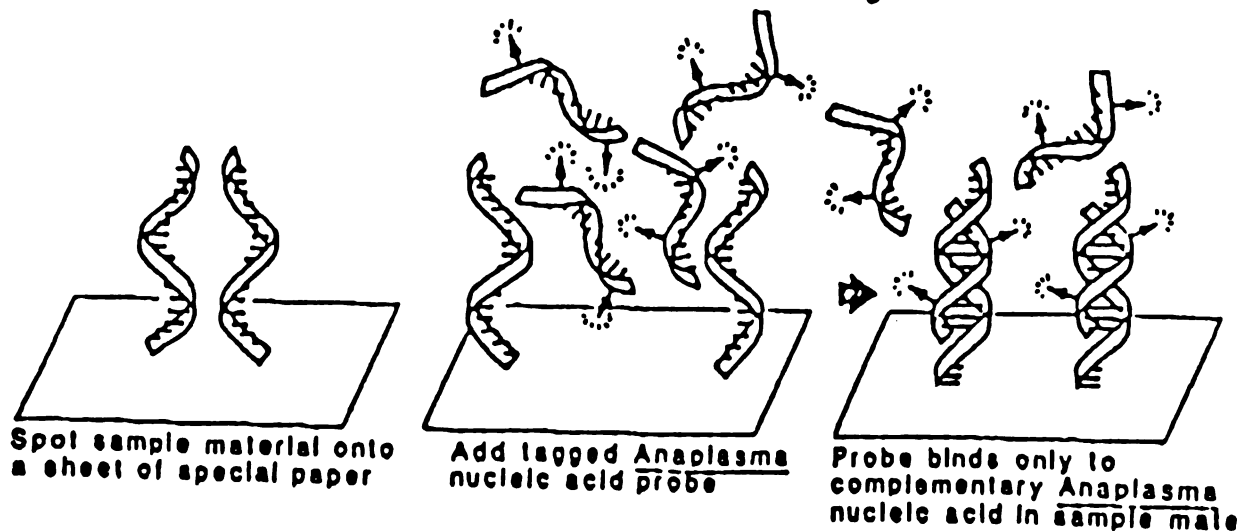
<u>Author</u>	<u>Method of Production</u>	<u>Virus</u>	<u>Type of Product</u>	<u>Protected</u>	<u>Results</u>
Kupperer et al. (16)	Biosynthesized	0-1	Fusion Protein	"	Protected 1/3 goats
Kleid et al. (17)	"	A-12	"	"	cattle and swine
McKercher et al. (18)	"	A-12	"	"	cattle
Kleid et al. (19)	"	A-12	"	"	"
Morgan et al. (20)	"	0-1	"	"	"
Di Marchi et al. (21)	Org. Synthesis	0-1	Chemical peptide	"	"
Broekhuijsen et al. (22)	Biosynthesis	0-1	Fusion protein	"	swine

FIGURE # 1
Nucleic Acid Probe Test for
Detecting Anaplasma marginale

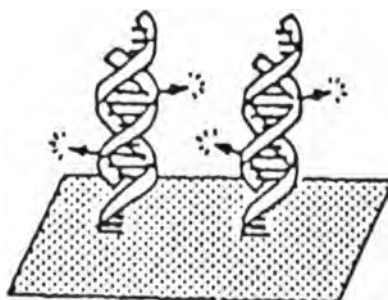
Process to Expose Nucleic Acids



Specific Nucleic Acid Binding



Detection



Wash off excess probe and develop for visible color reaction to identify binding of the tagged probe.

If Anaplasma is not present in the sample, the probe will not bind and no color reaction will develop.

J. GORHAM - WITH PERMISSION

IICA - DOCUMENT NO. 7

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PROGRESS REPORT OF THE ANIMAL AND PLANT HEALTH
MONITORING NETWORK FOR LATIN AMERICA
(RIMSAL)

James I. Moulthrop*

BACKGROUND

IICA has been mandated on several occasions by its member countries to develop or provide better information on economic losses due to pests and diseases for national agricultural decision makers. This was first proposed by the Eighth Inter-American Meeting of the Directive Council of IICA (Santiago, Chile, 1981) charging IICA's Director General to initiate a systemic data retrieval program for the analysis and diagnosis of the agricultural sector and to reinforce "the analytical capabilities of the Inter-American System." Several hemispheric and sub-regional meetings held between 1979 and 1983 made also proposals in relation to this resolution. Subsequently, in 1986 the Animal Health Plan for the Americas by the Year 2000 was approved by the Inter-American Commission on Animal Health and the Inter-American Board of Agriculture.

IICA, alone, is not in a position to gather the requested information for several reasons. The size of the land mass served and the number of countries in the hemisphere preclude that possibility. Information gathering on the farm is the domain of the individual national governments. It is a given that the individual nations of Latin America must become actively involved with some of their own personnel and financial resources to obtain the needed information.

WHAT IS RIMSAL?

In light of the enormity of the task, the Program of Animal Health and Plant Protection of IICA has proposed RIMSAL (Animal and Plant Health Monitoring Network for Latin America) as a method to satisfy the member states' desires though in a somewhat narrower context. IICA has gained the cooperation of USDA/APHIS which has provided the services of a veterinary epidemiologist. The terms of reference are to develop a system which provides information on farm losses associated with diseases and pests of both animals and plants. The system should be simple and flexible enough to be conducted in an environment which has limited laboratory support and limited sophisticated personnel resources. Further, a system must be developed which allows the exchange of information among all of the Latin American countries who wish to participate. The system must provide a data base of information which is current and easily accessed. In the long term, it must provide linkages with a similar system being developed by IICA in cooperation with the Canadian International Development Agency in the Caribbean Sub-region.

* Coordinator of RIMSAL.

The information network exchanges will be facilitated by the development of a standardized on-the-farm information gathering system, completed with a computerized data retrieval system, training, updating meetings of participants, newsletters and, eventually, an electronic mail capacity for timely exchanges of information.

The system must not conflict with current reporting mechanisms. It will, in fact, provide quantitative as well as cost data associated with lost production efficiencies due to diseases and pests of animals and plants.

The basic system will provide a factual basis for national decision makers to best use limited resources, to effectively seek internal and external funding to support campaigns and to develop strategies for control activities. The information will be of value to universities, research institutes, private companies and producer organizations within the individual countries.

In the long term, the information system developed will provide the framework and data for multinational actions to control pests and diseases of animals and plants, coordinated quarantines, regional responses to exotic introductions and the possibility of shared resources for the diagnosis and investigation of both endemic and exotic conditions. Because there will be multi-users from a wide variety of interest groups, provision is made for these groups in the design of the system.

RIMSAL is a two tiered system, made up of a standardized core component that will provide information of general use to major decision makers. Because of its standard and general nature, the information will be of interest to other countries and RIMSAL will provide the network for this sharing. Confidentiality will be assured to protect sources of information beginning with the farmer through the nation providing the data. By definition, the core component will be relatively inflexible in nature.

The second tier of the system, called Sub-sampling, will evolve after the first has been implemented. It will become obvious that the initial tier will provide many answers to questions of general nature and it will also point out the need for further, more specific information. Special studies will be the focus of the second tier of the system. These studies provide flexibility and the opportunity for special interests to participate in the system so that they may gain answers to their specific questions, provide their inputs to national policy and provide additional resources/funds for the common good. It goes without saying that special studies will cost additionally and that the beneficiaries of same will be expected to pay accordingly.

The design of the system calls for individual participating nations to select a national coordinator who will have the responsibility to manage the national program. He will be given training in the system and the national government will fund or seek outside funds to provide him with the resources to execute the program. The system is statistically based to minimize program costs.

After the selection of the species to be studied, a list of randomly based statistically selected premises will be developed by the national coordinator. The list will be given to specially trained interviewers. They will go to the

premises to determine if the premises meet the system requirements and that management is willing to participate in the study. Confidentiality requirements must be explained and the management will sign an agreement form which identifies the premises and assigns unique codes. This is the only time that the code and name of the premises appear together in the system and then only in part of the system. The form is retained by the interviewer in his personal files with no copies forwarded to anyone else. Only farm management will have the right to share information with anyone else.

At the time of management signing, or soon thereafter, an initial survey will be conducted to determine disease history, management practices and inventory of the animal or plant species in the study. Daily record forms will be left with management for recording events which will be summarized upon the return of the interviewer at the end of a time period, usually a month. The results of the summaries will be entered, by any one of several methods, into a computer under the control of the national coordinator for the participating country.

All forms will be pre-coded to facilitate computer data entry and designed as simply as possible for ease of completion by the interviewers when at the farm. Computer software packages will be provided by RIMSAL which will be as user friendly as possible. All system components will have been field tested to minimize errors before national use. All efforts will be taken to have a system developed which will be easily implemented at the national level.

At the time of the second monthly visit, and every visit thereafter, the farm management will be given a summary of the previous visit showing the individual premises in comparison with the averages of other groups in the study. The results of the summary will be discussed with farm management but care must be exercised that no recommendations are given in order that the study is not biased. If any recommendation is given and the farmer takes an action which he would not normally take, there would be a profound effect on extrapolations to the nation's total population. The only legitimate course of action would be to recommend the seeking of professional services by the farmer.

Several evaluations of the data will take place during and at the completion of the study. The results of evaluations will be widely distributed to any group or individual that may have interest in the study. Review procedures are built in the system to assure participation of as many interests as possible and that complete use of data is accomplished.

Results of studies should be of quality sufficient to publish in scientific journals, both nationally and internationally. Publication should be encouraged and RIMSAL will be in a position to provide for the sharing of national results with other Latin American countries if they are willing to participate.

Once a cycle has been completed the system is in a position to begin another study on the same species or another species of importance to the nation. The same personnel can be re-trained for information gathering in another species because specialists are not needed to drive the core system. This has inherent advantages in that non-specialists are less inclined and less

capable of offering advice and services to farm management than are specialists. This minimizes a bias that all statistical studies must avoid.

It is advisable to start small, make small mistakes and correct, accordingly, before a large study is undertaken to cover the entire country's population.

In any case, once a study has been completed, data collected will be relatively timeless. This is because the type of data is in a form not previously available and changes, whether by design or by accident, need up to a decade to take place. Little change takes place on the farm in a short while. This is advantageous to the system in that it allows time to bank data and to collect new data from other species in the time interval. Therefore, in a decade it is possible to collect data from as many as ten different agricultural species before having to repeat investigations on the first species studied.

If neighboring countries are willing to cooperate, as provided by RIMSAL, they could study ten different species each per decade and have virtually all species, animal and plant, studied which are economically important to them. This would provide each the luxury of having data for long term strategy development and the basis for common policy in matters of disease and pest control. It also provides an option to reduce each country's costs. Not to be forgotten in this scenario is the appeal to international funding agencies for agricultural development. They should be interested in funding projects that will give them better information upon which to fund projects and the opportunity to leverage funds with greater developmental impacts.

Once the core system has been established, the second phase, "Sub-sampling", can be instituted. There are several points that need to be kept in mind when considering Sub-sampling. Core confidentiality methodology must not be compromised. This is especially true when Sub-sampling will be conducted at the same time and on the same premises as the core study. Additional work incurs additional expenses. The beneficiary of the Sub-sampling should be charged accordingly. Agreement as to publication rights and coordination with other support elements need to be addressed before study inclusion. The Sub-sample should not compromise the core system in any appreciable way. None of these factors should be insurmountable or interfere with the cooperation among special interest groups in their quest for answers. This is especially true if the interests are for the nation's benefit and for the efficient use of governmental funds in disease and pest control activities at the farm level.

ACTIONS TO DATE

Since the arrival of the USDA epidemiologist in September last year, RIMSAL has been in a state of development. Systems, past and present, in Latin America and other parts of the world have been reviewed to see how they might be adapted to meet the terms of reference. Because of the need to respond to plant systems needs, the review has had to consider more than animal systems. A draft model system of use to both animal and plant systems has been conceptualized, developed, drafted and partially rationalized with computer software.

A modest field test has been conducted with the help of the Veterinary School in Costa Rica. Lessons learned from that exercise are being currently incorporated in a revision of the drafted forms to drive the system. At the same time, a computer specialist has been contracted to assist in rationalizing selected software packages for analysis of data and report writing. There is still much to do on this fundamental area for RIMSAL.

The first newsletter was published in May and it will be produced and distributed to interested parties at least three times each year. There is more than enough information to publish more frequently but time and money are limited. Future newsletters will feature cost/benefit studies related to diseases and pests of animals and plants. Personnel who are working with RIMSAL such as regional IICA specialists and cooperating international agencies and participating national coordinators will also be featured.

The very modest budget for the project and limited personnel have demanded the prioritization of workload and effort. To these ends and while drafting working papers, a questionnaire was sent to IICA regional animal and plant specialists to determine the perceived most important animal and plant species in Latin America. In addition, what were the most important diseases and pests of animals and plants. The specialists surveyed 18 countries' Ministry of Agriculture officials. The following countries responded: Argentina, Brazil, Chile, Costa Rica, the Dominican Republic, El Salvador, Ecuador, Guatemala, Honduras, Mexico, Panama, Paraguay and Uruguay.

The Table 1 and Table 2 show the result of the study and made it easier to focus on the animal and plant species that RIMSAL should first consider. In livestock, bovines were the most frequently named, by far. It was also clear that dairy cattle were considered to be more important than beef or dual purpose cattle. There did not seem to be any real difference among temperate, tropical and sub-tropical zones in the hemisphere. Latin America seems to want to improve its dairy animal health as a factor in improving production efficiency. This must be done in large part at the farm level.

These factors were taken into consideration along with the importance of public health, human nutrition and the fact that many of the responding countries have to use foreign currency to purchase supplies for domestic consumption. RIMSAL, therefore, started to develop a dairy system first.

In the plant area, climate played a much more important role in the perceived rank of plants. There were real differences among the climatic zones. However, it was gratifying to the author that plant authorities did not lose sight of the importance of food crops and their diseases and pests as impediments to production efficiency at the farm level. This was very clear in spite of the rush to develop non-traditional cropping systems as a means to generate foreign currency. Improvements in traditional systems, while not generating foreign currency, will reduce the demand for such currency.

RIMSAL's response to the questionnaire will probably be to select corn as the first plant species for system development. Corn is grown in all zones of Latin America, imported by several countries and is an important foreign currency generator in others. The currency consideration will also be important in this decision. This choice will be technically difficult to address

because of the extreme differences in cropping systems and the intended purpose for which the corn harvest is used.

FUTURE ACTIVITIES

RIMSAL plans to implement studies in a pilot fashion. At least one country in each of IICA's Latin American sub-regions will be asked to participate in a dairy study. Each will be asked to select a national coordinator before the end of this year. To the extent of available funds, training courses will be conducted to prepare the coordinators for initiation of the RIMSAL core system in their respective countries. For countries to participate, they will need to have or be able to purchase some computer equipment, provide office space and some travel money for training plus data collection.

Selection of pilot countries will be very difficult. This is because almost all of the countries surveyed expressed a desire to begin a system at once, if not sooner. The only real reservation expressed was the lack of funds to carry out the program. This is also a factor in RIMSAL's implementation strategy. There are only the coordinator and limited funds in this year's budget to conduct the program, therefore, there is a need to prioritize the workload.

It is felt that once pilot projects begin, funding will be easier to obtain, better support can be given to existing pilot projects and additional resources will be available to start with new countries. By the time results are generated from pilot projects, it is believed that external donors will be interested in supporting RIMSAL activities both at the national and the international levels.

