

**BASIC DESIGN STUDY REPORT
ON THE PROJECT FOR
ENHANCEMENT OF BASIC HEALTH SERVICES
IN
REPUBLIC OF ECUADOR**

JULY 2003

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

In response to a request from the Government of the Republic of Ecuador, the Government of Japan decided to conduct a basic design study on the Project for Supporting Expanded Programme on Immunization and entrusted the Study to the Japan International Cooperation Agency (JICA).

JICA sent to Ecuador a basic design study team from September to October 2002 and May 2003.

The team held discussions with the officials concerned of the Government of Ecuador, and conducted a field study at the study area. After the team returned to Japan, future studies were made. As this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Ecuador for their close cooperation extended to the teams.

July 2003

Takao KAWAKAMI

President

Japan International Cooperation Agency

Location map



Republic of Ecuador

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Abbreviations

BCG : Bacillus Calmette Guerin, vaccine for immunizing against TB

DPT : Diphtheria-Pertussis-Tetanus combined vaccine

DT : Diphtheria-Tetanus combined vaccine

EPI : Expanded Programme on Immunization

INH : Instituto Nacional De Higiene y Medicina Tropical / National Institute of Hygiene and Tropical Medicine

PAHO : Pan American Health Organization

PHC : Primary Health Care

SCR : Subcentro de Salud Rural / Rural Sub Health Center

TT : Tetanus Toxoid

USD : United States (of America) Dollar

WHO : World Health Organization

Preface

Location Map

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Chapter 1 Background of the Project

The Government of Ecuador requested the Government of Japan to implement a grant aid project for three components of: i) Basic Health Services, ii) Expanded Program on Immunization (EPI), and iii) Instituto Nacional De Higiene y Medicina Tropical (INH).

■ Basic Health Care Services

Although Ecuador has been promoting primary health care (PHC) since 1988, regional disparities in the quality of health services are still large and need to be rectified. According to the official report of the Government of Ecuador in 1999, 30.4% of the country's population live below the international poverty level. Responding for this situation, the Ministry of Health (MOH) in Ecuador began implementing measures to alleviate poverty as well.

The Division of Area Health Services in MOH initially requested Japan to provide a set of basic health care equipment consisting of 26 different types for each of the 183 SCRs in 194 cities/towns/villages where people living below the poverty level accounted for 80% or more of the total population. However, as it was apprehended that the provision of a whole set of equipment to each health facility could duplicate some of their existing equipment, a survey was performed to check the inventory of the 183 SCRs. To the survey, 77 SCRs answered by stating they did not possess any of the 26 types of equipment or had similar equipment but most of them were out of service. Upon analyzing the survey result, these 77 SCRs were selected as the target facilities of the Project.

As the "Expansion Program of PHC and Health Promotion Strategy Diffusion" is neither sufficiently funded due to MOH's financial constraint nor receiving assistance from donor organizations, procurement of basic health equipment for the program through Japan's grand aid project will help effort of the Government of Ecuador to alleviate poverty.

■ Expanded Programme on Immunization (EPI)

Since the introduction of EPI to Ecuador in 1976, the immunization rate of the country has been on high levels especially in recent years. There has been no report of polio incidence since 1991 as well as no outbreak of measles since 1998, which are believed to be the direct outcome of the immunization activities.

The Division of EPI, MOH initially requested Japan to provide cold-chain equipment, vaccines, and vaccine inventory control equipment. However, the cold-chain equipment and vaccines were excluded from the Project, as the field survey revealed that the former would be provided by the Government of Luxemburg, and appropriations were made by the Government of Ecuador for purchasing the latter. On the other hand, data and information of vaccine-storage/transportation bases throughout Ecuador are not sufficiently controlled or shared, and the "Vaccine Bank Automatic Network Development Project" was formulated to improve the situation. This Project will focus on providing vaccine inventory control equipment, such as personal computers and printers, to backup such endeavors.

