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MINUTES OF DISCUSSIONS BETWEEN
THE JAPANESE PROJECT DESIGN TEAM AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE UNITED MEXICAN STATES
ON JAPANESE TECHNICAL COOPERATION
FOR THE PROJECT FOR THE IMPROVEMENT OF REGIONAL VETERINARY
DIAGNOSTIC SERVICES IN JALISCO STATE

The Japanese Project Design Team (hereinafter referred to as "the Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Hirohiko Sano, visited the United Mexican States from July 8, 2001 to July 19, 2001 for the purpose of working out the details of the technical cooperation program concerning the Project for the Improvement of Regional Veterinary Diagnostic Services in Jalisco State (hereinafter referred to as "the Project").

During its stay in the United Mexican States, the Team exchanged views and had a series of discussions with the Mexican authorities concerned in respect of the desirable measures to be taken by both governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Mexican authorities concerned agreed to recommend to their respective governments the matters referred to in the document attached hereto. This Minutes of Discussions are considered as a supplement document of the Record of Discussions which is signed at the same time.

These texts were prepared in both English and Spanish, with each text being equally authentic. However in case of any divergence of interpretation, the English text shall prevail.

Mexico City, July 18, 2001

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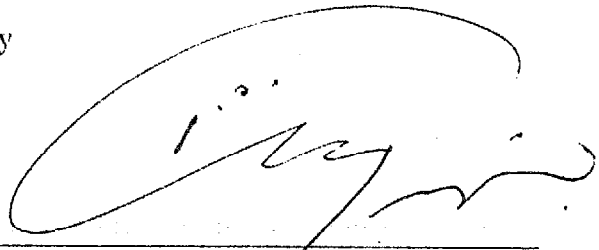
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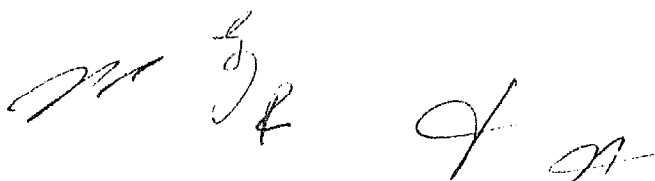
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LIST OF ABBREVIATION

SAGARPA: Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food

COMITE: Committee for the Foment of Livestock and Animal Protection in the State of Jalisco

SEDER: Secretariat of Rural Development, Government of Jalisco State

CENASA: National Center of Diagnostic Services for Animal Health

El Salto Lab: Regional Reference Laboratory for Animal Pathology of El Salto in the State of Jalisco

IMEXCI: Mexican Institute for International Cooperation

VAT: Value-added Tax

M. J. F. S. L.

ATTACHMENT

1. PROJECT FRAMEWORK

The Team and the Mexican authorities have jointly formulated the Project Design Matrix (hereinafter referred to as "PDM") shown in ANNEX 1 and the Tentative Schedule of Implementation (hereinafter referred to as "TSI") shown in ANNEX 2. The PDM and TSI will be revised upon the approval of the Joint Coordinating Committee within the framework of the Record of Discussions when necessary arises in accordance with the progress of the Project.

2. RESPONSIBILITY OF SAGARPA

SAGARPA is responsible for coordinating and supporting the Project activities. In case problems arise, the related authorities concerned should hold discussions to solve the problems. The Project Organizational Chart is shown in ANNEX 3.

3. BUDGET ALLOCATION BY THE MEXICAN SIDE

For the smooth and effective implementation of the Project, SAGARPA must allocate timely, a sound budget required for the local cost of the Project, including VAT imposed in the United Mexican States on the equipment provided by the Project in order to initiate the Project in 2001.

4. ASSIGNMENT OF COUNTERPART PERSONNEL

SEDER is responsible for assigning the necessary number of full-time counterpart personnel from SEDER, SAGARPA and COMITE to work with the Japanese experts in El Salto Lab. SEDER confirmed to assign the same counterpart personnel throughout the cooperation period of the Project. List of counterpart and administrative personnel shown in ANNEX 4.

5. MAINTENANCE OF EQUIPMENT

SEDER is responsible for maintaining of machinery, equipment and other materials provided by the Project. Provided machinery, equipment and other materials must be utilized for the activities under the Project purpose in El Salto Lab.

6. RESPONSIBILITY OF PROJECT COORDINATOR OF MEXICO

The Project Coordinator should play the role in negotiating with Mexican authorities concerned such as SAGARPA, SEDER and COMITE for the Project as well as coordinating the Project in El Salto Lab.



7. OFFICE AND NECESSARY UTILITIES FOR THE EXPERTS

The Mexican authorities will provide office spaces for Japanese experts, equipped with basic furniture as well as utilities of direct dialing international telephone line and access points to internet provider.

8. PROJECT DOCUMENT

The Team and the Mexican authorities have jointly prepared the Project Document for the implementation of the Project as shown in ANNEX 5. The Project Document is important to share consensus on any issues related to the Project, such as its background, strategy, purpose, activities, outputs and inputs.

9. EXTENSION OF THE OUTPUTS OF THE PROJECT

The target area of the Project is focused on Jalisco State. Therefore, during and after the Project, SAGARPA should make self-reliant efforts to disseminate the technology and system introduced through the Project to other states. CENASA will play the main role in coordinating as well as supporting this extension, while the organizations concerned in Jalisco State will be required to support the efforts made by SAGARPA.

10. ASSISTANCE OF CENASA

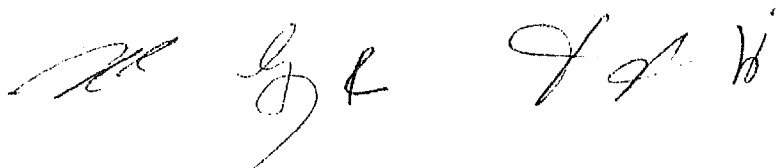
CENASA will give assistance to the Project in respect of supplying of diagnostic reagent, standardization of diagnostic technology and training of El Salto Lab personnel.

11. CONDITIONS FOR THE COMMENCEMENT OF THE PROJECT

The Mexican authorities must allocate necessary budget for the payment of the VAT imposed by the regulations in the United Mexican States on the Equipment granted to El Salto Lab, assign the Project Coordinator in El Salto lab, and transfer diagnostic works to El Salto Lab completely before the commencement of the Project.

12. SUBMISSION OF A-1 AND A-4 FORMS

The Mexican authorities have assured that it will submit both A-1 and A-4 form, which will request the dispatch of long-term JICA experts and supply of equipment, to JICA office in Mexico through the official procedures by the beginning of August 2001, in order to enable the Project to commence smoothly by October 2001.