By starting small and building on a well laid foundation, fewer and smaller mistakes will be made. Costs will be less. Success will demonstrate the need for and value of RIMSAL. By the time RIMSAL is prepared to begin with new members, there will be at least one more option to consider. A new core system for plant projects will be prepared and field tested.

Soon after original pilot countries have completed their first round of studies, there will be a need to implement the second tier of RIMSAL. This will probably require more time, travel and on-site guidance by RIMSAL personnel in order to implement and not compromise the core portion. This will necessitate additional prioritization of workload. Animal Health and Plant Protection Program will be using regional specialists' resources to assist in the implementation of the program. They will provide the program coordinator with important guidance and backup in the original pilot countries. They will, as well as, start new participating countries and implement of Sub-sampling procedures in the original pilot countries.

Between now and the end of the year, RIMSAL will develop materials for a training session, finish the rationalization process with computer software packages, and publish at least one more newsletter. It will continue to revise forms after field testing in Costa Rica and start form design for a system to collect disease/pest data for plants.

RIMSAL would appreciate any comments, recommendations and changes that COINSA delegates may have, now or at any time in the future. It, further, seeks COINSA's support in carrying out a project that member states have requested on several occasions over the last few years.

Table 1

MOST IMPORTANT ANIMALS, DISEASES AND PESTS IN LATIN AMERICA - 1988
(Answers from 13 countries of 18 surveyed)

<u>ANIMALS</u>	<u>DISEASES AND PESTS</u>
1. Cattle	1. Internal parasites
2. Swine	2. Vectorborne diseases
3. Poultry	3. External parasites
4. Equines	4. Brucellosis
5. Sheep	5. Classical Swine Fever
6. Goats	6. Mastitis
7. Others (cited 5 times or less)	7. Vesicular diseases
- Rabbits	8. Newcastle disease
- Bees	9. Rabies
- Camilids	10. Others (25 other diseases
- Cobayos	and pests were cited 4
- Fish	times or less)

Table 2

MOST IMPORTANT PLANTS, DISEASES AND PESTS IN LATIN AMERICA - 1988
(Answers from 13 countries of 18 surveyed)

<u>PLANTS</u>	<u>DISEASES AND PESTS</u>
1. Corn	1. Coffee rust
2. Rice	2. Fruit flies
3. Coffee	3. Worms (unspec)
4. Beans	4. Viruses (unspec)
5. Sugar	5. Fusarium
6. Banana/Plantain	6. Sigatoka
7. Sorghum	7. Bacteria (unspec)
8. Soybean	8. Others (20 other diseases and pests were cited less than 4 times)
9. Cacao	
10. Cotton	
11. Citrus	
12. Oil seeds	
13. Tobacco	
14. Wheat	
15. Others (other 25 plants were cited less than 3 times)	

PROGRESS REPORT OF THE
CARIBBEAN ANIMAL AND PLANT HEALTH INFORMATION NETWORK
(CARAPHIN)

Barry Stemshorn*
Theresa Bernardo**

1. INTRODUCTION AND OBJECTIVES

Caribbean countries have identified a requirement for improved information on diseases and pests which constrain the production and international marketing of crops and livestock.

In 1986 the Standing Committee of Ministers Responsible for Agriculture (SCMA) of the Caribbean Community (CARICOM), concerned about the importance of plant pests and diseases as a constraint on the regional and extra-regional marketing of agricultural products, mandated the CARICOM Secretariat to "collaborate with IICA to develop proposals designed to strengthen the national plant quarantine systems and to establish pest and disease information systems".

With regard to animal health, the Caribbean chapter of the Inter-American Commission on Animal Health, composed of Animal Health Directors of the Member States of IICA, resolved in 1984 to support the development of an animal health information system for the region.

The CARAPHIN project responds to these concerns by initiating development of an animal and plant health monitoring network to generate reliable data to improve decision making in the design and execution of projects, programs, policies and guidelines intended to defend and to increase agricultural production and trade.

Implementation of this four year project on behalf of the CARICOM Secretariat began July 1st, 1988, after it was endorsed by the SCMA in May, 1988. Funding from the Canadian International Development Agency (CIDA) and IICA is summarized in Appendix 1.

2. STRATEGY

A strategic plan was presented to a regional workshop in Port of Spain, November 17-18, 1988 (1). Participants were senior animal and plant health officials from 13 Caribbean countries, IICA staff, and consultants from North America and the Caribbean.

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In developing this strategy, we had to grapple with a host of issues, and in particular the:

- i. many and diverse information needs of:
 - plant health programs (fruits, vegetables, other)
 - animal health programs (dairy, swine, poultry, other)
 - Ministries, large farms, small farms and cooperatives
 - producers (costs of production, post-harvest losses)
 - exporters and importers (quarantine pests & diseases)
 - need to document national surveillance work
 - need information on surveillance activities and findings of trading partners
- ii. dynamic nature of the disease/pest information needs. These evolve with changes in trading pattern (e.g. US/Canada Free-Trade, and the EEC changes of 1992), and with biological events (e.g. recent arrivals of African desert locusts and giant snails, and the spread of Amblyomma tick)
- iii. limited budgets of:
 - national agencies (restraint and reductions)
 - this project (while substantial, the IICA/CIDA funds are not replacements for national programs, and are relatively modest when considered against the scope of information needs identified above)
- iv. high costs and problems experienced with national disease/pest monitoring systems in North America
- v. related activities of other agencies (FAO, OIE)

Our strategic plan is set out in recommendations of the 1988 Workshop which address two broad objectives.

The first objective is to **strengthen the human resource base for disease and pest monitoring** by developing a Caribbean Animal and Plant Health Information Network (**CARAPHIN**). The network will seek to improve investigative skills and to disseminate information and techniques through annual courses, a regular newsletter, consulting and other special support activities of a central office, and by supporting a limited number of model projects on topics of regional importance. The Workshop agreed that, in the first instance, projects be initiated on one topic dealing with animals and on one topic with plants. An Advisory Committee named by the Workshop (Appendix 2) identified four priority plant and animal health issues for early attention (Appendix 3). Of these we now propose to select dairy production and fruit fly surveillance for the initial activities.

The second broad objective is to **develop a regional surveillance system** for pests and diseases of interest to CARICOM member states, Suriname and Haiti. For the most part, these will be pests and diseases which influence

international trade. Our proposed starting point is to establish a system for reporting on existing surveillance activities, and to build from there in accordance with priorities to be identified by the regional Directors of Plant and Animal Health.

3. OUTPUTS

- i. A system for reporting on surveillance activities for top priority pests and diseases of trade significance in eleven countries (Antigua & Barbuda, Barbados, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Lucia, St. Vincent & the Grenadines, Suriname and Trinidad & Tobago).
- ii. Personnel trained in epidemiology, data collection & analysis and in the use of microcomputers.
- iii. A centre of expertise in Trinidad & Tobago to support implementation and development of the network through information exchange, consultation and training.
- iv. Approval of supplemental proposals would extend the project to Belize, Montserrat and St. Kitts/Nevis, provide additional training in meat inspection, laboratory work and quarantine procedures, and otherwise strengthen the ability of national agencies to monitor pests and diseases.

4. ACTIONS AND RESULTS TO DATE

i. Goal: Review, assess & adapt methods; install headquarters

Plans for the project were formulated in consultation with national officials, and with input from leading experts in this field, at a regional Workshop in Port of Spain, November 17-18, 1988. In accordance with the wishes of the SCMA, funds were obtained from CIDA through Agriculture Canada for the participation of Belize, Montserrat and St. Kitts/Nevis in this inaugural event. The proceedings of this workshop have been published (1).

With regard to the goal of developing a regional surveillance system, draft procedures for reporting on regional disease/pest surveillance activities have been prepared, in consultation with FAO and plant protection authorities from the University of the West Indies. These would involve quarterly reports of surveillance activities and findings for a priority list of animal diseases and pests of quarantine importance. In the animal case, we propose to adopt the codes used by the FAO and OIE, to facilitate preparation of national reports to these agencies. The Caribbean disease list will be a modification of OIE lists A, B & C that will include those diseases of greatest interest to the region. In addition to providing this focus on diseases

of concern to the Caribbean, the proposed surveillance reports would be more frequent (proposed quarterly) than the OIE/FAO annual report, and would contain additional information on the intensity of surveillance activities as well as the method(s) (i.e. test, clinical signs, etc.) used for identifying a positive case. The proposed disease list and reporting procedures were considered in detail during the Caribbean sub-regional meeting yesterday.

Turning to the use of model projects for the development of investigative skills and tools suited to regional circumstances, proposals for project selection have been developed and submitted to the Advisory Committee. In considering the four priority animal health topics identified at the 1988 Workshop, we found that two could be addressed by means other than the model projects. The monitoring of zoonotic diseases will be covered in part by the inclusion of these three diseases (brucellosis, leptospirosis and tuberculosis) in the region-wide surveillance reports. We hope to address the need for improved slaughterhouse monitoring procedures through a training initiative for which we are seeking supplemental funds.

Of the two other topics, namely dairy and meat production, we propose to work first on dairy, the top priority identified by our Advisory Committee in November, 1988, because of its importance to the more populous and least advantaged countries. At the same time, the importance of the production of meat from small stock is recognized throughout the region. Thus we will strive to initiate project activities on this topic at the earliest opportunity, hopefully before the completion of year two (July, 1990).

During our travels in the region, we identified two dairy projects which we feel have the attributes required to meet selection criteria established at our 1988 Workshop. These are the Small Dairy Farmer's Scheme operated by the Serge Island Dairy in Jamaica and a "Wetland" Dairy Production Project being conducted by the IICA Office in Guyana, and soon to be extended to Suriname. These projects are considered against our selection criteria in Appendix 4.

On the plant side, our proposal is to provide support for the design and data management activities of mango seed weevil and fruit fly surveys that are under way or planned by several countries.

The intent of CIDA to direct support to the least advantaged countries and to small producers would be addressed by the proposed model studies involving very small dairy farms in Jamaica, Guyana and Suriname. The OECS countries will have a particular interest in the mango seed weevil and fruit fly studies.

Headquarters for the project was established at the IICA Office in Trinidad & Tobago and is currently staffed by one IICA specialist (Barry Stemshorn, project coordinator), a CIDA-funded epidemiologist from the University of Guelph (Theresa Bernardo), and our project secretary (Francilla Stewart).

ii. Goal: Training of national personnel

The 1988 Workshop and its published Proceedings (1) introduced senior national officials to the thinking and experiences of world leaders in the field of disease and pest monitoring.

The first edition of a regional animal health and plant protection newsletter is in press. **CARAPHIN News** will disseminate technical information on a variety of matters related to pest and disease monitoring.

Some in-service training activities have already occurred. For example, personnel in Guyana, Jamaica, Suriname and Trinidad & Tobago have been given initial introductions to the use of PANACEA* software for managing dairy health & production and fruit fly survey data.

iii. Goal: Implementation

Specifications for the procurement of microcomputers and printers for the eleven national units and the regional centre were prepared and submitted to Agriculture Canada.

First versions were prepared of computer routines for managing data from fruit fly surveys and for reporting on surveillance activities for selected animal and plant diseases and pests.

Recommendations on a draft protocol for mango seed weevil surveys were prepared for the FAO's Regional Plant Protection Specialist. A proposal for a statistically sound sampling system that could reduce the cost of surveys has been submitted for consideration by FAO and USDA.

The project organized a one day regional meeting following the arrival of Desert Locusts in the Caribbean (2), and obtained emergency funding to assist the locust surveillance and control work of ten countries.

Support was provided to regional surveys for bluetongue and caprine arthritis encephalitis.

iv. Goal: Institutional Strengthening

The project has brought the support of two Canadian veterinarians to IICA's Animal Health and Plant Protection Program activities in the Caribbean and has introduced microcomputers and training in their use to the IICA Office in Trinidad & Tobago. The strategy for implementation of the reporting system and other **CARAPHIN** activities will extend expertise in the use of microcomputers and in epidemiology and disease monitoring to national institutions in all of the participating countries.

* PAN Livestock Services Ltd., Reading, UK.

5. CONSTRAINTS

National officials indicated their commitment to the goals of the project at the 1988 workshop. However, it must be noted that all of the national agencies are faced with severe resource constraints and consequently their contribution of personnel and financial resources will be limited. This was an important consideration in arriving at the recommendations of the Workshop and in selecting model projects. Our solution is essentially to build upon surveillance or monitoring initiatives that are already under way or planned in the participating countries and which are therefore likely to be allocated operating funds and manpower by national agencies.

6. FUTURE ACTIONS PROPOSED

Planning is under way for the first major training activity which will be a two week course on principles of disease/pest monitoring and the use of microcomputers to be held Sept 11-22, 1989, at the St. Augustine (Trinidad & Tobago) Campus of the University of the West Indies. Two trainees will be invited from each of the 11 participating countries (Antigua & Barbuda, Barbados, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Lucia, St. Vincent & the Grenadines, Suriname and Trinidad & Tobago).

A micro-computer, software and supporting materials will be provided to each of the participating countries through their IICA Offices. Target for delivery is August, 1989.

Draft procedures for region-wide reporting of disease and pest surveillance activities will be presented this week for review by national officials at the Caribbean Sub-Regional Committee of the Inter-American Commission on Animal Health (COINSA). We hope to hold a similar session at a regional meeting of the Technical Advisory Committee of Plant Protection Directors later this year.

Once the regional reporting system is in place, it will provide a framework for coordinated initiatives to strengthen regional pest and disease surveillance activities, with priorities being identified at COINSA sub-regional meetings.

Implementation of the initial model projects will begin later this year in Jamaica, Guyana and Suriname (dairy) and Trinidad and Tobago (fruit fly survey).

A proposal has been made to FAO that CARAPHIN provide national authorities with access to an electronic database on Caribbean Plant Pests and Diseases prepared by the Caribbean Plant Protection Commission. It is expected that a module on this database will be included in the September, 1989, training seminar.

A second edition of **CARAPHIN** News will be published in 1989. We plan to publish this newsletter bi-annually thereafter. In addition, the **CARAPHIN** office in Trinidad will serve as a base for publication and/or dissemination of other materials related to disease and pest monitoring, such as meat inspection training materials produced by Agriculture Canada, foreign animal disease diagnosis training materials produced by USDA, fruit fly trapping manuals written for the USDA, and video tapes on livestock production and slaughter methods produced by the Sugar Cane Feeds Centre, Trinidad and Tobago.

Approval of supplemental proposals would extend the project to Belize, Montserrat and St. Kitts/Nevis, provide additional training in meat inspection, laboratory work and quarantine procedures, and otherwise strengthen the ability of national agencies to monitor pests and diseases.

Proposals will be developed for the transfer of **CARAPHIN** to a suitable regional agency that would ensure that **CARAPHIN** continues to function after the four year term of this project.

8. ACKNOWLEDGEMENTS

We wish to acknowledge the contributions and collaboration of the following agencies:

Agriculture Canada

Canadian International Development Agency

Caribbean Agricultural Research and Development Institute

CAB International Institute for Biological Control

Inter-American Institute for Cooperation on Agriculture

Ministries responsible for Agriculture of the participating countries:

Antigua & Barbuda

Jamaica

Barbados

Montserrat

Belize

St. Kitts/Nevis

Dominica

St. Lucia

Grenada

St. Vincent & the Grenadines

Guyana

Suriname

Haiti

Trinidad & Tobago

Organismo Internacional Regional de Sanidad Agropecuaria

Serge Island Dairy, Jamaica

Sugar Cane Feed Centre, Trinidad & Tobago

University of Guelph

University of Florida

University of North Carolina

University of Prince Edward Island

University of the West Indies

University of Wisconsin

United Nations Food and Agriculture Organization

United States Department of Agriculture

9. REFERENCES

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2. Desert Locusts in the Caribbean. Proceedings of a Regional Meeting, Port of Spain, Trinidad and Tobago, November 16, 1988. Edited by Barry Stemshorn. IICA Miscellaneous Publication Series, ISSN 0534-5391 A2/TT-89-01, 68 pp.