■ Instituto Nacional De Higiene y Medicina Tropical (INH)

INH was established in 1941 for the purpose of prevention, diagnosis, control, and research of tropical diseases and is the only facility in Ecuador that has vaccine production. INH has long been producing BCG, DPT, DT, and TT vaccines to be used in EPI activities, but the production output has dropped significantly in recent years due to deteriorating equipment and facilities.

Although the Government of Ecuador requested a wide variety of equipment related to the production of vaccines, including rabies vaccine and antivenin serum, as well as equipment for keeping laboratory animals, provision by this Project will be limited to the equipment to produce EPI vaccines (BCG, Pertussis, Diphtheria, and Tetanus) and to inspect the quality thereof, excluding research equipment and expendable items, as well as low-cost items that the Ecuadorian side could procure at its own account.

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

(1) Overall Goals and Project Objectives

The National Health Plan 2000 – 2005 of Ministry of Health in Ecuador is targeted at the following five areas:

- ① Supervision and management of various agencies and organizations implementing the National Health Plan.
- ② Phase-in of the health insurance system for all Ecuadorian citizens to guarantee every person equitable access to health services.
- ③ Support for health promotion activities and provision of health services.
- ④ Improvement of health services.
- ⑤ Improvement of environmental health.

It is stated that the “support for health promotion activities and provision of health services” are implemented in the fields of nutrition, child health, EPI, school health, reproductive health, infectious disease, noninfectious disease, and health care for the elderly and the handicapped. Thus, the “Vaccine Bank Automatic Network Development Project” of Division of EPI, MOH, which aims to strengthen the logistics system of EPI, is in line with these overall goals.

The “improvement of health services” activities are implemented in the fields of human resource management, organizational management, infrastructure and equipment, medical/pharmaceutical supplies, emergency medicine, and traveling health services, which support the “Expansion Program of PHC and Health Promotion Strategy Diffusion” of Division of Area Health, MOH that aims to improve health services. Likewise, the provision of equipment related to vaccine production for INH aims to establish a system for producing and supplying vaccines safely, thus contributing to the implementation of the National Health Plan.

(2) Outline of the Project

The purposes of this Project are: i) to strengthen the health services for the residents of poverty regions in line with measures of MOH to alleviate poverty by providing basic health equipment for the SCRs in those regions, ii) to establish an efficient information system and fortify the logistics system for the immunization activities by procuring equipment necessary for the inventory control of vaccines, and iii) to solve various problems in vaccine production at INH to ensure stable production and supply of safe vaccines within Ecuador by procuring measuring devices to control the production environment, as well as equipment related to vaccine production and quality inspection.

2-2 Basic Design of the Requested Japanese Assistance

2-2-1 Design Policy

This grant aid project is intended to provide funds necessary for the implementation of the activities

described below.

(1) Basic Policy

- Provision of basic health care equipment for the SCRs in the areas designated as poverty regions to support the “Expansion Program of PHC and Health Promotion Strategy Diffusion” that is aimed at providing improved health services in the poverty areas.
- Installation of personal computers and printers at the bases of vaccine storage and distribution to support the “Vaccine Bank Automated Network Development Project” formulated by Division of EPI, MOH.
- Introduction of new equipment necessary for the improvement of the cleanliness of the vaccine production environment of INH, replacement of aged or deteriorated equipment for the enhancement of its production capacity, and upgrading of equipment essential for assuring the quality of vaccines in order to complement the shortage of vaccines necessary to carry out EPI activities with domestically produced vaccines to ensure stable supply.

Specific items and their quantities were determined in the following manner:

■ Basic Health Services: Basic Health Care Equipment for SCRs

This Project will cover 77 SCRs by providing them with basic equipment that are defined as “essential equipment and supplies for SCR” by the MOH, excluding furniture, expendables, and other inexpensive items. The quantity of each item was determined based on the responses to the inventory survey from the 77 SCRs claiming the shortage of necessary equipment. Although more than a few SCRs did not answer to the survey questionnaire, it was decided not to include those facilities in this Project.