LIST OF ANNEX

ANNEX 1. Project Design Matrix (PDM)

ANNEX 2. Tentative Schedule of Implementation (TSI)

ANNEX 3. Project Organizational Chart

ANNEX 4. Plan of Assignment of Counterpart Personnel

ANNEX 5. Project Document

M. G. K. J. A. V.

ANNEX 1

Project Design Matrix of The Project for the Improvement of Regional Veterinary Diagnostic Services in Jalisco State (Version 1)

Term of Cooperation : 5 years from Oct. 2001

Target Area : Jalisco State

Target Group: Livestock Farmers in the Target Area

2001.7.18

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
(Overall Goal) Animal health status is improved in the State of Jalisco.	Phase of campaign disease is improved.	Statistics in Jalisco State	1. Government's programs for animal health are continued and further strengthened. 2. Important animal infectious diseases are not introduced from other states
(Project Purpose) The integrated diagnostic system is strengthened at the laboratories of the COMITE in the State of Jalisco.	The campaign disease can be diagnosed in El Salto Lab	1. Annual report of El Salto Lab 2. Statistics of SIVE	1. The results of diagnosis are reflected to the animal health policy of Jalisco. 2. Livestock farmers fully participate in animal health programs
(Outputs) 1. Fundamental diagnostic techniques is improved at El Salto Lab in the State of Jalisco. 2. Diagnostic techniques for important animal infectious diseases are improved at El Salto Lab 3. Diagnostic techniques are improved at all laboratories of the COMITE in the State of Jalisco.	1. No. of fundamental diagnostic techniques will be increased according to the check list. 2. xx kinds of important animal infectious disease will be diagnosed in El Salto Lab. 3. No. of requested disease inspection will be increased at the laboratories of the COMITE.	1. Check list 2. Progress report of the Project 3. Annual report of the COMITE	1. Sufficient numbers of field materials in acceptable form are gathered at the laboratories of the COMITE. 2. The results of diagnosis are fed back to users for better farm management. 3. A quality control system is working at the laboratories.
(Project Activities) 1. Improve fundamental diagnostic techniques 1-1 Fundamental virological diagnostic techniques 1-2 Fundamental bacteriological diagnostic techniques 1-3 Fundamental pathological diagnostic techniques 2. Improve diagnostic techniques for important animal infectious diseases 2-1 Virological diagnostic techniques for important diseases 2-2 Bacteriological diagnostic techniques for important diseases 2-3 Pathological diagnostic techniques for important diseases 3. Training for technicians of other laboratories of the COMITE in the State of Jalisco.	(Input) I. Japanese side 1. Dispatch of Japanese experts 1-1. Long-term experts (Chief Advisor, Project Coordinator, Experts in specialized fields) 1-2. Short-term experts (when necessity arises) 2. Provision of equipment 3. Training of Mexican counterparts in Japan II. Mexican side 1. Assignment of counterpart personnel 1-1. Project Director 1-2. Project Manager 1-3. Project Coordinator 1-4. Counterparts in each field (Virology, Bacteriology, Histopathology, etc.; At least 2 persons for each) 1-5. Administrative staff (secretary, other supporting staff) 2. Provision of land and facilities for the Project 3. Provision of funds for local costs of the Project	1. Counterparts continue working for the Project. 2. Necessary budget is allocated to El Salto Lab. 3. Budget for facilities and staffs of the other laboratories of the COMITE is secured.	(Preconditions) 1. Construction of El Salto Lab with installation is completed. 2. Necessary budget for fiscal year 2001 is secured to El Salto Lab. 3. Routine work is implemented in El Salto Lab. 4. Necessary staffs are allocated 5. Even after the change of Federal and State governments, the basic policy for animal health is not changed extensively. 6. CENASA and other organizations concerned provide necessary support to the Project

ANNEX 2.

Tentative Schedule of Implementation

2-1 Work Plan

Activities	Year	1 st	2 nd	3 rd	4 th	5 th
	1. Improve fundamental diagnostic techniques					
1-1 Fundamental virological diagnostic techniques						
1-2 Fundamental bacteriological diagnostic techniques						
1-3 Fundamental pathological diagnostic techniques						
2. Improve diagnostic techniques for important animal infectious diseases						
2-1 Virological diagnostic techniques for important diseases						
2-2 Bacteriological diagnostic techniques for important diseases						
2-3 Pathological diagnostic techniques for important diseases						
3. Training for technicians of other laboratories of the COMITE						

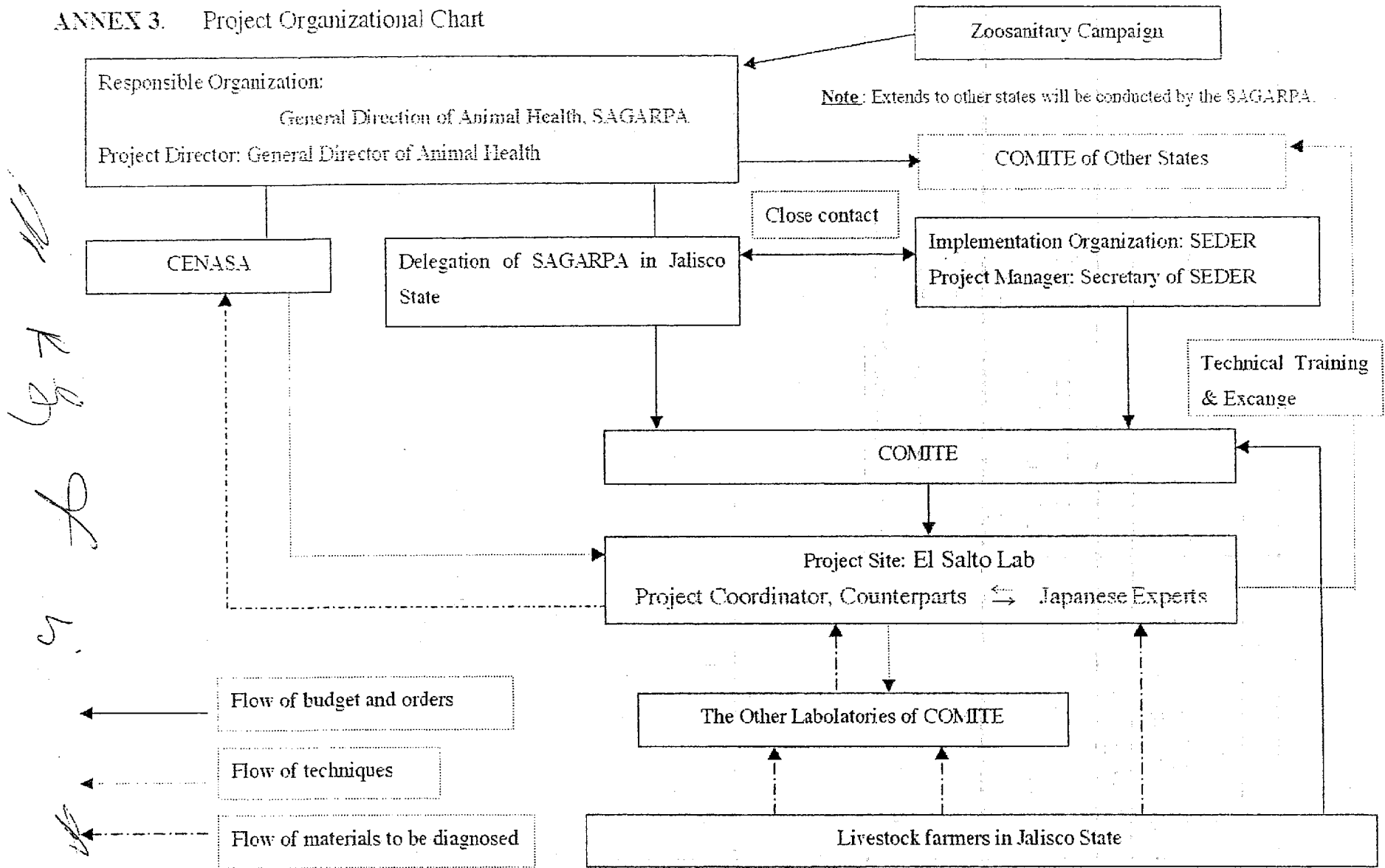
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2-2 Technical Cooperation Program