Appendix 1

**Funding for the Caribbean Animal and Plant Health Information Network
(CARAPHIN)**

Budget Summary:

CIDA:	1988	\$US	73,000		
	1989		208,000		
	1990		46,000		
	1991		58,000	Sub-Total:	385,000
IICA:	1988		106,000		
	1989		106,000		
	1990		125,000		
	1991		131,000	Sub-Total:	468,000
				Total:	\$US 853,000

Appendix 2

Advisory Committee Members

Dr. Eslie Alleyne (Barbados)

Dr. Lennox Applewhaite (Guyana)

Dr. David Ellis (Jamaica)

Dr. Vincent Moe (Trinidad and Tobago)

Dr. Joseph Robinson (OECS)

Dr. Robert Lieuw-a-Joe (Suriname)

Appendix 3

Short Lists of Priority Topics

Plants: 1. Fruit fly surveillance

2. Desert locust surveillance

3. Mango seed weevil surveillance

4. Citrus virus indexing

Animals: 1. Factors constraining milk production

2. Factors constraining production of meat from small stock

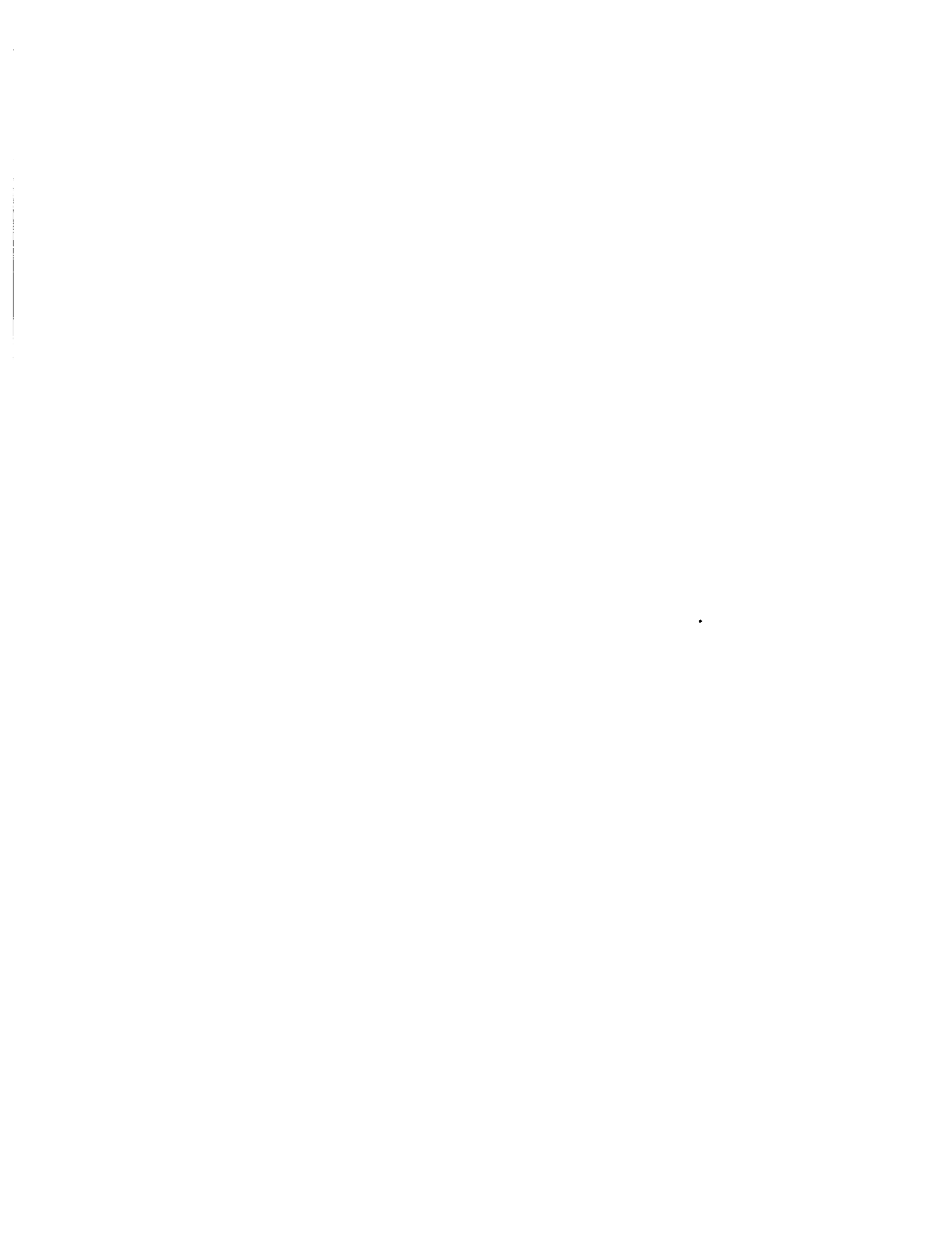
3. Tuberculosis, Brucellosis and Leptospirosis

4. Slaughterhouse surveillance

Appendix 4

Assessment of Proposed Dairy Projects

Criteria	Serge Island, Jamaica	Guyana & Suriname Wetland
Feasibility with available resources	Large dairy provides extension and veterinary services to very small farms; has computers for record keeping; offers model for ongoing activity with quasi-private sector funding	IICA project provides personnel to collect and analyse data in Guyana; farmers already keeping records; good prospects for external funding for extension to Suriname
Impact	Supports over 30 small farms with 2-5 milking head (average about 3 head); model and methods could be applicable in several other countries where large private or state farms or Cooperatives could support small farms in their area; covers dry/wet season ecosystem	The Guyana project has successfully applied new and appropriate production technologies in a wetland ecosystem; the proposed extension to Suriname is the basis for the national dairy strategy in that country
Plans for use of the information	Extension services in place for providing feedback to the small farms; model may be applicable elsewhere (e.g. Alcan in Jamaica, Caroni in Trinidad, Cooperatives in all countries)	Projects in Guyana and Suriname have staff to analyse data and to feed information back to producers
Scientific design	This will be addressed during development of procedures	Idem; uses established parameters for measuring production and reproductive performance
CIDA priorities	Addresses need of very small farms; good female participation in the project team at Serge Island	Addresses needs of least advantaged country (barring Haiti)
Breadth of Regional Interest	Model applicable to other countries with dry/wet ecosystem	Model applicable to wetland ecology of Guyana and Suriname



REPORT OF THE HEMISPHERIC SWINE FEVERS SURVEILLANCE SYSTEM

Enrique E. Rieger, DMV, PhD*
Michael Bedoya, DMV, PhD**

I. INTRODUCTION

The eradication of African Swine Fever in the Dominican Republic, Haiti, Cuba and Brazil was an evident result of regional cooperation through the joint action of national and international institutions and organizations. Due to the good attitude of entities involved in the fight against this disease and also to the responsibility and effectiveness of the professionals who take part in it, the Americas were free from one of the most terrible diseases affecting hog production in the world. This was an exemplary fact, since up to then no continent had been able to free its territory from this disease. In spite of its economic and technological power, only after Spain and Portugal became part of the EEC, Europe has considered the possibility of eradicating African Swine Fever, despite the diffusive potential of this disease has been clearly shown out by the outbreaks both in Holland in 1985 and in Belgium in 1986. Portugal reported 672 outbreaks officially in 1986 and 645 ones in 1987, and Spain reported 393 ones in 1986 and 793 in 1987. This means that the amount of outbreaks has risen twice, at an average of 66 outbreaks a month, 15 a week and 2.2 daily, all this giving clear evidence of the fact that eradication and surveillance actions need joint efforts. Unfortunately, several indicators show the weakening of prevention and surveillance measures in Latin American countries, due essentially to the economic constraints suffered by most of these countries which reflect in an outstanding reduction in staff and operative resources previously devoted to animal health and now used by force in the solution of more immediate problems. This situation that is also suffered by the international organizations has caused a new evaluation of strategies in order to take more advantage of the scarce available resources, this in turn needing both a strict technical and economic program evaluation and a more close cooperation among the different institutions involved.

In order to face this situation and according to the guidelines included in the Agreement signed by their Directors in 1983, the Inter-American Institute for Cooperation on Agriculture (IICA) and the Pan American Health Organization decided to put in practice a surveillance program for swine diseases using the infrastructure of IICA and the experience of the Foot and Mouth Disease Pan American Center. After some meetings and agreements, in November 1986 it was started a system that reported weekly the suspicious cases of these diseases.

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** Animal Health and Plant Protection Coordinator, IICA-Brazil.

Every country carries out surveillance actions, according to its infrastructure and to the system it has established. The suspicious cases are reported weekly to the local IICA Office by phone or by the most immediate way. This report is sent to IICA Office in Brazil by electronic mail through computers or telex and in this office it is integrated in a summary which in turn is sent to every IICA Office or directly to the Governments. The report indicates the country where the outbreak occurred, the week reported and the quadrant or coordinates on report, in accordance with the system established for vesicular diseases by the Foot and Mouth Disease Pan American Center. This summary is also published in the Surveillance Weekly Bulletin of the center in order to give it as much dissemination as possible.

II. GENERAL ANTECEDENTS OF THE SURVEILLANCE SYSTEM

The 1987 summary about the situation of hog cholera, about population and the differences stated between 1980 and 1987 was prepared in accordance with the FAO-WHO-OIE Yearbook (Table 1). The total 1987 hog population of the continent was 145.515.000 heads, 4% less than that of 1980, which had been registered as 152.710.000 heads. The hog population of the Northern Region (comprising Canada, the United States and Mexico) is the largest, amounting to 82.933.000 heads (57%). Latin American has a total population of 80.439.000 heads (55.3%). The Andean Region registers 13.952.000 hogs (9.6%); South America, 53.018.000 heads (36.43%), not including French Guyana, Guyana, and Suriname. The Southern Region has 7.066.000 heads (26.8%). Central America amounts to 3.022.000 heads (2.1%), a total which includes the population from the six countries of this region. The Caribbean and the Guyanas have 6.542.000 hogs (4.5%). 51.10% of the total hog population belongs to countries infected by hog cholera, and 48.9% to countries which are free from this disease.

The difference in population between the years 1980 and 1987 for each region was the following: in Latin America, it grew 7%; in the Caribbean 33%; in the Andean Region 21%; in Central America 13%; while in the Southern Region it lost 3% and in the Northern Region 8%.

As regards Latin American, Brazil has 39% of the total hog population; Mexico 23%; the five countries of the Andean Region 17%; the Southern Region countries have 9%; the Caribbean countries, 8% and the Central American countries have 4%.

As regards South America, Brazil has 60.4% of the total hog population; Ecuador has 57.1% of the Andean Region hog population and as regards the Southern Region, Paraguay owns 23.9% of the total hog population. The United States have 64.15% of the Northern Region total hog population; the Dominican Republic has 47.7% and Cuba has 36.7% of the Caribbean hog population.

The total livestock capital of each country may be expressed as Homogeneous Animal Units (HAU). A HAU comprises one bovine, one equine, five hogs, five ovines, five goats or a hundred fowls. The total livestock capital of the American Continent is estimated in 627.9 million HAU. The total hog capital is 30.02 million HAU. Hogs represent 8% of

the total livestock capital of the Northern Region. They are 5.7% in the Caribbean; 4.3% in Central America; 4% in the Andean Region and 1.4% in the Southern Region. The percentual value of hog population is 4.7% in the Hemisphere and 3.6% in Latin America.

If the unit price of each hog is estimated in US\$35, the value of hog capital is estimated to be US\$3.151.000.000 in the Northern Region. Hog population is US\$1.216.000.000 in Brazil; US\$530.000.000 in the Andean Region; US\$248.000.000 in the Caribbean and US\$114.000.000 in Central America. The total hog capital amounts to US\$5.529.570.000 in the whole Hemisphere.

The hog population density per capita that can be expressed through the availability of pork meat or through the alimentary habits is 0.28 in the Northern Region; 0.15 in the Caribbean; 0.12 in Central America; 0.16 in the Andean Region and 0.115 in the Southern Region.

III. SUMMARY AND ANALYSIS OF THE 1987 SITUATION BOTH GLOBALLY AND IN EACH COUNTRY

1. Bolivia

There was no report to take care of during the first year the country was part of the System. No news during 52 weeks.

2. Colombia

During the 44 weeks informed, there were suspect reports in 19 of them, covering a 20 quadrant surface that represented 5.2% in eleven Departments with 22 reports. The quadrants where there were more frequent reports were 0546 and 0841, there quadrants belonging to El César and Córdoba Department, respectively.

Reports were received in eleven of the thirty Departments of Colombia. The Antioquia Department had four reports in four different quadrants. It was followed by the Córdoba, El César and La Guajira Departments, each of this reporting three cases.

The quarterly distribution of the reports was five (23%) from November to January; eight (36%) from February to April; three (14%) from May to July and six (27%) from August to October. The semestral distribution was 13 (59%) and 9 (41%), respectively. This behavior pattern may be due to the climatic conditions (drought/rain), available resources, transit or any other conditions that might require a better knowledge about the country and also a more extent observation period.

3. Ecuador

There were no reports in three quadrants during three of the 52 weeks informed. It could not be identified to which province one of these quadrants belonged. There exist technical measures for controlling this disease both in Ecuador and in all the countries that compose the Andean Region. The guidelines for said control have been included in Decision No. 152 of the Cartagena Agreement Committee.

4. Peru

Nine reports in eight quadrants were informed. The semestral distribution showed 7 reports (78%) during the first semester and two reports during the second semester. It was not possible to identify the Department in every quadrant reported, as it did not correspond to the numbering in our map, all this not allowing to prepare a frequency table. The total of confirmed foci was six, four of them in Loreto Department, one in Lima and one in Lambayeque.

5. Venezuela

There were two reports during the 52 weeks informed. One of them was in Zulia State -the quadrant was not specified- and the other in Yaracuy, quadrant D 10.

6. Paraguay

There were reports in three of the 52 weeks reported. Two of them occurred in Concepción Department and the other was divided between Caaguazú and Conendiyú.

7. Chile

This country has begun a great effort in order to eradicate hog cholera. Every 1987 week was informed without any case reported.

8. Uruguay

In 1897, Uruguay suffered from a classic or hog cholera epizooty, that began in late December and continued up to February. There were 42 reports, 19 of them (45%) in five quadrants from the Canelones Department, which was responsible for a total of 29 (69%) reports.

The weeks when more cases were reported were No. 2 (7 reports: 16%); No. 3 and 5 (5 reports each: 12%), totalizing 23 (55%) during January and February. In the quarterly distribution figure (Figure A), it can be observed that the first quarter (November to January) was responsible for 21 reports (50%), the second one (February to April) gradually descending to 13 reports (31%) and the third and fourth quarters drastically descending to 3 (7%) and 5 (12%), respectively. The first semester (November to April) showed 34 reports (81%) and the second one, 8 (19%). The confirmed foci were 82, having similar percentual values, as Canelones registered 57 confirmed foci (69.5%) and then Montevideo, that registered 13 ones (15.8%). Lavalleja showed 3 foci and no report, as well as Rocha and Soriano with one focus and no reports. The detailed information sent by Uruguay allowed to enlarge the list of foci in order to include the number of cases and of dead animals in some of the confirmed foci. On account of these data, it can be deducted that the percentual mortality value was 62% in the 51 foci about which there was enough information, being the average 32.6 ill hogs and 20.6 dead hogs per focus. Finally, it must be emphasized that even though quadrant L26 showed a total frequency of six reports, these ones were distributed among weeks No. 2, 5, 9, 10, 32 and 41, the virus persistence being showed by this distribution.