Quantity of each item calculated based on the inventory survey results is as follows:

- Small Refrigerator / Icelined Refrigerator: Currently, a total of 56 small refrigerators are in place, of which 43 are operating properly while 13 are not. Of the 77 target SCRs, three will be supplied with one ice-lined refrigerator each by the Government of Luxemburg and thus will be excluded from this Project. As this Project intends to introduce icelined refrigerators to enhance the vaccine storage capacities, it will provide one unit for each target SCR that answered to possess zero or one small refrigerator. A voltage regulator and a vaccine thermometer will be attached to each ice-lined refrigeration unit.
- Vaccine Carrier: Of the 48 currently installed carriers, 38 are in good condition while 10 are faulty. Although MOH’s standard equipment list states one vaccine carrier for each SCR, this Project will procure two for each SCR or a total of 70 carriers by taking into account the future expansion needs for storing a combined vaccine against five diseases.
- Stethoscope: Of the currently possessed 104 stethoscopes for adult, 40 are not functioning properly. Since the MOH’s standard equipment list does not distinguish stethoscopes for adult from those for infant or child, all the currently owned ones are probably for adult. Therefore, this Project will

provide one stethoscope for infant and child for each target SCR.

- **Sphygmomanometer:** Of the currently owned 94 sphygmomanometers for adult, 63 are operating properly but 31 are not. As for sphygmomanometers for child, 24 of the 35 existing ones are in good condition while 11 are faulty. Therefore, this Project will procure 82 adult sphygmomanometers and 40 pediatric sphygmomanometers to replace the faulty ones and to provide new ones for SCRs currently unequipped with sphygmomanometers.
- **Height and Weighing Scale for Adult:** MOH's standard equipment list indicates that an integrated type combining height and weighing scale is generally used. Of the currently owned 61 integrated units, 38 are operating properly while 23 are not. This Project will provide one unit of height measure and weighing scale for each SCR that does not have the integrated type or only has faulty equipment.
- **Dressing / Suture / Delivery Set:** Of the currently owned 82 dressing sets, 73 suture sets, and 56 delivery sets, 63, 51, and 42 are in good condition while 19, 22, and 14 are not. This Project will procure 75, 75, and 30 sets to cover SCRs that do not have such instrument sets or are equipped only with incomplete sets.
- **Virginal Speculum Set:** Of the currently owned 79 sets, 67 are in good condition while 12 are not. This Project will procure 70 sets to cover SCRs that do not have virginal speculum sets or are equipped only with incomplete sets.
- **Sterilizer:** While MOH's standard equipment list calls sterilizers "autoclaves (high-pressure steam sterilizers)," they refer mostly to dry heat sterilizers. Although a distinction between steam and dry heat sterilizers was made in the inventory questionnaire, most SCRs answered to possess autoclaves. This Project will provide autoclave for SCRs that stated to have neither type of sterilizers.

■ **Expanded Programme on Immunization (EPI): Equipment for Vaccine Supply Bases**

The initial request included 1-year supply of EPI vaccines and syringes, as well as refrigerators and other equipment to establish a nation-wide cold-chain system. However, as the site survey confirmed that the cold-chain equipment would be provided by the Government of Luxemburg and that the Government of Ecuador had pledged to make appropriations for the procurement of vaccines, these items were excluded from the Project. Vaccine inventory control equipment, such as personal computers and printers, on the other hand, were deemed appropriate for fortifying the information management system of each vaccine storage / delivery base within the cold-chain system and was therefore included in the Project. The chart below shows the cold-chain system of Ecuador.