Item	Year				
	1 st	2 nd	3 rd	4 th	5 th
Japanese Side					
1. Dispatch of Japanese experts					
1) Long-term experts					
a. Chief Advisor					
b. Project Coordinator					
c. Virology					
d. Bacteriology					
e. Pathology					
*The chief Advisor may serve concurrently as an expert in one of the fields mentioned above.					
2) Short-term experts					
2. Provision of equipment and machinery					
3. Training of Mexican personnel in Japan					
4. Dispatch of Missions					
Mexican Side					
1. Assignment of counterpart personnel and administrative staff					
1) Project Director					
2) Project Manager					
3) Project Coordinator					
4) Counterpart personnel in the following fields					
a. Virology					
b. Bacteriology					
c. Pathology					
5) Administrative personnel					
6) Secretaries for Japanese experts					
7) Other necessary support staff					
2. Provision of land, buildings, and other necessary facilities					
3. Supply or replacement of equipment, machinery and other materials other than those provided by the Government of Japan					
4. Allocation of current expenses					

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ANNEX 3. Project Organizational Chart



ANNEX 4.

Plan of Assignment of Counterpart Personnel

Position/Section	Name
Project Director	MVZ Juan Garza Ramos
Project Manager	ING Rodrigo Diez de Sollano Elcoro
Project Coordinator	
Chief of El Salto Lab	
Virology	MVZ Alonso Galán Coronado
	MVZ Elvia Sánchez González
	TQ Verónica González Facundo
Bacteriology	MVZ Mónica Meza Bañuelos
	MVZ Rosario Vargas Serrano
	MVZ Luis Humberto Chávez Bugarin
	MVZ Javier Borja Contreras
Pathology	MVZ Rubén Echeveste García de Alba
	MVZ Gustavo Ríos García
Administrative staff	MVZ Enrique Espinoza Camarena
Secretaries	Apolonia Alejandrina Terán Castro
Drivers	
Other staff	Enrique Ocadeo Reyes
	Rocío Ríos Romelí

MVZ: Medical Veterinarian Zootechnique

TQ: Chemical Technique

ING: Engineer

M R G F A B

**Project Document for the Project for the Improvement of
Regional Veterinary Diagnostic Services in Jalisco State.**

M G R F A G

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I. Introduction

While Mexico has achieved favorable economic growth recently, the income gap is increasing. Especially, the income gap between cities and agricultural villages has caused the decline of agricultural villages and the enlargement of urban informal sectors through the migration of population. In the agricultural villages, promotion of industry and creation of employment are the urgent subjects at present.

From the standpoint of industrial promotion in agricultural villages, the livestock industry that can effectively use the vast natural grasslands and pastures is prospective. As there are various livestock diseases in Mexico, the economic losses caused by the disposal of domestic animals or livestock products or the limitation of movement of these animals to outside areas are large.

In order to improve the animal health, the government of Mexico requested the Japanese government for the project-type technical cooperation called a "Improvement of regional veterinary diagnostic service" with the purpose to improve local animal health diagnosis facilities and diagnostic technologies

In response to the above mentioned request, the government of Japan dispatched a preliminary study group in April 1999 and a short-term study group in November 1999 to examine the aptness of the grant aid project and the scope of cooperation. Then, in December 2000, the government of Japan dispatched a second short-term study group, held a PCM workshop based on the previous study results, and formulated and agreed the PDM (Ver.0) and a temporary implementation plan (TSI) as well as an implementation system drawing.

This document was formulated based on the previous study results in order to indicate the total image of the Project. After analyzing the social situation of Mexico and the problems in the said field, the document explains how to solve these problems during the implementation the Project.

II. Background for the Project Implementation

1. Social situation

Mexico fell in a critical state due to the currency crisis in 1994. However, partly because it was supported by the boom of the American economy, Mexico achieved economic growth consecutively for four years since 1996. The per capita income in 1998 was 3,840 dollars, which places Mexico in the medium to high income countries according to the Development Assistance Committee (DAC) Classification. However, while the macro economy became favorable, the income gap has rather increased in the last several years. Especially in the agricultural villages with a population of less than 2,500 people, 60% of the households are considered to live under the poverty line.

Due to the above mentioned income gap, the migration of the population to the cities has progressed rapidly with a drastic increase of the ratio of urban population among the entire population from 51% in the 1960s to 75% in the latter half of 1990. The decline of agricultural villages and the enlargement of urban informal sectors are causing serious social problems. Under these circumstances, promotion of industry and creation of employment in agricultural villages are considered the urgent subjects.

2. State of the agricultural livestock industry

The agriculture of Mexico accounts for only 5% of the GDP. However it is still very important for the economy, providing employment to approximately 30% of the work force.

The land area of Mexico is 1.97 million km² (about five times larger than that of Japan), 50% of which are mountains of more than 1000 m above the sea level. The weather in Mexico is full of varieties: the northern areas bordered by the U.S.A. are dry lands, the middle areas consist of highlands and mountainous areas, and the southern areas consist of flat tropical and sub-tropical areas. The agriculture and livestock industries have developed by conforming to the state of each area.

Among others, the livestock industry is important because it can use the natural grasslands and pastures that account for 38% of the land area and are not proper for other products, and yet can reduce the income gap between cities and agricultural villages by creating income and securing employment in agricultural villages.

As for the livestock industry of Mexico, commercial and cooperative diversified breeding is advanced in the northern areas. However in the central and southern areas, small-scale stock raising is still the mainstream, which plays a part of the complex agriculture.

The number of each type of domestic animals is shown in Table 1.

Table 1 Numbers of domestic animals bred in Mexico (Unit: 1,000 animals, Chickens are counted in the unit of million.)

	1995	1996	1997	1998	1999	2000
Cattle	32,191	29,301	30,772	30,500	30,298	30,293
Equidae	6,200	6,183	6,250	6,250	6,250	6,250
Swine	15,923	15,405	15,735	14,994	13,855	13,690
Sheep	6,195	6,183	5,987	5,990	5,900	5,900
Goat	10,133	9,567	9,208	9,381	9,600	9,600
Chicken	359	391	366	431	450	476

Source: Fishery and Agricultural Organization (FAO) statistics

Table 2 Number of domestic animals bred in Jalisco Province (in 2000)

	Number of bred animals
Dairy cattle	843,179
Beef cattle	2,287,431
Swine	2,234,659
Chicken (for meat)	28,238,898
Chicken (for egg)	37,820,497

Source: SAGAR statistic material

Ninety percent cattle are beef cattle. Most beef cattle are Zebu cows of tropical breed, but there also are many hybrids of European dairy cattle such as Brown Swiss. Recently, in the northern dry areas, there are not a small number of large-scale feed lot fattening farmers having several ten thousand cows. Most of the dairy cattle are Holstein, Friesian, and their hybrids. They are mostly raised in the central highland states such as Jalisco, Michoacan, and Tamaulipas.