9. Brazil

There were reports in 31 weeks and 14 weeks were informed without reports. Due to the report volume, the analysis must take into account both reports and foci.

a. Reports

Reports are concentrated in five States (Paraná, Rio Grande do Sul, Santa Catarina, D.F. and Minas Gerais), which are the States part of an agreement of immediate weekly notification. 45% of Brazilian hog population is concentrated in these States, as well as most of the organized farms, which are responsible for 73% of commercialized meat. This explains also the great possibility for Paraná and Rio Grande do Sul to have reports in 1988. The report average was 2.97 a week and 3.13 a quadrant. Paraná was responsible for 67% of the reports, and according to the frequency table, 45 reports (that is, 41% of Brazil total reports and 61% of Paraná State total reports) were concentrated in six quadrants. Quadrant 3267 had several reports distributed in different weeks. This also suggests a focal persistence to concentrate actions. The semestral focus distribution shows an important difference, as there were 20 reports during the first semester (November to April) and 90 during the second one (May to October), which represented 18% and 82% respectively. Increase was gradual from the first to the second quarter, important from the second to the third and drastic from the third to the fourth.

b. Foci

237 confirmed hog cholera foci were reported in Brazil, distributed among 14 States. Most of these arrived some time later, not existing immediate notification. Rio Grande do Sul held the first place, reporting 43 foci (18%). It is supposed that this may have some connections with the epizooty occurred in Uruguay, because from December to May, 27 of 43 foci were confirmed in Rio Grande do Sul and 70 of 82 foci in Uruguay. Paraná State confirmed 41 of 74 foci reported, and Santa Catarina, 14 of six. The Federal District, where Brasilia is located, was in big trouble if its hog population and its geographic area is to be taken into account.

There is also a great possibility for new foci to appear in Rio Grande do Sul, Paraná, Ceará, F.D., Pernambuco, Sao Paulo and Santa Catarina States in 1988, if conditions are similar to those of 1987. The quarterly distribution shows a drastic rise from the first to the second quarter (20 to 72 foci), descending a little from the second to the third quarter and reaching the maximum during the fourth quarter (82 foci: 34.6%). 92 foci (39%) are observed during the first semester and 145 (61%) during the second one (May to October).

10. Guatemala

Guatemala reported 42 weeks, beginning in January. There were reports during 37 of these weeks. These figures reflect the intense work developed in Guatemala by the Animal Health Project financed by the International Development Bank (IDB). 18 foci (that is, 15.25%) of 118 reports were confirmed in laboratories. Quadrant 2144 was

responsible for 25 reports (21.2%), only one of them confirmed in a laboratory. Nevertheless, the five reports of quadrant 2239 resulted in confirmed foci: this means 4.24% of the reports and 27.77% of the total foci. These five foci were distributed along all the weeks, showing the focal persistence of this disease. Said persistence is also shown by the distribution in Departments, because there were 31 reports (26.3%) in Zacapa and 6 of the 18 reports confirmed in laboratories occurred in Guatemala.

The semestral distribution was 31 (26%) during the first semester (November to April) and 87 (71%) during the second one (May to October). The first quarter showed 8 reports (7%), rising to 23 (19%) during the second one and to 47 (40%) during the third one, descending then to 40 (34%) in the fourth one (August to October). Three (19%) were confirmed during the first semester and 13 (81%) during the second one.

11. El Salvador

There were reports in 8 of 30 weeks informed by El Salvador. Only in one of the 11 quadrants (quadrant 1028) there were repeated reports. There were three reports in La Libertad and San Salvador Departments, which concentrated 54% of them. The 11 quadrants reported represented 4.41% of the total, which is similar to that of other countries. The quarterly distribution was 0, 5, 1 and 5, and the semestral distribution was 5 and 6.

12. Honduras

Honduras informed 43 weeks, two of them having reports. Unfortunately it was not possible to locate the quadrants in the map according to the keys received by telex. Consequently, it was not possible to identify the corresponding Department.

13. Mexico

During the first year, Mexico informed 52 weeks, seven of them showing a report. Quadrant 1366 from the Jalisco State was the only one with two reports. The quadrant percentage was 1%, which is lower than in most of countries, probably because of the few reports received and of the extension of the territory, that is, of the quantity of quadrants in Mexico. The reports correspond to eight States, representing this 18.15%.

The semestral distribution indicated seven reports from November to April (87%) and only one from May to October. The quarterly distribution showed a gradual decline, as the first quarter was responsible for most of the reports, that is, a total of five; the second one was responsible for two; the third for one; and the fourth for none.

Summary and analysis 1987

In Table 2 it is summarized the frequency of the confirmed reports and foci.

6.7% of the reports and 7.6% of the confirmed foci were from Colombia, which has 3% of the hog population of the countries infected with Hog Cholera. The proper distribution and the punctual sending of the reports show an efficient and confident domestic surveillance system. The other Andean countries were responsible for a low percentage of the reports and foci. Uruguay shows clearly the damages of the disease, since with 0.7% of the hog population it had 12% of the reports and 21.5% of the foci of the first six months. Brazil had 110 reports (33.3%) -as above mentioned they do not comprise all the States- and 237 (62.3%) foci, agreeing with its hog population (56% of the infected countries). Guatemala's system was very efficient and careful, since it was responsible for 35.7% of the reports and 4.7% of the foci. El Salvador made 11 reports (3.3%), which is important considering the extension of its territory and population. Honduras made only 2 reports in 43 weeks. Finally, Mexico made 8 reports, which were confirmed simultaneously. It represents a low percentage considering its hog population (20% of the infected countries).

IV. SUMMARY AND ANALYSIS 1987-1988 - EVERY COUNTRY AND GLOBALLY

1. Bolivia

During 1987-1988, Bolivia reported 40 weeks with neither suspected reports nor confirmed foci in other publications.

2. Colombia

During 1987-1988 Colombia had an active participation in the Surveillance System reporting for the whole 52 weeks. The total reports rose from 22 in 1986-1987 to 38 in 1987-1988, mainly in August-October period. There were 14 affected Departments, mainly Cundinamarca, with 26 quadrants, number 1644 being responsible for four reports (10.5%).

As to foci confirmed by laboratories, they were reduced from 29 to 24 from one year to the other, tending to increase in the last three months (13, or 40.6%). Concerning the relation report/focus, it was 5/1; 8/7; 8/11 and 17/13.

The Departments of Valle, Córdoba and Cundinamarca were mainly damaged.

3. Ecuador

It reported 19 weeks of the total 52. There were only two reports in week 9 in the Provinces of Guayaquil and Azuay. As to the confirmed foci, 3 were reported in official publications (OIE). The Ecuadorian animal health authorities are revising their system, in order to give weekly data and reports to the Surveillance System.

4. Peru

During 1988, the reported Departments could be identified. Compared to 1987, there were less informed weeks (43) and reports (4). The Department of Tumbes (quadrant 0841) was responsible for 3 of the 4 reports.

5. Venezuela

It informed 42 weeks, one of them with two reports (quadrant C18 and D12) in the States of Aragua and Anzoategui.

6. Argentina

This year, it begins to be part of the Surveillance System. Out of the 43 informed weeks, 26 (60%) were reported. Most of the reports were from the last three months (19 of 46, or 41.3%). The quadrant 2526 had 30.4% of the reports and the Provinces of Santa Fe 28 (61%), Córdoba 17.4% and Buenos Aires 15.2%.

60 foci were detected during 1987-1988 with the same tendency in the last month (31 or 51.6%). The provinces of Santa Fe, Córdoba and Buenos Aires were responsible for 65%, 16.6% and 13.3% of the foci respectively.

7. Chile

During 1987-1988, Chile reported 10 foci, four of them in August-October, showing the same tendency that other countries. The Regions VII and VIII had 70% of the foci. During the year, confirmed foci were reported by month.

8. Uruguay

The foci confirmed by laboratories in Uruguay were 26, following the same graphic behavior than the reports. It shows a decrease of 70% as compared to last year. The same Departments were damaged; Canelones being in first place. The reports in 1987-1988 were 23, almost 50% reduced as compared to 1986-1987 (42).

The quadrant L27 was responsible for 17.4% together with K27, both of them were frequent reporters last year. The Departments of Montevideo, Canelones, Lavalleja and Rivera were responsible for 30.4, 17.4 and 13% respectively.

9. Paraguay

During 1987-1988 there were seven reports, four of them in the first six months of 1988. The Departments of Central, Paraguari, and Alto Paraná presented the reports. The six foci were reported in those Departments.

10. Brazil

There were 203 confirmed foci, tending to be increased and with the same distribution of the reports. As to the foci, the D.F. and Minas Gerais were over Sao Paulo and S. Catarina with 26 and 20 respectively.

Brazil was again the country with the higher number of reports (113), participating with 50 informed weeks and 45 with report. The distribution of the reports showed a tendency to rise.

The reports were mainly in four States which had the highest hog population. Paraná had 65% of the reports, S. Catarina 20%, Rio Grande do Sul 12% and Sao Paulo 3%.

11. El Salvador

El Salvador informed 40 weeks with 11 reports distributed quarterly as follows: 3, 1, 0 and 2.

The quadrants 0922 and 1028 were responsible for 63% and the Departments of Sansonate and San Salvador for 72%. There were eight foci: 3 in Sansonate and 2 in La Paz.

12. Guatemala

There were eight informed weeks. There was an important reduction as compared to 86-87 period, considering that 7 of 8 had report. The total reports were 14, 21.4% corresponding to quadrant 20.35 of Department of Solola. Only one focus was confirmed in Escuintla.

13. Honduras

Honduras increased considerable the number of informed weeks: they were 9. The map was also updated and the quadrants could be better identified. The reports were 16, 25% of them in Morazán. There were eight foci distributed in five Departments.

14. Mexico

In 1987-1988, Mexico also updated its map and participated actively in the Surveillance System: 49 informed weeks. The reports were only 11, 27.7% and 19.2% of them were found in the quadrants E14A39 and E14B11 and in the States of Mexico 36% and Federal District 27%. 12 foci were detected mainly in such States.

SUMMARY 1987-1988

In Table 3 it is summarized the weekly reports of the countries in 1986-1987 and 1988. It shows the week when the reports were begun in the System and the last week of the working year. It was given the summary of the total weeks informed, since there were some weeks without information. During 1986-1987 some countries such as Guatemala and Brazil had 88 and 72% of the weeks in which the report was assisted, which shows an animal health structure highly covering notification and assistance. In 1988, Guatemala decreased considerably the reported weeks.

Information on the weeks with suspected focus was given in percentages, as well as in the case of the weeks reported without news. In 1988, Argentina was introduced to the System and Chile only reported confirmed foci every month. When one country sends information every month a distribution of the reports in time may be made. It enables to show tendencies of the foci, which may help the animal health authorities to

take decisions; this is the case of Brazil, in which it is clearly shown stationary curve for those two years.

After an effect of two years we will attain the 1987 Annual Report which was distributed to all the countries of the Hemisphere. We are working on the 1988 Annual Report, of which we are proud since it shows the interest on the System in which most of the countries are taking part. These documents are the beginning of a series of data which will enable us to join experiences of all the countries for a joint benefit; thus our fight against diseases will be organized under strategies based on historical events, collected, technically analyzed and not under a made-up empiricism based on political interests, tending, usually, to discontinuity or failure.

CHARTER 1. GENERAL INFORMATION ON THE PARTICIPANTS
BACKGROUNDS OF HOG CHOLERA 1987

COUNTRY/REGION	CLASSIF. FAO/OHS/OIE 1987	POPULATION 1987	DIF. 1980
Bolivia	++) (PV*	1.690.000	+16%
Colombia	++) PnQiv*	2.511.000	+24%
Ecuador	++) PnQiv*	4.160.000	+13%
Peru	++) () Qiv*	2.240.000	+ 4%
Venezuela	++) V*	3.351.000	+50%
Andean Region		13.952.000	+21%
Argentina	+ PnQfV*	4.036.000	+ 6%
Chile	+ PnQqFv*	1.150.000	+15%
Paraguay	++) PnV*	1.690.000	+33%
Uruguay	+++ PnQiv*	190.000	-57%
South Region		7.065.000	+ 8%
Brazil	+ () PaQteV*	32.000.000	-13%
Southamerican Region		53.018.000	- 3%
Costa Rica	- 000PqI	238.000	+ 2%
El Salvador	++)	398.000	- 5%
Guatemala	+++ V	865.000	+ 9%
Honduras	++) V*	567.000	+ 6%
Nicaragua	+++ V*	749.000	+50%
Panama	- 1961	205.000	+ 5%
Center American Reg.		3.022.000	+13%
Mexico	++) () PnQfSSpteV*	18.662.000	+44%
Estados Unidos	- 1976 PQS*	53.795.000	-20%
Canada	- 1963	10.476.000	+ 8%
North Region		82.933.000	- 8%
Cuba	- 1974 Pqfsv*	2.400.000	+23%
Haiti	- P	700.000	-65%
R. Dominicana	- 1981	2.637.000	+955%
Barbados	- 1973P	49.000	+29%
Guyana	- 0000*	185.000	+37%
Jamaica	- P	246.000	- 3%
Suriname	-	23.000	+15%
Trinidad & Tobago	- 1974 pVp*	83.000	+40%
Dominica	- 1982 P*	9.000	+12%
Grenada	-	11.000	-26%
St. Lucia	- 1973 P*	12.000	+20%
St. Vincent	- P*	7.000	+16%
Belice	++) Qlsv*	25.000	- 7%
Guadalupe	SD	44.000	+83%
Guyana Francesa	SD	10.000	+66%
Martinica	SD	47.000	27%
Antigua	SD	4.000	-42%
Antillas Netherld.	SD	7.000	0%
Bahamas	- P*	20.000	+17%
Is. Caiman	SD	0.000	0%
Is. Virgenes	SD	3.000	0%
Montserrat	SD	1.000	-66%
San Cristobal NV.	SD	19.000	0%
Caribbean Region		6.542.000	+33%
Latin America		80.439.000	+ 7%
Total		145.515.000	- 4%

CHAPTER 2. SUMMARY AND ANALYSIS OF THE REPORTS OF THE COUNTRIES
1986 - 1987

Hog population 1987: 69.474.000
Informed weeks: 52

Non informed weeks: 0

Weeks with report: 51

Weeks without news: 1

FAO-OHS-OIE Classification:

Table of the month frequency and total of reports and focus

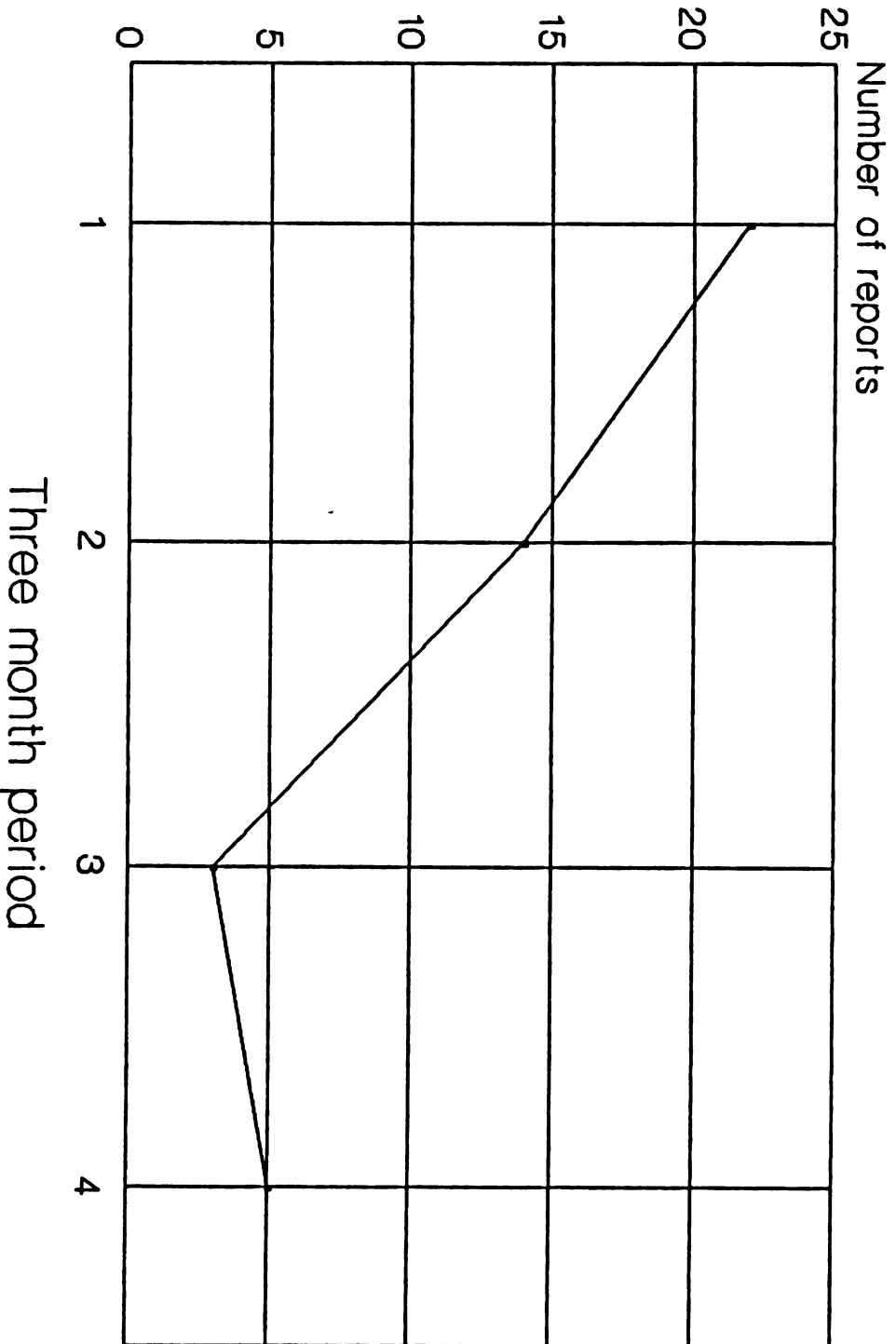
COUNTRY	REP/1	REP/2	REP/3	REP/4	TOTAL	X	FOCUS 1	FOCUS 2	FOCUS 3	FOCUS 4	TOTAL	X
Bolivia	0	0	0	0	0	0	0	0	0	0	0	0
Colombia	5	8	3	6	22	6.7	4	10	7	8	29	7.6
Ecuador	1	2	0	0	3	0.9	0	0	0	0	0	0
Feru	3	4	1	1	9	2.7	0	5	1	0	6	1.6
Venezuela	0	0	1	1	2	0.6	0	0	0	0	0	0
Chile	0	0	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	1	2	3	0.9	0	0	0	0	0	0
Uruguay	21	13	3	5	42	12.7	39	27	10	6	82	21.5
Brazil	8	11	32	59	110	33.3	20	71	65	81	237	62.3
Guatemala	8	24	48	40	118	35.7	0	3	7	8	18	4.7
El Salvador	0	5	1	5	11	3.3	0	0	0	0	0	0
Honduras	2	0	0	0	2	0.6	0	0	0	0	0	0
Mexico	5	2	1	0	8	2.4	5	2	1	0	8	2.1
Total	53	69	91	119	330		63	116	90	103	380	

CHARTER 3. GENERAL SUMMARY OF THE PARTICIPANTS
WEEKLY REPORTS 1987 - 1988

	INITIAL WEEK		FINAL WEEK		INFORM WEEK		REPORTED WEEK		PERCENTAGE		WEEK W/NEWS		PERCENTAGE	
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988
Bolivia	44	48	43	43	52	40	00	00	00	00	52	40	100	77
Colombia	44	44	43	43	44	52	19	25	43	48	25	27	57	52
Ecuador	44	43	44	18	52	19	03	01	06	05	49	18	94	34
Peru	44	44	43	43	51	43	09	04	18	09	42	39	82	75
Venezuela	44	44	43	41	52	42	02	01	04	02	50	41	96	79
Chile*	44	*	43	*	52	*	00	*	00	*	52	*	100	*
Paraguay	44	44	43	43	52	50	03	06	06	12	49	44	94	85
Uruguay	44	44	43	43	47	52	20	16	42	31	27	36	58	69
Brasil	44	44	43	43	51	50	37	45	72	90	14	05	28	10
El Salvador	07	44	43	35	30	40	08	07	27	17	22	23	73	44
Guatemala	01	44	43	43	42	08	37	07	88	88	05	01	12	02
Honduras	01	44	43	43	43	49	02	09	05	18	41	40	95	77
Mexico	44	44	43	43	52	51	07	09	13	18	45	42	87	81
Argentina**	01	01	43	43	43	43	26	26	60	60	17	17	32	32

* Chile only informs confirmed foci by month.
** Argentina was introduced to the system in 1988.

FIG. A: REPORTS
Three month/week period.



THE INTER-AMERICAN COMPENDIUM OF REGISTERED VETERINARY PRODUCTS

PROGRESS REPORT 1989

Luis V. Meléndez, DVM*
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Héctor Campos López, DVM***

INTRODUCTION

During 1984 several member countries of the Inter-American Institute for Cooperation on Agriculture (IICA) expressed the need to obtain information on official registration of veterinary products like drugs, biologics and feed additives. This need was formally attested by a resolution passed by the Second Meeting of the Inter-American Commission on Animal Health held on May 1985 in Brasilia (1).

The United States of America through the Food and Drug Administration Center for Veterinary Medicine and the Department of Agriculture Food Safety and Inspection Service (FSIS) funded most of the project from 1985 to 1989.

COMPENDIUM DEVELOPMENT

The Compendium has three main developmental phases.
Phase 1 deals with "Regulations and Authorities"(2).
Phase 2 deals with "Registered Veterinary Drugs"(3).
Phase 3 deals with Veterinary Biologics and Biotechnological products.

ACCOMPLISHMENTS

1. To date, the two first phases of the Compendium have been developed with the cooperation of officers from the Veterinary Services of the countries, the IICA, the Pan American Health Organization (PAHO/WHO), the US FDA, and the US FSIS, and the Virginia-Maryland Regional College of Veterinary Medicine of the Virginia Polytechnic Institute and State University (CVM-VT). This latter acted as consultant for the IICA to conduct the technical part of this project.

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- * Virginia-Maryland Regional College of Veterinary Medicine. Virginia Polytechnic Institute and State University. Blacksburg, Virginia, USA.
 - ** Center for Veterinary Medicine, USA Food and Drug Administration. Rockville, Maryland, USA.
 - *** Inter-American Institute for Cooperation on Agriculture. Coronado, San José, Costa Rica.

2. The Animal Health Officers of the member countries together with the respective officers of IICA were the key personnel that provided liaison and obtained the essential data for the project. With their participation a system for obtaining data and communication with the responsible officials for registration of veterinary products in each country has been developed using the official structure of IICA.
3. Data elements and standardized nomenclature for the information base have been defined for the first two phases of the Compendium.
4. Several commercial database management systems were evaluated and we have chosen dBase III updated to dBase III PLUS.
5. To date, we have in the database more than 15,000 drug products received from 29 IICA and PAHO/WHO member countries.
6. The publication for the first phase "Regulations and Authorities" is available in Spanish, English and French. A second reviewed edition of this publication in English and Spanish has been prepared and is ready to be printed.
7. The publication for the Phase two of the Compendium is available in Spanish and English and the following volumes have been published and distributed to the countries(3):
 - * Uruguay 1987, Information Series 87-2.
 - * Ecuador 1987, Information Series 87-3.
 - * Mexico 1988, Information Series 87-4.
 - * Brazil 1988, Information Series 87-5.
 - * Bolivia-Chile-Paraguay-Peru, 1988 Information Series 87-6.
 - * Colombia-Nicaragua, 1988 Information Series 87-7.
 - * Honduras-Panama, 1988 Information Series 87-8.
 - * Grenada-Guyana-Haiti-Jamaica-Trinidad and Tobago, 1988 Information Series 87-9.

FUTURE ACTIVITIES

The Phase three of the Compendium dealing with "Veterinary Biologics" has not been yet initiated; however several steps have been taken to develop this phase:

1. Funds are being sought from the US Department of Agriculture, Animal Plant Health and Inspection Service, Biotechnology Biologics and Environmental Protection (BBEP).
2. A grant proposal has been prepared by IICA and the CVM-VT and presented to BBEP requesting funding to initiate the project during years 1989-1990.

SIGNIFICANCE OF THE VETERINARY BIOLOGICS PHASE

1. Information sharing between most countries of the world concerning veterinary biologics regulations, approval and registration is not as well developed as information sharing in other scientific aspects of veterinary medicine.

The primary reason though, is the lack of an organized expert system to collect and manage the data and to assist with the decision analysis.

The lack of information has produced alarm in a good number of interested federal agencies. Currently each country in the world has its own system of register veterinary products.

2. The two primary beneficiaries of this work will be livestock producers from the participating countries and consumer of these producers. The existence of a greater information network about registered veterinary products, including biologics, among the countries will enable a greater access to a more complete distribution and a wider availability, thus resulting in a more efficient production of food from animal origin.

The manufacturers of drugs, biologics and other veterinary products will be secondary beneficiaries in that they will have a larger database regarding the market potential in the participating countries, and they will benefit from shared data useful in speeding up the approval process for registration and approval for use of veterinary biologics in participating countries.

3. Inventory of official veterinary biologics derived from biotechnology in the countries of the Americas.
4. Laws and regulations employed by the countries of the Americas to officially register biotechnology derived veterinary biologics.
5. Marketability. Present and future needs for veterinary biologics produced by biotechnological procedures in the countries of the American Continent.
6. Regularization and armonization of procedures for official registration of biotechnology derived veterinary biologics in the IICA and PAHO/WHO member countries.
7. Preparation of a quadre of officers (intra and extramurally) that will contribute to a better development of the international activities on veterinary biologics registration of all countries of the Inter-American system.
8. Facilitate environmental assessments for field tests of genetically engineered organisms in the countries of the Americas.

CONCLUSION

We believed that the adequate and complete development of the Inter-American Compendium will undoubtedly facilitate the knowledge about the official registration procedures employed by the countries for their veterinary products including drugs, biologics and feed additives. Other activities ought to include information about veterinary product residues in animal foods.

The adequate and agile update and retrieval of the collected information from data storage will facilitate the development of an international computerized network dealing with officially registered veterinary products.

The ready availability of this information network will facilitate and improve the Veterinary Medicine participation to protect human and animal health.

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ORGANIZATION OF THE UNITED STATES ANIMAL HEALTH
ASSOCIATION (USAHA) IN SUPPORT OF THE ANIMAL HEALTH PROGRAMS

Philip E. Bradshaw*

The farm I grew up on is located in West Central Illinois, in the heart of the United States, 25 miles east of the Mississippi River. I currently live only 2 miles from that farm. Livestock was my project in farm youth organizations, so I learned at a young age the importance of a good animal health program.

With the exception of 4 years of college and a little military time, my entire life has been centered around hogs and cattle. Shortly after my wife Linda and I were married, we started a hog and cattle business. We still own and operate a 200 sow farrow-to-finish hog farm and a cow-calf herd. The cattle are on pasture and the hogs are kept in buildings.

The United States hog cholera eradication program was underway when we started farming on our own. As is the case with most programs where large numbers of people are involved, some farmers supported the eradication program, while others were skeptical. The importance of eradicating hog cholera was a program I knew had to be worth the effort since my father had lost several hundred head of hogs in the 1950's with hog cholera.

Pike County, Illinois, where we live, produces about 500,000 hogs yearly and maintains approximately 20,000 beef cows. The local farmers are organized into commodity groups: pork producers, beef producers, lamb and wool producers, plus general farm organizations.

The commodity groups are financed by small assessments at the first point of sale. The general farm organizations are supported by dues from members plus fees for services provided.

The individual farmers set the agenda and programs for the different organizations. The farm organizations on the local, state, and national level have a health committee. The farmer who chairs the local health committee usually represents the local organization at the state level and the chairman of the state health committee represents the state organization at the national level. These farm organizations work with local, state, and national animal health officials. The local animal health official is a veterinarian employed by either the state or federal government and works with the livestock industry within a certain region. These veterinarians assist livestock producers, markets, and practicing veterinarians with animal health programs and are responsible for seeing regulations are followed. The state animal health official is a veterinarian who is employed by the state to work with the livestock industry. Not always but in most states this individual has been in private practice so he or

* President, United States Animal Health Association.

she is very familiar with the livestock producer and his problems. The state veterinarian, as they are usually called, has the primary responsibility for animal health programs and regulations within his state. National animal health officials are veterinarians employed by the United States Department of Agriculture (APHIS-Vet. Services). Veterinary services develops rules, standards, methods, and regulations from committee recommendations. These are minimum rules, standards, methods, and regulations enforced and administered for the most part by cooperative agreements with the state veterinarian's office. In many cases, the states develop additional rules, standards, methods, and regulations through the committee structure and the state veterinarian's office. These additional rules, standards, methods, and regulations are implemented and enforced by the state veterinarian's office. This procedure allows states to be in different stages in animal health programs. The farmers work directly with these animal health officials and elected officials as well as through animal health organizations such as the United States Animal Health Association.

Additionally, individual farmers work with the Livestock Conservation Institute (LCI), which is a smaller organization comprised of livestock producer organizations, packers, pharmaceutical and biological companies, a few animal health officials, plus individual livestock farmers. Livestock Conservation Institute is controlled and operated by the livestock industry.

The individual farmer, through his personal involvement, his contact with political leaders, and input by paid employees of the different farm organizations, has control of health programs. The individuals and their organizations can and do lobby their state and the national government for funds to support animal health programs. An animal health program will not be successful without a majority of the industry supporting it.

The United States Animal Health Association membership is comprised of representatives throughout all of the livestock industry. There are some 70 organizations that make up the Executive Board and some 1.200 to 1.300 individual members. The Executive Board, which approves all recommendations, consists of all 50 state animal health officials; American Veterinary Medical Association; Livestock Marketing Association; American Quarter Horse Association; National Cattlemen's Association; Livestock Conservation Institute; National Milk Producers Federation; International Association of Fish and Wildlife Agencies; American Association of Bovine Practitioners; United States Department of Agriculture, Veterinary Services; American Association of Zoo Veterinarians; Holstein Friesian Association; National Dairy Improvement Association; American Association of Avian Pathologists; National Pork Producers Council; American Association of Veterinary Laboratory Diagnosticians; National Facts; American Farm Bureau Federation; International Llama Association; American Bison Association; American Association of Swine Practitioners. The United States Animal Health Association is supported financially by individual and organizational dues. Dues are kept low so everyone can afford to take part in the organization.

The United States Animal Health Association is organized into 36 committees with individuals from all the different segments of the animal health industry: researchers, livestock producers, regulatory officials, representatives of biological and pharmaceutical companies, marketing, meat processing companies, and other interested individuals.