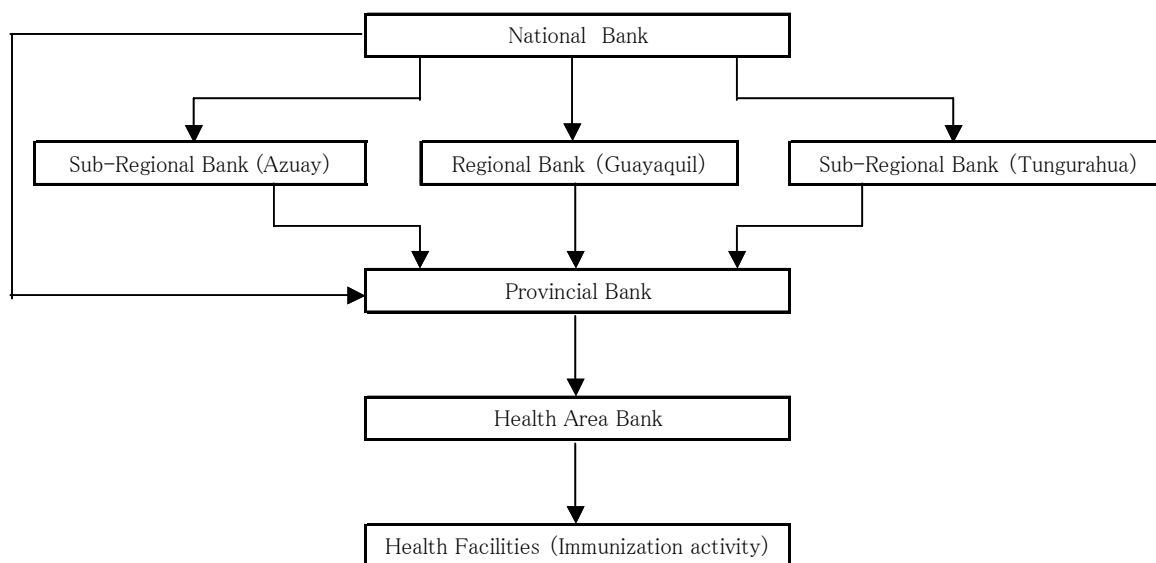


Figure 2-1: Cold Chain System in Ecuador

Although Division of EPI intends to include all the Health Area Banks throughout the country, installing the equipment all at once would make it difficult to give technical training and make initial adjustment in the software and system operation. Thus, it was decided to select certain pilot regions to test the system before installing it nationwide. Consequently, Bolivar and Chimborazo Provinces in the mountainous regions were selected as they were experiencing communication difficulties but were close enough to Quito so that instructors could be easily dispatched there. A total of 37 PCs and printers will be installed in the facilities listed below:

Table 2-1: Installation Sites of PCs and Printers for Inventory Control

	Target Facility	Quantity
1	EPI Department of MOH	1
2	National Bank	1
3	Regional Bank (Guayaquil)	1
4	Sub-Regional Bank (Azuay, Tungurahua)	2
5	Provincial Bank (22 Provinces)	22
6	Bolivar Province Health Area Bank (4 health areas)*	4
7	Chimborazo Province Health Area Bank (6 health areas)*	6
	Total	37

* This Project will select Bolivar and Chimborazo as pilot Provinces to install and test the system at their respective Health Area vaccine warehouses

■ Instituto Nacional De Higiene y Medicina Tropical (INH)

Although the initial request included a wide variety of equipment related to the production of vaccines, including rabies vaccine and antivenin serum, as well as equipment for keeping laboratory animals, this Project will be limited to the provision of equipment to produce and inspect the quality of EPI vaccines (BCG, Pertussis, Diphteria, and Tetanus Toxoid) and will exclude research equipment and

expendable items, as well as low-cost items that the Ecuadorian side could procure at its own account. Of the equipment related to the production and quality inspection of vaccines, this Project will procure items that meet the following criteria:

- Equipment indispensable to establish a proper vaccine production environment:
Clean room unit, pass box, microbial air sampler, etc.
- Equipment necessary for expanding the vaccine production capacity and efficiency:
Automatic ampoule filling and sealing machine, vacuum sealing machine upgrading set, automatic vial filling and closing machine
- Critical production equipment that is aged and in need of renewal:
Large-capacity refrigerated centrifuge, pelicon filter system, electronic analytical balance
- Critical equipment necessary for inspecting the quality of domestic and imported vaccines:
Microplate spectrophotometer, microplate washer, inverted microscope, etc.