Approximately 35% of pig in the entire country are raised in Jalisco, Sonara, and Guanajuato states. Just like in Japan, pig breeds are Durok, Hampshire, Yorkshire, Landrace and their double and triple hybrids. As the operating form, commercial large-scale livestock businesses having more than 1,000 pigs are rapidly increasing mainly near cities. However small-scale pig raising in yards still accounts for almost 20% of the entire number of pigs raised.

Chickens in Jalisco, Puebla, and Mexico states account for approximately 35% of the entire number of chickens.

Goats and sheep are called the livestock of poor farmers. They are raised in uncultivated lands or mountainous areas where the raising of beef cattle is difficult. They contribute to local community as the source of cash income for small farmers.

Mexico is a prominent livestock producing country in Central and South American countries. However regardless of the number of animals raised in the country, Mexico recently has an adverse trade balance. In other words, the living cattle are excessively exported (Feedlot cattle for the U.S.A.), but living pigs, meats (especially beef and chicken meats), milk, and dairy products are excessively imported (Table 3). Therefore, promotion of domestic livestock industry is necessary from the standpoint of self-support of foods.

However, there still exist various infectious diseases of livestock in Mexico. Therefore, drastic political measures to prevent and eradicate the important infectious diseases causing large economic losses are important.

Table 3 Import and export of livestock and meat products of Mexico (2000)

	Cattle	Swine	Chicken	Sheep	Goat	Equidae	Meats (in 1,000 tons)
Import	192,529	201,186	2,929,000	436,921	65,900	9,327	926
Export	959,928	4	0	925	0	1,371	51

Source: FAO trade statistics

3. Strategy of the government of Mexico

The federal government of Mexico indicated a policy to address the strengthening of local central diagnostic facility closely related with local communities, which are indispensable for strengthening the diagnosis and supervision of infectious diseases, supervision of slaughter houses, and animal health campaign of national and local levels as the important subject.

Especially in Jalisco State where the improvement of animal health is delayed in spite of its being an important state of livestock industry and there are relatively large number of small-to-medium farmers (registered livestock farmers of 100,000 or more, 190 local associations, and 4 local cooperatives, the federal government of Mexico has a policy to strengthen and establish the livestock diagnosis system mainly at the local central diagnosis facility and develop facilities in other states by using the local central diagnosis facility in Jalisco State as a model.

4. Past projects related to the livestock industry

In the past, the government of Mexico implemented various projects of animal health by itself or with the support of foreign countries. Some of the typical projects are shown below.

1) Animal Health campaign

At present, the government of Mexico is implementing a control and eradication campaign by declaring a goal for specific diseases throughout the country. The important diseases (eight diseases) which are urgently needed to be eradicated in Jalisco State and the target fiscal year to achieve the eradication of these diseases are as follows. The amounts that Jalisco State contributed to the campaigns of 1996 and 2000 were 68.2 million pesos (approximately 700 million yen) in which 175,269 farmers participated.

Bovine brucellosis	2008
Bovine tuberculosis	2008
Bovine paralytic rabies	Not decided yet.
Tick extermination	Not decided yet.
Hog cholera	2004
Aujeszky disease	2005
Avian influenza	2002
Newcastle disease	2002
Avian salmonellosis	2002

The main activity of the control and eradication campaign of livestock diseases in Jalisco State is the epidemiological study of diseases of which the eradication has been advanced (three avian diseases and two swine disease) mainly by using serum monitoring.

The cows infected with the above mentioned three bovine diseases are separated and slaughtered if they are determined positive by diagnosis as the policy of the state government. However due to the problem of compensation money, the test and slaughter method is not established yet. Transfer of living livestock and livestock products inside or outside the state is strictly done through the animal quarantine system managed by the state government.

2) The Animal Health Center Project

The government of Mexico implemented a "The Animal Health Center Project" from 1981 at the present National Center for Diagnostic Service for Animal Health (CENASA) with the project-type technical cooperation of JICA for the purpose of diagnosing swine cholera, mass production of GP vaccines for pig cholera, and establishing a national certification system of vaccines. The technical cooperation of Japan was provided for six years including the follow-up. Furthermore, a two-year after-care cooperation was provided from 1990.

In the said Project, altogether thirty-seven experts were dispatched from Japan for both short and long terms basis and twenty-two trainees were accepted in Japan. Furthermore, equipment worth 470 million yen was supplied.

While the said Project was being implemented, a Hog cholera Control Program was implemented by using domestic vaccines at the national level. Afterwards, manifestation of swine cholera was drastically reduced, and the initial objective was almost achieved.

- 3) The U.S. - Mexico Committee (CPA) for the prevention of foot-and-mouth disease and other foreign livestock diseases

The government of Mexico has been involved in activities in the animal health field in close cooperation with the U.S.A. as one of the North American countries. In 1954, for the purpose of eradicating the foot-and-mouth disease, a U.S.- Mexico Committee (CPA) was established to prevent the foot-and-mouth disease and other foreign livestock disease. The CPA has already eradicated the foot-and-mouth disease and Venezuelan equine encephalomyelitis. At present, the CPA is monitoring and analyzing the properties of diseases not existing in Mexico.

III. Development Problem and Present Situation of Animal Health

1. Systematic framework of Animal Health

The government of Mexico proclaimed a Federal Law on Animal Health on June 18, 1993 in order to eradicate livestock diseases as well as to eradicate and strengthen the prevention of harmful insects. Then in the presidential election of July 2000, the administrative party changed after more than forty years. On December 1, 2000, President Fox took the office and is now reforming the administrative organs.

In the field of agriculture field, Secretariat of Agriculture, Livestock, Rural Development, (SAGAR) were strengthened and its name was changed to the Secretariat of Agriculture, Livestock, Rural Development Fisheries and food (SAGARPA). In the field of animal health, improvement of livestock hygienic state and establishment of disease free zone are demonstrated.

The General Direction of Animal Health (DGSA) governs the operations related to animal health. Under the DGSA, there are three organizations, CENASA, CENAPA, and CPA as the central laboratories directly governed by the federal government.

The CENASA covers the diseases usually existing in Mexico and implements the following.

- (i) Diagnosis of important livestock diseases and implementation of disease eradication campaign
- (ii) Provision of reagents for diagnosis necessary for the diagnosis and disease eradication campaign
- (iii) Education and training of veterinarian employed by local diagnosis facilities
- (iv) Examination and approval of pharmaceutical products, feeds, and medical equipment for animals

The CENAPA conducts the following.

- (i) Diagnosis of parasite infections
- (ii) Maintenance of the standard genealogies of ticks and parasite flies
- (iii) Generation of diagnostic antigens
- (iv) Approval of drugs and foods to be registered to the SAGARPA
- (v) Residual examination of microbes, antibiotic substances, hormones, and heavy metals in foods

The CPA monitors and analyzes the properties of diseases not usually existing in Mexico, collects the data on the manifestation state of infectious diseases at the federal level, formulates the materials for publicity on the disease prevention of infectious diseases. It also has branch offices in local areas and can collect the samples necessary for monitoring the infectious diseases by itself.