ORGANIZATIONAL CHART

United States Animal Health Association

Executive Board

Officers Board

General Membership

Committees

Committees

Animal Disease Surveillance and
Animal Health Information Systems

Livestock Identification

Animal Welfare

Mastitis

Aquaculture

Nominations and Resolutions

Biologics

Parasitic Diseases and Parasiticides

Biotechnology

Pharmaceuticals

Bluetongue and Bovine Retrovirus

Transmissible Diseases of Poultry

Brucellosis

Professional Oversight

Swine Brucellosis

Pseudorabies

Infectious Diseases of Cattle,
Bison and Llama

Public Health and Environmental
Quality

Environmental Residues

Public Relations

Epizootic Attack

Rabies

Food Animal Hygiene

Salmonella

Foreign Animal Diseases

Sheep and Goats

Hemoparasitic Diseases

State-Federal Relations

Infectious Diseases of Horses

Transmissible Diseases of Swine

Import-Export

Tuberculosis

Johne's Disease

Wildlife Diseases

Leptospirosis

Zoological Animals

Sub-Committees and Ad Hoc Committees as needed by the individual committees.

The livestock farmer becomes a member of one of these committees usually by first becoming involved in his local, state, and national commodity organizations. Sometimes an individual farmer will get involved directly with the United States Animal Health Association because of his or her interest in a specific health issue.

A livestock farmer → joins local commodity group → serves on animal health committee or officer position → gets involved with state producer health committee → then works with a national producer organization and/or United States Animal Health Association.

The primary activity of the United States Animal Health Association is the development of animal health programs and recommendations for their implementation.

Individual members or organizations recommend programs and/or regulations for their implementation to the committee which is responsible for that program. The committee then discusses and makes recommendations and resolutions that are voted on by the Executive Board. The officers then carry those resolutions and recommendations to the proper government authorities and others where appropriate.

FLOW CHART FOR ANIMAL HEALTH PROGRAMS

United States Government Agencies

Food and Drug Administration
U.S. Department of Agriculture
(Agriculture Research Service)
(Veterinary Services)

other groups interested in livestock health

Officers - United States Animal Health Association
(Carries Recommendations to)

Executive Board
(Adopts Committee Reports and Advises Officers on Actions to Take)

General Membership
(Adopts Resolutions)

Committees

(Committees generate ideas for health program and activities. Helps develop and recommends plans for programs. Suggest implementation procedures and changes for programs.)

Example: More or less use of vaccines - more or less testing
More or less restrictions on movement of animals

All committee members are appointed by the President. It is his duty to see that a balance is maintained so no one segment can dominate the vote for recommendations.

Committee Structure

Chairman: may be a:
 farmer
 university person
 state regulatory official
 employee of farm group
 representative of marketing
 biological company and/or pharmaceutical
 etc.

Vice Chairman:

Members: consists of:
 farmers
 researchers
 regulatory
 news media
 biological and/or pharmaceutical companies
 farm organization employees
 animal humane groups
 marketing and/or transportation

The most common reason a farmer or any individual drops out of the process is his or her own personal frustration with the system. Over the past twenty years, I have seen individuals get angry over another committee member's position, walk away, and not attend any more meetings. I have seen other individuals who do not have the patience to sit in meetings where the same program plans and problems are gone over time after time. Success, however, has come because of those individuals who believed strongly in the program, were polite and courteous to those who differed with them, and had the fortitude to stay and see the program through.

The benefit of having all of the different organizations involved in the committee structure of the United States Animal Health Association is that it gives anyone who wants to have^oinput an opportunity to voice his or her opinion, even if that opinion concerns only one issue or problem. It is sometimes hard for those of us involved over the duration of a program to remember the importance of this one issue to those individuals. I remember well a pork producer who attended pork producer meetings, Livestock Conservation Institute meetings (LCI), United States Department of Agriculture meetings and United States Animal Health meetings in the mid 1970's with only one issue. This issue was a vaccine for pseudorabies (PVR) with a test that would distinguish it from field viruses. We now have that capability.

I will close with this anonymous quote. It is entitled "Press On".

Nothing in the world can take the place of persistence.

Talent will not;

Nothing is more common than unsuccessful men with talent.

Genius will not;

Unrewarded genius - it's almost a proverb.

Education alone will not;

the world is full of educated derelicts.

Persistence and determination alone are omnipotent.

EXCHANGE OF INFORMATION ON SANITARY LEGISLATION IN THE COUNTRIES TO
FACILITATE THE INTERNATIONAL TRADE OF ANIMAL AND ANIMAL PRODUCTS

Jorge Torres Barranca*

The Punta del Este Declaration of Ministers urges the countries to minimize the unfavorable effects which phyto- and zoo-sanitary regulations and barriers have on the trade of agricultural commodities, taking into consideration pertinent international agreements.

The only GATT norm in effect on the subject enables contracting parties to adopt the measures needed to protect the health and lives of people and animals or to preserve plants. It proclaims the sovereign right of each contracting party to select the sanitary measures it deems appropriate and to define the level of sanitary protection it proposes to ensure.

Several international organizations have been created to prepare and standardize the regulations and legislation that govern the international trade of animals and plants, their products and by-products.

The objectives of the Codex Alimentarius are: to protect the health of consumers and provide key mechanisms in the world food trade; to promote the coordination of all work carried out by governments and other international organizations to establish food standards; and to set priorities and begin drawing up documents that unify food standards at the regional or world level, for subsequent publication in the Codex Alimentarius, after approval by interested governments.

All standards for fresh, processed and semi-processed foods are included in the Codex Alimentarius.

The International Office of Epizootics (OIE) is an organization responsible for developing and maintaining a reporting and information system on the world livestock situation, and for maintaining an expeditious international livestock marketing system, free of risks of spreading animal diseases. The OIE has specialized committees, such as the International Zoo-Sanitary Health Code Commission and the Standards Commission.

The International Zoo-Sanitary Code Commission was created to study and recommend sanitary regulations for importing and exporting animals and animal products. The Standards Commission carries out studies and makes recommendations as to the most appropriate tests related to the importation, exportation and production of vaccines.

The International Plant Protection Convention (IPPC) provides a general system to prevent the spreading of plant pests and diseases across national borders, and operates through regional plant protection organizations, where available; the European and Mediterranean Plant Protection Organization (EPPO);

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the North American Plant Protection Organization (NAPPO); the Caribbean Plant Protection Commission (CPPC); the Asian and Pacific Plant Protection Commission (APPPC); in addition to other affiliated organizations in Africa and Latin America. The IPPC, through FAO, publishes changes that have been made in phyto-sanitary legislation.

Nevertheless, in practice, national regulations vary considerably, as a result of both the objective differences in individual phyto- and zoo-sanitary situations and of different policies followed in the sector, constituting a potential obstacle for trade and even bringing about a complete ban on imports. In order to achieve the general objectives outlined for agriculture in the Punta del Este Declaration, ways must be found to minimize the unfavorable effects of regulations without this having a negative impact on the sanitary conditions of the contracting countries.

During the recent Uruguay Round, held in Geneva, negotiations were undertaken to try to find information mechanisms that would enable the countries in the American hemisphere to standardize the sanitary legislation governing international agricultural trade and, at the same time, establish an information system for reporting on changes occurring in legislation and regulations.

Since one of the objectives of the Uruguay Round of GATT is to liberalize the international trade of foodstuffs, it was suggested that IICA coordinate the actions of the countries to identify the differences between pertinent national legislations of its Member States.

To this end, IICA has carried out various actions. First, it sent informative letters to the countries, requesting copies of their zoo- and phyto-sanitary legislation and regulations that govern international agricultural trade. International organizations such as FAO, OIE, NAPPO, EPPPO, JUNTA and OIRSA were requested to do the same.

As a result, IICA Headquarters has received information from 21 countries, including Argentina, Antigua and Barbuda, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, El Salvador, Guatemala, Grenada, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Saint Lucia, Trinidad and Tobago, Uruguay and Venezuela.

Information was also received from OIRSA and FAO.

At the same time, a survey was prepared and sent out to obtain specific information on agricultural products from the countries of Latin America and the Caribbean which face trade barriers in the countries of the hemisphere, as well as in countries of the European Economic Community (EEC), Asia and other areas.

Response from the countries to the survey has not been as rapid as expected. As of May 30, only Argentina, Canada, Chile, the Dominican Republic, Honduras, Jamaica, Panama, Trinidad and Tobago had sent in the requested information. The process will apparently be a long one.

IICA hired two consultants with experience in plant and animal legislation to study and organize the information received. They are currently involved in a preliminary study to identify the main commercial products and categorize the

most important sanitary barriers, based on appropriate standards established by international organizations and commissions such as the Codex Alimentarius, the European Economic Commission, the International Plant Protection Convention and the International Office of Epizootics.

IICA is also organizing a workshop on sanitary legislation and international agricultural trade, which will be held at IICA Headquarters in San Jose, Costa Rica, July 27 and 28, 1989. Representatives will attend from the European Economic Community (EEC), Codex Alimentarius (FAO/WHO), the International Office of Epizootics (OIE), the International Plant Protection Convention (IPPC/FAO), the International Regional Organization of Agricultural Health (OIRSA), the Board of the Cartagena Agreement (JUNTA), the Regional Council for Agricultural Cooperation in Central America, Mexico, Panama and the Dominican Republic (CORECA), the Caribbean Community (CARICOM) and the Inter-American Institute for Cooperation on Agriculture (IICA).

The meeting aims to discuss mechanisms that will make it possible to standardize sanitary legislation that regulates international agricultural trade in the American hemisphere.

The projected final result of the workshop is a short-, medium- and long-term plan of action to implement the mechanisms needed to:

- a. standardize the countries' sanitary legislation on agricultural trade;
- b. develop an information system that continually updates changes in the countries' sanitary legislation;
- c. establish the groundwork for an ongoing negotiation process among the countries; and
- d. implement a technical assistance program to advise the countries in finding solutions to situations that hinder international trade.

The results of and progress achieved in the workshop in relation to the plan of action will be presented during subsequent negotiations of the Uruguay Round, to be held in Geneva in December, 1989. A group of representatives from Latin America will attend. In addition, representatives from the GATT Secretariat, IICA observer countries and representatives from other international organizations interested in minimizing agricultural trade problems may attend.

It is important to remind the governments that are a part of GATT that they should participate as actively as possible in the Uruguay Round. Furthermore, the governments of the American hemisphere should be urged to carefully study the non-tariff barriers that they face in the food trade, and request revision of the legislation and regulations that could be the result of protectionist measures.

ORGANIZATION OF A NATIONAL ANIMAL HEALTH EMERGENCY
AND QUARANTINE SYSTEM

John Mason, DVM, MPH*

The topic for discussion given above needs to be understood as part of a general program for the "Prevention, Detection and Eradication of Foreign Animal Diseases". Most of you here are familiar with the general aspects of this program. Rather than give you the usual review of the different elements that make up such a program, I would like to discuss briefly some special aspects based on my own experience in the United States and in Mexico, with particular reference to some of the problems that exist and to some possible solutions.

1. The general "Foreign Animal Diseases" (FADs) program in any National Animal Health Department involves a number of different activities which should include at least the following:
 - a. Collection, analysis and distribution of FAD information.
 - b. Regulation of the export and import of animals and animal by-products.
 - c. Operation of quarantine stations for live animals.
 - d. Operation of animal quarantine programs at airports, seaports and border stations.
 - e. The investigation and diagnosis of FAD outbreaks.
 - f. Operation of diagnostic laboratories for FADs.
 - g. Operation of programs for animal health emergencies.
 - h. Training programs for FADs.
 - i. Research programs for FADs.

These activities, in my experience, are usually split up among a variety of different agencies within the National Animal Health Department, and there often is little coordination among them. An essential need is to have a small group of officials who are responsible for coordinating these activities and at least keeping everyone informed.

2. Although the animal quarantine program is usually considered as the "first line of defense" against FADs, in my opinion the first line should be in the countries of origin, that is, the countries that have these diseases.

* Codirector - Mexico-United States Commission for the Prevention of Foot-and-Mouth Disease and other Exotic Animal Diseases, Mexico, D. F.

The first requirement is current knowledge about the presence of the exotic diseases in each foreign country. With some 150 countries in existence and more than 50 exotic diseases that need to be considered, this becomes a complicated task. Although a number of international agencies such as OIE, FAO, WHO, and PAHO try to disseminate this information as quickly and as accurately as possible, there is often considerable delay and in many cases the reports are incomplete because of deficiencies in the official notification systems. The U.S. tries to supplement these reports by utilizing U.S. animal health officers and agricultural attachés stationed in different countries around the world to gather information. When the information is received, from any source, it must be analyzed, recorded and distributed, particularly to the personnel in the export-import programs, animal quarantine programs and the disease surveillance services. This requires adequate computer-assisted data storage and transmission capabilities.

3. If any particular country carries on any degree of trade in animals and animal by-products with other countries, there are enormous problems in standardizing requirements for their export and import. Every country has its own requirements and these keep changing from year to year as the foreign animal disease picture changes. The OIE in particular makes an effort to regularize this situation, but the task may be beyond the capabilities of any single international agency.

4. Every country maintains an animal quarantine program to prevent the entrance of FADs. In the U.S., quarantine personnel are maintained at some 50 airport, seaport and border stations. In Mexico, there are 58 such posts. In most countries these programs are understaffed, and the personnel are poorly paid and poorly trained. In some countries animal and plant health inspection services are combined, further complicating the training needs and supervision. Often the quarantine personnel are dominated by customs officials and have little authority on their own. In Mexico a program has been developed to provide regular training for program personnel and to include in the course curriculum the actual evaluation of quarantine activities at the different posts, as a teaching exercise.

Hopefully, it may one day be possible to involve the airlines and travel agents to assist in trying to prevent passengers and the airlines themselves from transporting animal byproducts that could introduce exotic disease into free areas.

5. If the animal quarantine program fails, for any reason, and some exotic disease does enter, it must be detected quickly so that it can be eradicated without delay before it becomes established. If this does not happen, there can be disastrous consequences, as were seen in the Dominican Republic in 1978, where African Swine Fever entered, was mistaken for Hog Cholera, and was not recognized until some five months later, with the result that eventually the total population of some 3 millions pigs in that country and Haiti had to be slaughtered.

In Mexico, the Commission with which I work (The Mexico-United States Commission for the Prevention of Foot-and-Mouth Disease and other Exotic Animal Diseases) conducts an ambitious program to insure that exotic diseases are recognized if they enter and are reported quickly. Using its eight Regional Coordinators, special 3-day courses on FDAs are given to senior students at each of the 36 veterinary schools in the country each year. A more complete 5-day course is given to key animal health officials in every state. This course dedicates 2 days to discussing the importance of the exotic diseases and the clinical and epidemiological aspects of some of the more important of these diseases, one day on how to prevent, detect and eradicate exotic diseases, and the last two days in a simulation of an actual outbreak of an exotic disease such as FMD, ASF or Rift Valley Fever.

The "Simulacros" used in these courses are desk exercises, where everything is simulated. We find this type of exercise very effective, practical and much more economical than a protracted field exercise.

The Commission has developed effective teaching methods based on active participation by the students, and staff members who are mainly involved in conducting training sessions are themselves instructed on how to apply these methods, in other words training for the trainers.

In the course of its training program, the Commission has developed and uses a wide variety of audio-visual teaching aids. These include films, video tapes, overhead projection material, color slide transparencies, manuals, pamphlets, and workbooks. We would be willing to share these materials and the training techniques themselves with other programs and other countries. Actually, everyone could profit by some system of interchange of materials and methods among the different programs in Latin America.