The necessary quantity of each of these basic items is calculated as follows:

- As the existing eight pass boxes that are installed on the floors related to this Project are not sufficient to maintain the hygienic environment, this Project will procure eight new units to improve the production environment.
- Although the vaccine production building has wash basins in appropriate places, automatic hand washers are necessary for improved production environment. This Project will procure eight units.
- Although the third floor is installed with one unit of air shower, other floors (from the basement to second floor) have only a bathroom or a dressing room. To upgrade the production environment, this Project will procure an air shower for each floor, excluding the third floor, suitable for the structure of the floor.
- The existing large-scale refrigerated centrifuge, pelicon filter system, electronic scale, and filling machine are aged and their performance levels do not match those of other equipment. This Project will procure one unit each of these items to renew the aged equipment.

(2) Policy on Natural Environment

To withstand the high temperature and humidity of the Amazon tropical rainforest, the ice-lined refrigerator, one of the basic health care equipment, will be chosen from tropical-climate models. Since the INH is also situated in a high temperature/humidity climate of Guayaquil, the INH will be responsible for adjusting and controlling the temperature and humidity of the equipments after the installation thereof.

(3) Policy on Socio-Economic Conditions

Although electricity is generally available throughout Ecuador, some regions experience power cut a few times a month lasting for 30 minutes to a few hours each time. Therefore, refrigerators for storing

vaccines should be able to retain coolness for a relatively long time during power failure. Also, since varying voltage could shorten the service life of the refrigerator, a voltage regulator will be attached to each refrigerator under this Project.

(4) Policy on Procurement/Installation Work

The vacuum sealing machine upgrading set is for reconstructing the vacuum sealing (main unit) that was installed in the INH under the Equipment Procurement Project for the National Institute of Hygiene and Tropical Medicine in FY 1996. The main unit is manufactured by Kumabe Co., Ltd. and no other companies in the world make the same of even similar products. Therefore, the upgrading set will be selected from this specific brand.

The installation work of automatic ampoule filling and sealing machine, vacuum sealing machine upgrading set, clean room unit, and automatic vial filling and closing machine will be done by local contractors such as SERMADO using the materials procured by Japan under the supervision of engineers dispatched from Japan.

Although the automatic hand washer, pass box, and microbial air shower will also need installation work, the INH that already has similar units can install them on their own. Thus, the assistance of the Japanese side will be limited to the procurement of these equipment.

(5) Policy on the Employment of Local Contractors

As mentioned earlier, local contractors are undertaking the reconstruction and daily maintenance of existing equipment. It would be preferable to use local agent also to render the maintenance / management services of the new equipment after the completion of this Project.

(6) Policy on the Administrative/Technical Capabilities of the Implementation Agency

Although it is unlikely that the basic health equipment to be procured under this Project will create problems technically, Division of Area Service should take care in giving operational instructions to the SCR personnel who will be operating such items as the ice-lined refrigerators and autoclaves.

The PCs for vaccine inventory control shall be used after installing the vaccine inventory control program developed by the MOH, which is also responsible for giving necessary software training to the personnel in charge of vaccine inventory control.

The operation and maintenance of INH is properly handled by the staff of its engineering section and full-type maintenance personnel, who will probably be able to handle the new equipment to be introduced by this Project also. For automatic ampoule filling and sealing machine, vacuum sealing machine upgrading set, clean room units, and automatic vial filling and closing machine, the Japanese side will be responsible for checking the operation of the equipment and giving operational training during the startup phase. The INH is responsible for checking the lab equipment to make certain that they operate properly. Environmental monitoring equipment, such as UV radiometer, microbial air sampler, and air particle counter, are plug-and-play type so that they will not require any instruction or

training.