As the local Animal Health organizations, local livestock disease diagnosis facilities are located throughout the country. These facilities are divided into four levels according to the scale as (i) local central diagnosis laboratory, (ii) local diagnosis laboratory, (iii) small diagnosis laboratory, and (iv) moving diagnosis laboratory.

The government of Mexico is proceeding to the decentralization and the privatization. In the agricultural and livestock-raising field, it is implementing a program called "Alianza para el Campo, meaning the alliance for agricultural villages" as the Animal Health Program. CONSAG formulated the proper programs to be implemented by the SAGARPA, the state government, and private companies. As the producers' organization to implement this program under the guidance of the SAGARPA and the state government, there is a COMITE in each state.

The budget for the COMITE is contributed by the SAGARPA of federal government, the state government, and private companies. The above mentioned local hygienic organizations are operated by the COMITE of each state at present. The livestock disease eradication campaign is also implemented mainly by the COMITE as a part of the "Alianza para el Campo" Program.

Jalisco State contributed 6,266,000 pesos (approximately 750 million yen) to this Alianza in FY 2000 and the federal government contributed 117.3 million pesos (approximately 1.4 billion yen) to the same Alianza to implement campaigns.

2. Development problem and present situation of Animal Health

In Mexico, there still exist various diseases that are no longer in Japan because they have been already eradicated. These diseases cause the reduction of productivity. Table 4 shows the manifestation state of important livestock diseases (Lists A and B diseases) in 1999 based on the reports of OIE.

Table 4 Manifestation state of livestock diseases in Mexico (1999)

	Number of manifested cases	Number of infected cattle	Number of deaths
List A diseases			
Foot-and-mouth disease	None (last year of manifestation; 1954)		
Vesicular stomatitis	1	15	0
Hog cholera	44	6837	3802
Avian influenza	0		
Newcastle disease	48	18322	11044
List B diseases			
Anthrax (bovine)	4	48	48
Aujeszky disease	4	541	538
Rabies (bovine)	318	657	657
(canine)	317	317	317
Tuberculosis (bovine)	1421	3392	2405
Bovine brucellosis	3932	35936	173

Source: OIE report on world Animal Health in 1999

Tuberculosis and bovine brucellosis were manifested in cattle, hog cholera and Aujeszky disease were manifested in swine, and avian influenza and Newcastle disease were manifested in chickens. Control and eradication of these diseases constitute the important subjects in developing the livestock industry in Mexico.

As mentioned above, in Jalisco State, the following diseases are considered to be the important diseases that need urgent eradication.

Bovine diseases: 1) brucellosis, 2) tuberculosis, 3) rabies (hydrophobia)

Swine diseases: 1) swine cholera 2) Aujeszky disease

Avian diseases: 1) avian influenza, 2) Newcastle disease, 3) salmonellosis

On the other hand, as mentioned in the previous Section, the total diagnosis system of livestock diseases is already prepared in Mexico as well as the three laboratories of CENASA, CENAPA, and CPA directly governed by the Animal Health Bureau have excellent abilities. While local animal health organizations are different depending on the area, and most of them have low diagnostic functions because of insufficient facilities, equipment, and staffs.

For this reason, a large quantity of samples that cannot be diagnosed in local laboratory sent to the central laboratories, especially to the CENASA that diagnoses the diseases always existing in Mexico. Because of this situation, it takes long time until the results of diagnoses are fed back to clinical sites, which also causes serious problem in preventing the livestock diseases that must be handled promptly at the time of manifestation. In addition, the CENASA is busy with daily diagnoses and cannot have the reference function which it is required originally.

Furthermore, the animal health information is not delivered to the livestock farmers who are the terminal producers in many states. Therefore, even if an important disease is manifested, it takes time until the information on the manifestation reaches the central laboratory. Large-scale farmers employ their own veterinarians, but the number of the veterinarians that can handle small farmers is extremely limited. The technical level of the veterinary doctors at site has not reached the satisfactory level in many cases. Therefore they need regular education and training.

3. Strategic significance of Japanese grant aid

"Industrial development and community promotion" is indicated as one of the important fields of Japanese assistance to Mexico. In response to this policy, the JICA project implementation plan of each country for FY 2000 declared to support the promotion of local development mainly on agriculture, livestock raising, and fisheries. Livestock promotion is expected as one of the measures to solve the poverty problem in poor villages where the measures to obtain income and employment opportunities are less. As the improvement and strengthening of diagnosis system based on the improvement of livestock diagnostic technology is indispensable for the promotion of livestock industry, the Project is within the grant aid strategy of Japan.

IV Project Strategy

1. Project strategy

As mentioned in the previous section, there are various livestock diseases in Mexico. While the examination system and manual to handle these diseases have been elaborated, improvement of animal health has not materialized because the functions of terminal diagnosis facilities are inadequate.

For this reason, the government of Mexico has started to strengthen the functions of local central livestock diagnosis laboratory, diagnose most livestock diseases at local central livestock diagnosis laboratory, and make the CENASA as the specialized central diagnosis reference laboratory. Furthermore, education and training of veterinary doctors are planned to be conducted mainly at the local central livestock diagnosis laboratory.

The Project shall support the Mexican government in handling the above mentioned concept. The Project shall also improve the diagnostic technologies at the local central livestock disease facility of Jalisco State (El Salto Lab.) as well as train the employees related to animal health such as veterinary doctors in contact with livestock farmers and strengthen the livestock disease diagnosis system in local communities closely and directly connected with livestock farmers.

The project shall also strengthen the federal and state governments by keeping close linkage with the CENASA, the CENAPA, and the CPA of the federal government.

Table 6 Output of livestock products in Jalisco State, Mexico (1998)

Livestock products	Order	Livestock products	Order
Beef	1	Egg	1
Pork	1	Milk	1
Chicken	2	Honey Bee	2

Source: SAGAR statistics

Jalisco State is the top livestock state in Mexico in raising pigs and chickens, and dairy farms (Table 6). On the other hand, compared with northern states, Jalisco State has difficulty in improving the animal health because it has many small-to-medium livestock farmers. Therefore, improvement of animal health is expected to give significant effects to the livestock industry of all over Mexico. The diagnosis system model to be established in Jalisco State by the Project and the diagnostic technologies transferred to the counterpart of El Salto Lab. by the Japanese experts shall be extended to other states through various training, lectures, and extension activities to be conducted by the DGSA.

2. Project implementation system

1) Abilities of the counterpart organization

a. Aptness of the counterpart organization

SAGARPA DGSA, which is the responsible organization, has the responsibilities and rights to determine the animal health policy of Mexico. No other organization can be considered as the one to extend the model to be established by the technical cooperation of Japan and the diagnostic technologies transferred from Japan to other states.

SEDER, which is the implementation organization of Jalisco, has the responsibilities and rights to determine the policy on agriculture, livestock, fisheries, and foods in Jalisco State. Therefore, it is an optimal organization to take the implementation responsibilities of the Project to be provided to Jalisco State.