The courses given for animal health officials include veterinarians, administrators, information specialists and military officers, and whenever possible, representatives of the livestock industry. A special course is now being planned and scheduled for personnel working in zoos and with wildlife.

We feel that with some 150 courses that the Commission has given in Mexico during the past 7 years, the appreciation of the importance and knowledge of exotic diseases on the part of practicing veterinarians and local animal health officials has increased considerably, but we feel that there is still much to be done to achieve the same results with the livestock producers themselves, on whom we must depend for the initial report of any outbreak. To encourage the producer to report, the Commission offers its services to investigate any suspicious outbreak of animal disease, anything exceptional that might indeed be due to some exotic disease.

6. In both the U.S. and in Mexico a special effort is made to train and maintain a corps of "foreign animal disease diagnosticians" who can be sent immediately to investigate any outbreak suspected of being due to some exotic disease, and to collect appropriate specimens for laboratory confirmation.

7. If the Commission is to be ready to investigate any type of outbreak, on the chance that it could possibly be caused by some exotic disease, it must have a high security laboratory available which is able to support this activity. In Mexico, when the Commission was given the responsibility a few years ago for all the exotic diseases, in addition to FMD, it decided to expand the diagnostic capabilities of what was essentially a vesicular disease laboratory. At the present time, the Commission laboratory can carry out tests for some 11 exotic diseases and some 9 others which need to be considered for differential diagnosis. Although reference laboratories in other countries could be used for the same purpose, the availability of these services in Mexico saves time when it is most needed, at little additional expense, and since the presence of an exotic disease can only be confirmed by laboratory tests, such a laboratory is absolutely essential for an efficient program.

8. If, in fact, some exotic disease does enter, is quickly detected, reported, investigated and confirmed in the laboratory, a country must be ready to act quickly to eradicate the disease before it spreads and becomes established. Most countries maintain emergency services for this purpose. I would like to mention two such programs, one in the U.S. (The Regional Animal Disease Eradication Organizations or READEO) and the other in Mexico (Sistema Nacional para Emergencias en Salud Animal or SINESA). Essentially both programs are based on the same concept, namely, maintaining a well-trained, highly motivated corps of animal health personnel who can be mobilized immediately in case of some animal health emergency.

These personnel are employed regularly in various routine animal health programs, but have been trained for specific duties in an Emergency Task Force, and are ready to leave their regular duties to carry out these responsibilities whenever required.

In the U.S. the READEO has been utilized for the eradication of VVND in California in 1971-74, of highly pathogenic avian influenza in Pennsylvania and Virginia in 1983-84 and of ASF in Haiti in 1982-83. In Mexico the SINESA has been mobilized and is now in operation to eradicate an outbreak of viral hemorrhagic disease in rabbits.

In Mexico the personnel for the SINESA are selected from the animal health officials who participate in the introductory FAD courses (AUTOSIM I) in the different states. The best candidates then are given a more elaborate course (AUTOSIM II) to train them for specific duties in the Task Force. Contact is maintained later with SINESA members by special bulletins and notices, to provide them with current information on exotic diseases and prevention and eradication programs in Mexico and around the world.

In actual operation in Mexico, the Director of the Commission serves as the Executive Officer of SINESA and the Commission's 8 Regional Coordinators act as leaders and coordinators for regional Task Forces (GRESA - Grupos Regionales para Emergencias en Salud Animal).

Eradication plans have been developed for FMD, ASF, Hog Cholera and Avian Influenza, and are in preparation for RVP. These are used for training SINESA personnel and are available for actual outbreaks.

To be ready for any emergency mobilization of the SINESA, the Commission maintains a stock of supplies, equipment and vehicles for immediate use. Equally important are provisions for obtaining funds to pay for the costs of an emergency operation during the first few weeks, until the situation is further evaluated and a decision is made on the subsequent course of the campaign.

It should be understood that SINESA or READEO are not limited for use only for outbreaks of exotic diseases, but can be mobilized for any type of animal health emergency, whatever its origin.

In conclusion, a satisfactory FAD program requires a considerable expenditure of effort, personnel and money. Its effects and worth are difficult to evaluate but not having such a program or not operating it properly exposes the livestock industry of any country to catastrophe. The intention is for all countries to have effective programs at a manageable cost and to balance the funds available for the program against the risk of allowing some destructive exotic disease to enter.

FIFTH COORDINATION MEETING OF INTERNATIONAL TECHNICAL
COOPERATION ORGANIZATIONS WORKING ON ANIMAL HEALTH IN THE AMERICAS

FINAL REPORT

The Fifth Meeting of Consultation among International Technical Cooperation Organizations working on Animal Health in the Americas was held at the Presidente Hotel in San Salvador on the 4th and 5th of February, 1988, under the coordination of OIRSA.

The following officials participated in the Meeting:

Pan American Health Organization (PAHO)

Dr. Joe Held

Coordinator of Public Veterinary Health

Inter-American Institute for Cooperation on Agriculture (IICA)

Dr. Héctor Campos López

Deputy Director of Animal Health

United Nations Food and Agriculture Organization (FAO)

Dr. Carlos Arellano-Sota

Regional Officer for Animal Health and Production

International Office of Epizootics (OIE)

Dr. Pedro Acha

Advisor to the Director General

United States Department of Agriculture (USDA)

Dr. William Buisch

International Programs

Dr. James Cavanaugh

Regional Representative

Dr. Rafael García

Veterinarian/CAB

Board of the Cartagena Agreement (JUNAC)

Mr. Fernando Lecuna

International Civil Servant

International Regional Organization of Agricultural Health (OIRSA)

Dr. Celio Humberto Barreto

Head, Animal Health Division

Mr. Guillermo Otero Medal

Head, Training and Dissemination Unit

Dr. Julio Ernesto Calderón

Animal Health Specialist

Observers:

Central American Bank for Economic Integration (BCIE)

Mr. Róger Guerrero

Coordinator, Agribusiness Program

Agency for International Development (AID)

Mr. Félix Cristales

Project Manager

Inauguration

At 9:00 a.m., with the attendance of the Delegates and special guests, the Executive Director of OIRSA, Mr. Rafael Ernesto Mata, and the Vice-Minister of Agriculture and Livestock of El Salvador, Mr. Gustavo Molina, delivered their welcoming speeches to the Directors of Animal Health Programs of international technical cooperation agencies operating in the Americas, stressing the need for inter-agency coordination for the benefit of the member countries.

First Plenary Session

After the presentation of reports by Dr. Carlos Arellano, FAO Delegate; Dr. Pedro Acha, OIE Delegate; Dr. Joe Held, PAHO Delegate; and Dr. Héctor Campos López, IICA Delegate, the session was adjourned at 12:40 p.m.

Second Plenary Session

The Second Plenary Session was opened at 2:40 p.m. Reports were presented by Dr. William Buisch, USDA Delegate; Mr. Fernando Lecuna, JUNAC Delegate; Dr. Celio Humberto Barreto, OIRSA Delegate. Next, the BCIE Delegate, Mr. Róger Guerrero, and the AID Delegate, Mr. Félix Cristales, took the floor to report on matters pertinent to their respective agencies. Items of common interest were discussed during this session, which was adjourned at 6:10 p.m.

Third Plenary Session

The Third Plenary Session was initiated at 8:20 a.m. The Delegates proceeded to identify and discuss recommendations on the subject of inter-agency coordination, which were approved at 12:00 hours, and which read as follows:

LABORATORY EVALUATION

That FAO and IICA coordinate their efforts in order to submit the Sixth Meeting on Coordination of International Agencies in Animal Health with updated information on the Evaluation Study of the Animal Health Laboratories in Latin America and the Caribbean, concerning existing infrastructure, the diagnostic services that are provided, and the technical and scientific level of the human resources, for the following reasons:

- a. To encourage horizontal exchange of technology and operational experience among laboratories.
- b. To optimize the channeling of resources and services from the International Agencies that support the activities of the laboratories.
- c. To define systems for the shipment and exchange of reagents, biological samples, and drugs at the national and international levels.

INTER-AMERICAN GROUP ON COORDINATION IN ANIMAL HEALTH

That the FAO Regional Officer for Health and Animal Production prepare a draft of regulations establishing guidelines for the future operation of the Group on Coordination of International Agencies in Animal Health in the Americas, to be submitted to the different agencies for their consideration.

PARTICIPATION BY PRODUCERS

That the international agencies for cooperation in animal health try to invite representatives of the livestock-production sector to their institutional meetings on the programming and execution of sanitary programs.

DATA BASE ON ANIMAL HEALTH

That Dr. Joe Held (PAHO), Dr. William Buisch (USDA/APHIS), and Dr. Pedro Acha (IICA-OIE) meet in Washington, D. C., as soon as possible, to discuss and develop the profile of a project to establish a computerized data base on animal health which would involve all the international agencies for cooperation in animal health in the Americas.

LABORATORY NETWORK

That FAO and IICA coordinate their activities in a joint effort to establish and operate networks of animal health laboratories, in such a way that the two projects complement each other and avoid duplication, especially in the allocation and strengthening of reference services.

In addition, that, once the reference services have been identified, the other international agencies active in the region promote them and support their operations in their Member States.

PAN AMERICAN ASSOCIATION OF VETERINARY SCIENCES

That the international agencies that provide cooperation to the animal health programs in the Americas provide all their support for the reorganization of the Pan American Association of Veterinary Sciences.

In addition, that they promote the sending of representatives to the Pan American Congress of Veterinary Sciences to be held in Lima, Peru, 14-20 August 1988.

**PROJECT ON QUARANTINE AND EMERGENCY SYSTEMS IN ANIMAL
HEALTH FOR LATIN AMERICA AND THE CARIBBEAN**

That the project on quarantine and emergency systems to be initiated soon by FAO for Latin America and the Caribbean take into consideration the agencies in the region that are already working in that field, such as OIRSA, IICA, JUNTA, and USDA.

RIMSA AND COINSA MEETINGS

That PAHO and IICA explore the possibility of holding joint meetings of RIMSA and COINSA during 1989.

In order for the above to be feasible, both agencies would come to an agreement on the place, date, agenda, organization, etc., of those meetings, inviting the OIE to hold its meeting of the Commission of the OIE for the Americas at the same place and time.

INVITATION TO THE MEETINGS OF THE OIE

That the Director General of the OIE consider the possibility of extending invitations to governments that are not members of that agency in the Americas to participate as observers.

That he also be asked to continue to invite the international agencies for cooperation in animal health in the Americas to those meetings.

INTERNATIONAL RESIDENCY IN ANIMAL HEALTH

That the PAHO Representative be in charge of preparing the profile for a project on international residency for selected veterinary physicians in the countries, which would allow them to participate more effectively in the national animal health programs.

The profile should be sent to the representatives of the other agencies for their comments and subsequently an attempt would be made to identify the resources for its operations.

**DOCUMENT ON INTERNATIONAL TECHNICAL COOPERATION IN
ANIMAL HEALTH IN THE AMERICAS**

That the IICA, with the collaboration of the other international agencies, be in charge of updating the document "Role and Magnitude of Technical Cooperation in Animal Health in the Americas", which was originally prepared by that Agency.

That said document be presented at the VI Meeting on Coordination of International Agencies in Animal Health.

It was agreed that Caracas, Venezuela, would be the seat for the next meeting, under JUNAC coordination.

The Head of OIRSA's Animal Health Division, who presided over the meeting, expressed his appreciation for the trust the different agencies had placed in OIRSA for the coordination of the event.

IICA's Deputy Director of Animal Health, with the approval of all the Delegates, requested that the following be included in the Final Minutes of the Meeting:

VOTE OF RECOGNITION

The participants in the Fifth Coordination Meeting of International Animal Health Agencies in the Americas express their appreciation and recognition to the International Regional Organization of Agricultural Health (OIRSA) and its staff for the excellent organization and hospitality provided for the successful development of the Meeting.

Finally, the Executive Director of OIRSA, Mr. Rafael E. Mata, delivered the closing remarks of the Fifth Meeting.

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SIXTH REGULAR MEETING OF THE INTER-AMERICAN GROUP FOR
COORDINATION IN ANIMAL HEALTH

FINAL REPORT

Caracas, Venezuela
February 20-21, 1989

1. **Inaugural Session**

The Board of the Cartagena Agreement, which was responsible for the organization of this event, benefitted from the valuable collaboration of the Ministry of Agriculture and Livestock of Venezuela, which provided the facilities for the meeting.

On Monday, 20th of February, 1989, at 10:00 a.m., the Sixth Regular Meeting of the Inter-American Group on Animal Health Coordination was declared opened by Dr. Luis Thula Rangel, Vice-Minister of Agriculture and Livestock, who expressed to the participants best wishes for a successful meeting and a pleasant stay in Venezuela, on behalf of Dr. Fanny Bello, Minister of Agriculture and Livestock of Venezuela.

2. **Compliance with pending recommendations**

a. Updating of the evaluation made of the Animal Health Laboratories of the Americas

Dr. Héctor Campos López, representing IICA, reported on progress made to date, and informed that the results of the evaluation for the Central, Andean, and Southern Areas would be published in April and June, 1989.

The Representative of FAO, Dr. Carlos Arellano-Sota, distributed among those present the publication entitled **Sistema de Evaluación para el Personal Científico de los Laboratorios de Investigación y Diagnóstico Veterinario (GAN-24)** ("Evaluation System for Scientific Personnel in Veterinary Research and Diagnosis Laboratories"). He commented on preliminary results obtained, and stated that the results of the evaluation made by over 650 professionals who are part of the FAO Network for Technical Cooperation among Veterinary Research and Diagnosis Laboratories would be published during the second half of 1989.

b. Profile for a Data Base on Animal Health for the Americas

Dr. Joe Held, Representative of the Pan American Health Organization, reported on the establishment of a computerized data system that stores and provides information on the profile of animal health systems and infrastructure in the Americas. Briefly, this system would be incorporated into the electronic mail system and data could be fed in, making it possible for practically all countries of Latin America and the Caribbean to have access to this information.

(Recommendation 1/89)

It is recommended that the data base be used as a profile to be enriched with the information available in the different agencies, which could add and obtain information based on the program and methodology defined by the Pan American Health Organization.

As this data base grows, a specific source of funding will be sought to cover its service needs.

c. International Residency for Veterinary Physicians

The original idea was to establish a system to train veterinarians to fill future positions in the animal health services of international agencies. At the meeting, a consensus was reached that the international agencies should have a selection system to locate high-level technical professionals with good operational experience, whereby it is recommended as follows:

(Recommendation 2/1989)

That the member agencies of GICSA continue to seek out and report on institutions whose scientific and practical level is adequate to allow them to offer training to veterinary physicians from the countries that require it. In addition, new possible sources of financing for this training program must be identified.

d. Updating the document "Role and Safety of Technical Cooperation in Animal Health in the Americas"

There was a consensus that the format suggested by IICA for presenting information on the activities carried out by each member of GICSA in the region reflects the role and magnitude of the international technical cooperation activities in animal health that are carried out in the Americas, by virtue of which it is recommended as follows:

(Recommendation 3/1989)

The representatives of the member agencies of the Inter-American Group on Animal Health Coordination (GICSA) accept as adequate and continue to use the format suggested by IICA for compiling information about the activities carried out in support of the animal health services in the Americas.

The publication of this document will be the responsibility of the agency which will assume the Technical Secretariat of the GICSA, during the corresponding year.