The El Salto Lab, which is the project site, is the largest and the highest level livestock diagnosis laboratory in Jalisco State and constructed for the target of having a livestock disease diagnosis ability of 40,000 cases per month. It also has the role to integrate other COMITE laboratories. Therefore it is the most apt organization to transfer the diagnostic technologies.

b. Budgetary measures

The El Salto Lab. is operated by the COMITE. Compared with other simple governmental organizations, it is financially stable because of the direct participation of beneficial representatives (livestock farmers). The budget for implementing the animal health policy consists of the budget of the "Alianza a para el Campo" supplied by the federal and the state governments, and the budget of COMITE collected from the producers groups. The budget of the "Alianza para el Campo" is appropriated to the facility and equipment costs and the personnel expense of staffs of the SAGARPA. On the other hand, the budget of COMITE is appropriated to the operating cost and the personnel expenses of the staffs of the COMITE. Table 7 shows the recent budgetary achievements of Tlaquepaque Laboratory, forerunner of El Salto Lab.

**Table 7 Recent budgetary achievements of Tlaquepaque Laboratory
(not including the construction cost of El Salto Lab.)**

		1998	1999	2000 (from Jan. to Oct.)
Salary	Alianza para el Campo	226,245	260,572	294,645
	COMITE	69,751	159,318	700,947
Operating cost	Alianza para el Campo	0	0	0
	COMITE	86,694	314,871	613,123
Facility and equipment	Alianza para el Campo	170,000	135,640	221,065
	COMITE	0	0	0
Total		552,690	870,401	1,829,780

(Unit: peso, 1 peso = approximately 12 yen)

Additional budgets of the "Alianza para el Campo" of 2 million pesos for FY 1999 and 2.5 million pesos for FY 2000 were appropriated for the construction of El Salto Lab.

The budget of El Salto Lab. in FY 2001 has been already secured from the budget of "Alianza para el Campo" of 2.5 million pesos and the COMITE budget of 1 million pesos. During the implementation and after completion of the Project, sufficient budget can be expected for El Salto Lab. as an indispensable organization for promoting the livestock industry of Jalisco State and surrounding states.

c. System in general

The implementation system drawing of the Project is shown in Figure 1. The responsible organization is SAGARPA DGSA of the federal government of Mexico, and the Project Director is the Director of the Animal health Bureau. The implementation organization is the SEDER and the Project Manager is the Director of the SEDER. The COMITE operates El Salto Lab. and other COMITE laboratories under the supervision of the SAGARPA and the SEDER. The Project site is El Salto Lab, where an exclusive Project Coordinator to supervise the Project every day shall be assigned. Advanced technologies shall be extended from El Salto Lab to other COMITE laboratories in Jalisco through the training and so on. The CENASA shall be a technical liaison as a liaison organization as well as supply necessary materials to El Salto Lab such as serum and cells.

d. Operating ability of El Salto Lab

El Salto Lab is an organization managed by the COMITE and operated under the supervision and instruction of the SAGARPA and the SEDER. The Project Coordinator of Mexican side shall always stay in El Salto Lab, where he/she will operate and manage the laboratory as a fulltime staff. This Project Coordinator shall contact the Team leader of the Japanese side on a daily basis to discuss all the project problems with the Japanese experts. He/She shall directly meet the chairman and the directors of COMITE, representatives of associations, and the Director of SEDER who is the Project Manager to discuss important subjects of the Project such as on budget, personnel, and future plan of the Project. On the other hand, the technical chief of Laboratory shall handle the technical problems of Laboratory as before.

e. Review on the securing of counterparts

The number of technical staffs of El Salto Lab at the time of transfer is altogether twelve (Table 8). However under the budget of FY 2001, increase of staffs, six technical staff and four secretary and maintenance assistants, is already determined. After FY 2002, the number of the staffs of diagnosis laboratory shall not be fixed, but can be increased by matching to the increase of the amount of operations.

Table 8 Number of staffs at El Salto Lab.

	No. of present staffs	No. of staffs for 2001
Technical department	(12)	(+6)
Virus	3	1
Bacteria	3	1
Separation of tuberculosis bacteria	1	1
Serology	2	1
Pathology	2	1
Laboratory	1	
Parasite	0	1
Administration department	(3)	(4)
Secretary	1	1
Cleaning	1	2
Security	1	1
Total	15	+10

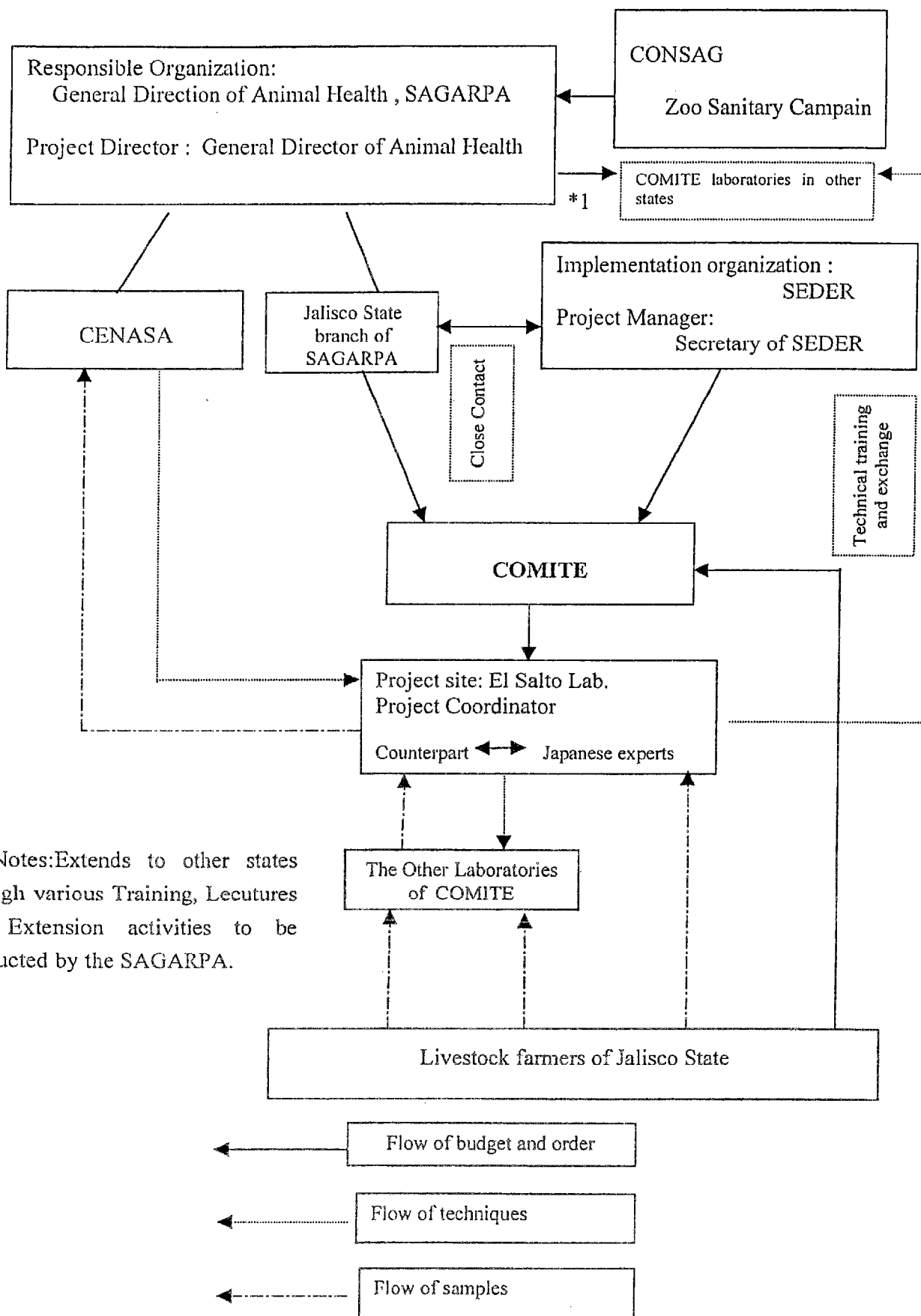
f. Past achievements

Tlaquepaque Laboratory, forerunner of El Salto Lab, and the COMITE laboratories support the livestock eradication campaigns as well as provide diagnoses having the purpose of preventing and managing the diseases that affect the livestock industry of Jalisco Stat. The results of examinations made in 1998 are shown in Tables 9 and 10.

**Table 9 Results of examinations of COMITE laboratories in Jalisco State in 1998
(for each laboratory)**

Name	No. of examined cases
Tlaquepaque Laboratory	159,200
Tepatitlán Laboratory	50,016
Autlán Laboratory	1,648
Gómez Fallas Laboratory (activities suspended at present)	63
Total	210,927

Source: "Annual report on the achievements for 1998" formulated by the COMITE



*1 Notes: Extends to other states through various Training, Lectures and Extension activities to be conducted by the SAGARPA.

Figure 1 Implementation system drawing

Table 10 Extract from the results of examinations at COMITE laboratories in Jalisco State in 1998 (for each examination)

Type of examination	No. of examined cases	
Serum test	Brucellosis	131,461
	Avian influenza	44,376
	Swine cholera	11,814
	Aujeszky disease	812
	Leptospira disease	87
	Parvovirus disease	124
	Pleurisy	94
	Tuberculosis	19
General examination	Bacteria	3,082
	Virus	644
	Microbe	8
	Clinical	88
	Feces	464
	Parasite	442
	Pathology	242
	Serum	202
Immunofluorescence	Swine cholera	29
	Rabies (bovine)	12
	Rabies (canine)	6
Anatomy of corpse	15,969	

Source: "Annual report of activities in 1998" formulated by the COMITE

ii) Possibility to secure personal resources (Japanese experts)

The cooperating organization of Japanese side is mainly the Animal Health Division, Agricultural Production Bureau of the Ministry of Agriculture, Forestry, and Fisheries. The staffs can be expected to be dispatched from the Prefectural Animal Health Office and laboratories related to animal health through the above mentioned Animal Health Section. The Animal Health Laboratory, an independent administrative corporation, can also be a cooperating agency. As other cooperating organizations, veterinary departments of national and private universities and other related departments, from which the staffs may be dispatched.

3. Cooperation system

At present, there is no other project having the common field with the Project in Mexico.

4. Self-development

The budget of El Salto Lab is expected to increase accompanying the expansion of operations (increase of the number of accepted samples, number of examinations, and examination items). In addition, the Mexican side promised that it would not transfer the counterpart during the project implementation period. It cannot be denied that the counterparts may have to be transferred to other diagnosis facility after completion of the Project. Even in that case, the counterpart can contribute to the upper level target of the Project by addressing the animal health projects through the use of the technologies obtained from the Project. Therefore, the effects of the Project are expected to self-develop even after the completion of the Project.

5. Special notes

There is no special note.

V. Basic Plan of the Project

1. Upper level objectives

Animal Health Status is improved in Jalisco State.

(Phase of eradication campaign disease is improved.)

2. Objective, achievements, and activities of the Project

i) Objective of the Project

The Comprehensive diagnostic system is strengthened at laboratories of the COMITE in Jalisco.

(The eradication campaign disease can be diagnosed in El Salto Lab .)

ii) Achievements of the Project

- (1) Basic diagnostic system of El Salto Lab. shall be improved.
- (2) Diagnostic techniques of important animal infectious diseases shall be improved.
- (3) Diagnosis system of other COMITE laboratories shall be improved.

iii) Activities

- (1) To improve the basic diagnostic techniques (virology, bacteriology, patho-histology)
- (2) To improve the diagnostic techniques of important animal infectious diseases (virology, bacteriology, patho-histology)
- (3) Training to the technicians of other COMITE laboratories

3. Objective of the Project different from the one mentioned above

The Project has only one objective and has nothing else.

4. Inputs

i) Japanese side

a. Dispatch of experts

The experts to be dispatched for a long period of time and stay at site all the time shall be as follows.

- (1) Chief Advisor to integrate the technical cooperation of Japan
- (2) Coordinator for operation
- (3) Experts of following fields (virus, bacteria, pathology)

The Chief Advisor may also cover his/her special field. Short-term experts shall be dispatched as necessary.

b. Improvement of the Project infrastructure and supply of equipment

The El Salto Lab is being constructed by the Mexican side and there shall be no facility that has to be constructed by Japan.

The list of the main equipment necessary for the Project activities is shown in Table 8. Some of the items that cannot be prepared by the Mexican side shall be supplied by the Japanese side within the budget and according to the order of priority at an early opportunity.

Table 8 List of the main equipment necessary for the Project activities

Equipment name	Necessary number of items	Equipment name	Necessary number of items
Ultrasonic cleaning device	1	Freeze dryer	1
Autoclave (large)	1	ELISA system	1
Hot air sterilizer	2	Spectrophotometer	1
Gas sterilizer	1	Automatic embedding device	1
Water purifying apparatus	1	Microtome	1
Safe cabinet	3	Automatic dyer	1
Inverted microscope	3	Cold microtome	1
Ultra-low temperature freezer	3	Paraffin block generator	1
Carbon dioxide incubator	2	Image processor	1
Rotary incubator	1	Paraffin dissolver	1
Incubator	3	Stainless steel cable	1
Low-temperature incubator	1	Crane	
Anaerobic incubator	1	Zig-saw	
Filter	1	Anatomy case	
Gene amplifier (PCR)	1	Ozonizer	1
UV sterilizer		Hydrowasher	
Ultra-centrifuge	1	UV sterilizer	
Ultra-centrifuge	1	Slide generator	
Cooling centrifuge	2	Automatic dyer	1
Microcentrifuge	2	Automobile	2

c. Acceptance of trainees

The training of the counterparts in Japan is requested for virology, bacteriology, pathology, and general diagnosis.

ii) Mexican side

a. Staffs

The Mexican side shall assign the staffs shown in Table 9 for the Project. Under the budget of FY 2001, six engineers and four laboratory maintenance assistants shall be assigned to El Salto Lab.

Most of the technicians are the graduates of the technical departments and/or courses of universities. Therefore, selection of the counterpart shall not be worried. However, most of them have difficulty in understanding English. By considering the fact that most of the Japanese experts cannot speak Spanish, communication of daily conversation is somehow worried. However, the Mexican side explains that as many of the laboratory technicians are young of thirty years old or so, they shall put efforts in learning English language so that they can understand English by the time the Project starts.