The Technical Secretary shall send the document to the Regular and Associate Members of GICSA, as well as to the Directors of Animal Health in the countries of the American hemisphere.

e. Emergency Manual on Exotic Diseases

Once the first draft of the manual is delivered by the consultant (Dr. Meyer), IICA will send a copy to each agency for its comments, whereupon each will return the document to IICA (Dr. Héctor Campos López) within four months. The final draft of the manual will be presented at the VII Regular Meeting of GICSA, where the procedure for its publication and distribution will be defined.

3. **Regulations of the Inter-American Group on Animal Health Coordination (GICSA)**

The final draft of the GICSA Regulations is attached to these minutes as Appendix I.

(Recommendation 4/1989)

Having analyzed the draft Regulations, the representatives of the participating agencies recommend approval, and commit themselves to submitting it to the official analysis of the corresponding authorities. It was agreed that, in the meantime, GICSA would function on the basis of such Regulations.

(The opinion of each agency shall be sent in writing to the FAO Representative in his capacity as GICSA Technical Secretary for the 1989 term.)

4. **Report of each agency on the technical cooperation activities scheduled for 1989/1990**

- a. Pan American Health Organization (PAHO)
- b. United Nations Food and Agriculture Organization (FAO)
- c. Inter-American Institute for Cooperation on Agriculture (IICA)
- d. International Office of Epizootics (OIE)
- e. International Regional Organization for Agricultural Health (OIRSA)
- f. Board of the Cartagena Agreement (JUNAC)
- g. Pan American Food-and-Mouth Disease Center
- h. Pan American Zoonosis Center (CEPANZO)
- i. U.S. Department of Agriculture (USDA/APHIS)

5. **Joint or complementary actions among participating agencies**

a. Relative to Quarantine and Emergency Systems in Animal Health

(Recommendation 5/1989)

The participants at the Sixth Regular Meeting of GICSA see fit to establish unified criteria on the concepts, strategies and methodology to be used in the activities of emergency systems in animal health quarantine.

To this end, it is deemed appropriate, and it is therefore recommended, for each agency to designate a representative to participate in a workshop to be held simultaneously with a similar event scheduled to be held in June 1989 by the Pan American Foot-and-Mouth Disease Center, in Guyana.

(The results, conclusions and recommendations of this workshop shall be reported at the Seventh Regular Meeting of GICSA.)

b. Program for the Eradication of Foot-and-Mouth Disease in the Andean Region

Considering that the Presidents of the Andean countries will soon meet, the Representatives of the Board of the Cartagena Agreement (JUNAC) requested the collaboration of the Pan American Foot-and-Mouth Disease Center in the preparation of a document that would consolidate the political will of the countries to implement and carry out a program for the eradication of foot-and-mouth disease. Both agencies agreed to collaborate and have the document ready as soon as possible.

c. Andean Network of Animal Health Laboratories

The IICA Representative requested the members of GICSA to implement, to the extent of their possibilities, complementary activities to reinforce the institutions which constitute the Andean Network of Animal Health Laboratories.

6. **Relative to the Seventh Regular Meeting of GICSA**

(Recommendation 6/1989)

The Representatives of the member organizations of GICSA accepted the proposal made by the FAO Representative for holding the Seventh Regular Meeting during the first quarter of 1990 at FAO's Regional Office for Latin America and the Caribbean in Santiago, Chile.

In accordance with Article V, section (c) of GICSA Regulations, the Technical Secretariat of the Group for the 1989 term shall be exercised by FAO.

7. **Recognitions**

a. In Memory of Dr. Pedro N. Acha

Upon the proposal of the OIRSA Representative, all the participants in the Sixth Regular Meeting of GICSA agreed to make a vote of recognition in memory of the professional merits of Dr. Pedro Acha as a distinguished member of this group.

b. The participants in the Sixth Regular Meeting of GICSA agreed to make a vote of recognition and appreciation to the Board of the Cartagena Agreement and to the Ministry of Agriculture and Livestock of Venezuela for their hospitality and excellent organization of the event.

8. Closing of the Meeting

The Meeting was officially closed at 17:00 hours on Tuesday, the 21st of February, 1989, by Mr. Fernando Lecuna, Representative of the Board of the Cartagena Agreement, in his capacity as Chairman of the Sixth Regular Meeting of GICSA, having congratulated the Group for its successful deliberations, and wishing them a happy return to their respective headquarters.

LIST OF PARTICIPANTS

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5. Joe Held	PAHO	525 23rd St., N.W. Washington, DC 20037 U. S. A.
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8. Dante Castagnino	IICA	Centro Villasmil Piso 11 No. 1102 Caracas, Venezuela
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10. Elmer Escobar C.	Pan American Zoonosis Center	Casilla 3092 Correo Central (1000) Buenos Aires, Argentina

<u>Name</u>	<u>Organization</u>	<u>Address</u>
11. Freddy Bohorquez B.	Director General, Livestock Development Center, Ministry of Agriculture and Livestock	Torre Este Parque Central Caracas, Venezuela
12. Roberto Cartaya	AGROSEGURO Asst. Mgr. of Live- stock Management	AGROSEGURO Caracas, Venezuela
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17. John H. Wyss	USDA/APHIS/IS	USDA/APHIS/IS Room 324-E Administr. B. P.O. Box 96464 Washington, DC 20090 U. S. A.
18. Carlos Barrera	Delegation of the European Community for Latin America	Av. Orinoco, Las Mercedes Caracas, Venezuela
19. Héctor Campos	IICA	Apartado 55-Coronado San José, Costa Rica
20. Raúl Casas	Pan American Foot-and- Mouth Disease Center	Caixa Postal 589 Río de Janeiro, Brasil

INTER-AMERICAN GROUP FOR COORDINATION IN ANIMAL HEALTH

BYLAWS

Caracas, February 20, 1989

INTER-AMERICAN GROUP FOR COORDINATION IN ANIMAL HEALTH

BYLAWS

Article I: NATURE AND CONSTITUTION

The Inter-American Group for Coordination in Animal Health, hereinafter called GICSA, exists as a mechanism to cooperate in and complement actions carried out in the field of animal health. It is hemispheric in scope and is made up of official representatives of the various programs, and international, regional and subregional agencies working in animal health in the Americas.

Article II: OBJECTIVES AND DUTIES

The primary objective of GICSA will be to create a forum for consultation and the exchange of information, for the purpose of:

- a. Avoiding duplication of efforts and encouraging complementary activity among GICSA members in the region.
- b. Sharing experiences related to animal health issues of common interest to the programs, and to international, regional and subregional agencies working in this field in the region.
- c. Developing systems and procedures for carrying out work in support of veterinary services in the region and for the operation of the agencies that belong to GICSA.

To achieve these objectives, GICSA will have the following among its duties:

- a. To serve as a consultative body and as a forum for sharing information and experiences related to animal health issues of priority to the countries in the region.
- b. To organize periodic meetings of the representatives of the member agencies for the purpose of analyzing important animal health problems and planning common strategies and alternatives for overcoming them.
- c. To create appropriate mechanisms as needed to enable the member agencies to forge closer ties and truly complement one another's activities and share information.
- d. To establish systems and procedures which will permit GICSA to carry out the tasks and responsibilities assigned to it by the member agencies.
- e. To contribute to planning, setting up, standardizing, and operating a hemisphere-wide epizootic information system.

Article III: MEMBERS

GICSA members will belong to two categories:

a. Regular Members

Those agencies in the Americas which are directly involved in animal health issues, or which, on a regular basis, carry out activities in specific related fields shall be regular members. Among these are:

- Pan American Health Organization (PAHO)
 - . Pan American Foot and Mouth Disease Center (PANAFTOSA)
 - . Pan American Zoonosis Center (CEPANZO)
- United Nations Food and Agriculture Organization (FAO)
- Inter-American Institute for Cooperation on Agriculture (IICA)
- Regional International Organization for Agricultural Health (OIRSA)
- Board of the Cartagena Agreement (JUNAC)
- International Office of Epizootics (OIE)

b. Associate Members

Those bilateral assistance agencies or programs which carry out or lend support to activities related to animal health in the Americas shall be associate members. Among these are:

- The Animal and Plant Health Inspection Service of the U.S. Department of Agriculture (USDA/APHIS)
- The U.S. Agency for International Development (USAID)
- The International Atomic Energy Agency (IAEA)
- The Office for International Cooperation and Development of the U.S. Department of Agriculture (OICD/USDA)
- The West German Agency for Technical Cooperation (GTZ)
- The Swedish International Development Authority (SIDA)
- The Canadian International Development Agency (CIDA)
- The Inter-American Development Bank (IDB)
- The International Bank for Reconstruction and Development (IBRD)
- The Andean Development Corporation (CAF)
- The Central American Bank for Economic Development (BCIE)
- The Japanese International Cooperation Agency (JICA)
- AGFUND
- Others

Article IV: AFFILIATION AND RESPONSIBILITIES

- a. The agencies and programs mentioned in the preceding article shall be notified of the founding of GICSA, and shall be invited to join the Group, through written communication.

- b. By joining GICSA, the regular and associate members commit their agencies to fulfilling the following responsibilities:
- To attend regular meetings convened by GICSA.
 - To participate actively in the development and implementation of general activities that have been approved and recommended during the GICSA meetings.
 - To accept voluntarily to carry out specific activities necessary to achieve the objectives of GICSA.
 - To provide all possible collaboration in strengthening complementary actions and promoting the exchange of information of interest to GICSA.
 - To keep the governing bodies of their agencies informed of the activities of GICSA.
- c. GICSA may extend an invitation to attend its meetings to any agency working in animal health in the world, whenever it is deemed advisable to do so, and when the experience of the agency can contribute to solving an animal health problem in the region.

Article V: ORGANIZATION AND OPERATION

GICSA shall meet at least once a year, and may convene special sessions to address animal health emergencies that require concerted action at the hemispheric, subregional or national levels.

a. Executive Committee

GICSA shall have an Executive Committee which will be made up of the representatives of the regular members.

The Executive Committee shall have the following major duties:

- To set the date, location and agenda of the regular and special meetings.
- To follow up on the implementation of the recommendations arising from the meetings.
- To carry out any complementary or follow-up actions which are planned.
- To nominate and elect the President and Technical Secretary of the regular and special meetings of GICSA.

b. President.

The Presidency shall be exercised by the representative of the agency hosting the meeting, who will retain this position until the following regular meeting. The President shall have the following duties and responsibilities:

- To preside over the corresponding GICSA meeting.
- To oversee the follow-up on and implementation of the recommendations and agreements arising from the meeting he/she presided over.
- To maintain ongoing contact with the Technical Secretary of GICSA for purposes of following up on the implementation of recommendations and agreements.
- To represent GICSA as necessary at events during his/her term of office.

c. Technical Secretary

The first item on the agenda of the regular meetings of GICSA shall be to set the site and approximate date of the following meeting; the Technical Secretary shall be the representative of the agency selected as the site of the following meeting.

The Technical Secretary shall retain this position until the next meeting, at which time he/she shall become President. The Technical Secretary shall have the following duties and responsibilities:

- To make his/her office available to serve as GICSA headquarters during the year for which he/she was elected.
- To invite the members of GICSA, and animal health authorities from the country providing the site, to the following meeting.
- To provide technical advice and logistic support to the President of GICSA.
- To collaborate in organizing the GICSA meeting.
- To obtain logistic and material support from the respective organizations for carrying out the meeting.
- To assist in keeping a record of all papers presented, discussions held and recommendations issued at the meeting.
- To provide support for the preparation, editing and publication of reports on the meeting, once same have been examined and approved by the appropriate authorities.

d. Language

During the regular and special meetings of GICSA, as well as in documents used or exchanged, either English or Spanish may be used. Simultaneous interpretation services will not be provided during the meetings, and it shall be the responsibility of the participating agencies to send bilingual representatives.

e. Funding

Travel expenses incurred to attend the meetings shall be covered by each respective agency. Each agency will use its own resources to cover its commitments with GICSA, except in those cases in which it is stated that other or complementary funds are to be used.

Article VI: DURATION AND AMENDMENTS

- a. These Bylaws shall take effect on the date of its signature by the representatives of the six regular member agencies, and shall remain in effect for an indefinite period of time.
- b. These Bylaws may be amended following consultation with and unanimous approval by the regular members.

For the Pan American Health Organization

Signature _____
Name _____
Position _____
Place _____
Date _____

For the United Nations Food and Agriculture Organization

Signature _____
Name _____
Position _____
Place _____
Date _____

For the Inter-American Institute for Cooperation on Agriculture

Signature _____
Name _____
Position _____
Place _____
Date _____

For the International Regional Organization for Agricultural Health

Signature _____
Name _____
Position _____
Place _____
Date _____

For the Board of the Cartagena
Agreement

Signature _____
Name _____
Position _____
Place _____
Date _____

For the International Office of
Epizootics

Signature _____
Name _____
Position _____
Place _____
Date _____

REORGANIZATION OF THE PAN AMERICAN ASSOCIATION
OF VETERINARY SCIENCES (PANVET)

René Dubois*

During the Tenth Pan American Congress on Veterinary Medicine and Zootechny, held in Buenos Aires, Argentina, in September 1985, representatives of the Veterinary associations of several countries met to discuss the reorganization of what was then called the Pan American Association of Veterinary Medicine and Zootechny, which, for different reasons, was not operational.

At that time, a group made up of representatives from Argentina, Brazil, Cuba and Peru, as well as from PAHO and IICA, was appointed to study the possibility of reorganizing the Association. Dr. René Dubois, of Brazil, was appointed President of the group.

On the occasion of the World Congress on Veterinary Medicine, held in Montreal, Canada, in August 1987, this group met with representatives from other countries of the Americas, and the decision was made to draw up new by-laws for the new Association. These bylaws would be discussed during a charter assembly to be held as part of the Eleventh Pan American Congress of Veterinary Sciences, to take place in August of 1988, in Lima, Peru.

On August 16, 1988, during the Lima meeting, the charter assembly was held and the new Pan American Association of Veterinary Sciences was founded, with the participation of representatives from Bolivia, Brazil, Canada, Chile, Costa Rica, Cuba, Dominican Republic, Mexico, Nicaragua, Peru and Venezuela, as well as an observer from Spain.

The proposed bylaws, which had been drawn up by the representative of IICA, were discussed and approved by the Assembly.

Shortly thereafter, on August 18, the First Regular Assembly of Delegates was held. During this Assembly, the following Board of Directors was elected:

President:	Dr. René Dubois, Brazil
Vice President:	Dr. Dióodoro Batalla, Mexico
Members:	Dr. Guy Lafreniere, Canada
	Dr. Celio H. Barreto, Nicaragua
	Dr. Raúl Hernández, Venezuela
	Dr. Alberto Delgado, Cuba

Dr. Héctor Campos, of IICA, was appointed to a two-year term as Executive Director, and IICA was asked to serve as temporary headquarters for the Association during his tenure.

* President of PANVET.

In accordance with the PANVET bylaws, during the Twelfth Pan American Congress of Veterinary Sciences, to be held in Havana, Cuba, from July 31 to August 4, 1990, a site for the permanent headquarters of the Association will be selected. Countries interested in serving as PANVET headquarters are invited to notify the Association.

There is considerable interest among the countries of the region in having PANVET become a dynamic and vital institution capable of providing leadership and guidance to professionals working in the field of veterinary science in the Americas.

During the congress in Havana, further work will be done to strengthen the Association.

FECHA DE DEVOLUCION

IICA
PRRET-A1/SC-89-13

Autor

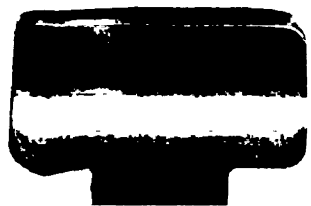
Proceedings of the III Meeting

Título of the inter-american commis-
sion on animal health

Fecha
Devolución

Nombre del solicitante





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