Table 9 Assignment of counterparts and management staffs

Departments	Number of staffs
1) Project Director	1
2) Project Manager	1
3) Project Coordinator	1
4) Counterparts of the following fields	
a. Virology	4
b. Bacteriology	4
c. Pathology	3
5) Operating staff	Not decided yet
6) Secretary for Japanese experts	Not decided yet
7) Other necessary assistants	Not decided yet

b. Facilities, funds, equipment, and lands

El Salto Lab. has the floor space of 1123 m² (approximately four times larger than the old laboratory) and has good access from Guadalajara being located about 10 km from the center of Guadalajara city. Its location is extremely good from environmental standpoint because it is located next to a park. As for the internal equipment, in addition to the items delivered from the old Tlaquepaque Laboratory, general materials and equipment necessary for the daily operation shall be procured by the Mexican side under a special budget. The operating cost of laboratory shall be increased in accordance with the expansion of examinations. Therefore El Salto Lab. is expected to develop itself not only during the implementation period of the Project but also after the completion of the Project.

5. Analysis of external conditions and the risks of external factors

i) Analysis of external conditions

As the external conditions to achieve and maintain the improvement of animal health of Jalisco State, which is the upper level objective of the Project, the animal health (policy) program shall be continued and strengthened as well as there shall be no inflow of malignant livestock infectious diseases from nearby states.

As the external conditions to achieve the upper level objective, the results of diagnosis shall be reflected on the policies and systems of Jalisco state government and the participation of livestock farmers in the animal health program shall be increased.

In order to achieve the strengthening of total diagnosis system at the COMITE laboratories, which is the Project objective, sufficient number of samples shall be collected at the COMITE laboratories, the test results shall be reflected on the clinical sites, and the quality management shall be implemented in the laboratories.

Furthermore, in order to achieve the above mentioned three results, the counterparts shall continue the Project operation, the budget necessary for the new laboratory shall be securely distributed, and the equipment, staffs, and budget necessary for the improvement of laboratories in other areas shall be properly allocated.

ii) Risks of external conditions

The external conditions that cannot be controlled by the above mentioned Project can be achieved by the efforts of the federal and state governments. The Project also is required to actively satisfy these external conditions.

6. Preliminary obligations and prerequisites

The following six items were indicated as the prerequisites to be achieved by the start of the Project.

- (1) El Salto Lab. shall be built and improved.
- (2) The budget of El Salto Lab. for 2001 shall be secured.
- (3) The daily operations of El Salto Lab. shall be conducted.
- (4) Necessary staffs shall be assigned.
- (5) During the Project period, the animal health policy of the federal and Jalisco State shall not be changed greatly.
- (6) Cooperation of related organizations including CENASA shall be obtained.

VI. Necessity and Aptness of the Project

1. Benefits and fairness of the Project

The final beneficiaries of the Project are all livestock farmers regardless of their size. If the diagnostic technologies are improved with the Project activities, the economic losses caused by livestock diseases shall be reduced and the effects shall be extended to all general livestock farmers including small-scale complex farmers.

If the productivity of livestock business shall be increased with the environmental improvement of animal health, the Project shall greatly contribute to the economy of Mexico.

2. Reasons for grant aid cooperation of JICA

Japan has sufficient technologies and experts that can solve the problems of animal health of Mexico through the control and eradication activities of important diseases that Japan has implemented domestically as well as in developing countries (especially in Asia and Latin America countries). The development of animal health of Japan is at the international level or more. The JICA Project can provide instruction and transfer technology to establish the diagnostic technology system matching to the present state of Mexico.

3. Extended effects of the Project to be expected (Impact)

i) Impact on policies

By improving various animal health policies through the implementation of the Project, the Project can be expected to extend the achievements to other states using the successful cases of Jalisco State and producers groups.

ii) Impact on organizations and systems

Through the implementation of the Project, the relationship between El Salto Lab. and other COMITE laboratories in Jalisco State (Tepatitlán and Autlán) as well as with private laboratories in the state can become clear. In addition, the framework of the livestock diagnosis system throughout Mexico can be proceeded towards the future.

iii) Socioeconomic impact

Characteristics, scale, and contents of the benefits of livestock farmers

a. Beneficiaries

Although the target group is the livestock farmers, the beneficiaries include all the members of organizations, associations, and groups as the COMITE members.

b. Number of beneficiaries

The COMITE members of Jalisco State include six chicken raising associations, forty-six pig raising associations, and 124 beef cattle and dairy associations. The total of approximately 110,000 households that are the COMITE members shall be the direct beneficiaries.

c. Contents of the benefit

As the diagnostic technology and system are improved, diseases shall be prevented and handled properly, which will lead to the improvement of the productivity of livestock farmers and the improvement of income through business improvement.

iv) Technical impact

a. Impact of Techniques

The number of technicians of diagnosis laboratory who are the direct counterparts shall be two to three per one Japanese expert, altogether of ten or so. In addition to the technicians that will receive the technology transfer on daily basis, the staffs of COMITE diagnosis laboratories in other areas, veterinary doctors at site conducting the clinical diagnosis, private laboratory technicians, and staffs of diagnosis laboratories of nearby states shall be the indirect beneficiaries of the technology transfer through training.

b. Contents of the technology transfer

The counterpart staffs to be the direct beneficiaries shall learn the basic diagnostic technologies constituting the basis for the diagnosis laboratory as well as the examination technologies and knowledge related to the standard examination method on important diseases.

The indirect beneficiaries of technology transfer shall learn the technologies of the same contents as the direct beneficiaries from the counterparts and the Japanese experts through training, workshops, and outdoor practices.

v) Impact on economy

When the control and eradication of livestock diseases proceed, limitation to move livestock and livestock products internationally among countries can be relieved or completely abolished. As a result, distribution of livestock products in Mexico shall be activated as well as the domestic consumers can purchase livestock products at reasonable price on stable basis.

vi) Comprehensive analysis of the impacts

Improvement of animal health through the improvement of livestock disease diagnostic technology shall elevate the productivity of livestock farmers and their income. In addition, through the stable production, processing, and distribution of livestock products, the Project shall result in the food supply stability in Mexico.

VII. Project Monitoring and Evaluation

1. Monitoring

i) Implementation system

The progress state and the results of the Project activities shall be monitored by the Project team on regular basis and reported to SEDER, SAGARPA, and JICA.

ii) Contents of implementation

The number of examination technologies learned in the diagnosis laboratories, the increased number of examination items that can be implemented, the increased number of examination items that can become possible in the laboratories of other areas, and the increased number of cases requested for the state of diseases shall be monitored according to the indices indicated on the PDM.

iii) Implementation plan

Regular monitoring shall be implemented by the Project team once in half year as a rule. In addition, post-monitoring shall be implemented at three and five years after the completion of the Project as necessary.

2. Evaluation

Evaluation of the Project covers five items, that is, achievement degree of objectives, impact, efficiency, aptness of the Project, and self-development. On these items, preliminary evaluation, interim evaluation, and evaluation at the completion of the Project, and post-evaluation shall be conducted as necessary. Especially the interim evaluation and the evaluation at the completion of the Project shall be conducted by the joint evaluation team consisting of the Japanese evaluation committee and the Mexican evaluation committee.

IIX.Attachments

1. List of Participants in the PCM workshop