(7) Policy on the Grade of Equipment

- Basic Health Service – Basic Health Care Equipment for SCRs
 - ① Ice-lined Refrigerator: shall meet the WHO E3/F.3 standard, an ice-lined type to cope with occasional power cut having a vaccine storage capacity of 37 liters.
 - ② Voltage Regulator: shall meet the WHO E7/VR.1 standard.
 - ③ Vaccine Carrier: shall meet the WHO E5/12 standard, attached with two sets of ice packs for alternating use.
 - ④ Vaccine Thermometer: shall meet the WHO E6/TH.3 standard.
 - ⑤ Sphygmomanometer (for adults and children): shall be a tabletop-type mercury manometer.
 - ⑥ Autoclave: shall be attached with dry heating, safety, and self-diagnosis functions that runs on AC120V, 60Hz.

- Expanded Program on Immunization (EPI) - Equipment for Vaccine Supply Bases
 - ① Personal Computer: shall be of a general Ecuadorian model installed with Pentium-4 CPU, 40GB hard disk, and Windows2000 operating system (Spanish version).
 - ② Printer: shall be a black-and-white laser printer model generally available in Ecuador.

- Instituto Nacional De Higiene y Medicina Tropical (INH)
 - ① Automatic Ampoule Filling and Sealing Machine: the maximum processing capacity shall be around 50 ampoules per minute with the allowable filling variance range of 0.2 to 1.2 milliliters. The unit is for producing both BCG vaccine and diluent and will include 500,000 ampoules.
 - ② Vacuum Sealing Machine Upgrading Set: a set of equipment to modify the existing ampoule sealing machine for 20 doses to 10 doses. Includes 500,000 ampoules.
 - ③ Clean Room Unit: the target effusion cleanliness shall be Class-100 at the average wind velocity of the blow unit of 0.35m/sec. Coarse-type filters shall be used for the suction section and HEPA-type filters for the blow section.
 - ④ Automatic Vial Filling and Closing Machine: the maximum processing capacity shall be around 30 vials per second with an allowable filling variance of 5.5 milliliters within the accuracy of $\pm 2\%$. Includes 500,000 vials.
 - ⑤ Microbial Air Sampler: the collection efficiency of bacillus subtilis spores shall be 99%.
 - ⑥ Air Particle Counter: shall be able to effectively measure particles of $0.3 \mu\text{m}$ or larger in diameter.
 - ⑦ Microplate Spectrophotometer: shall be for standard 96-well measuring tray with the measurable wavelength range of 340 – 750nm or wider. Taking into account the limited space of the Laboratory, a laptop computer that runs on a Pentium-4 or higher CPU and the OS of Windows2000 or XP will be chosen.
 - ⑧ Microplate Washer: shall be compatible with the microplate spectrophotometer to be procured

under this Project.

(8) Policy on Installation Work (Method) and Procurement Method

Clean room unit shall be installed by hanging it from the ceiling slab and putting up partition walls around it. Although the partition panels will be cut at the construction site so that they will fit to the dimension of the actual room, the unit shall be attached with lighting fixtures beforehand to minimize the number of tasks at the construction site.

Other sterilization equipment shall be chosen from Japanese products, each of which shall have standard-size HEPA filters for easier replacement in the future. The scope of works to be undertaken respectively by the Ecuadorian and Japanese sides is shown in Table 2-2 below.

Table 2-2: List of Installation Works

Work	Work	
	Japan	Ecuador
Delivery of Equipment/Supplies		
1 Customs clearance/inland transportation	○	
2 Removal/reconstruction of doors and exterior walls		○
3 Hoisting by crane	○	
4 Carrying in/unpacking	○	
Sterilization Work		
1 Masking of surrounding areas		○
2 Removal of existing equipment		○
3 Installation of clean booth	○	
4 Installation of ceiling panels	○	
5 Installation of partition walls, etc.	○	
6 Verification of performance	○	
7 Primary-side electrical work		○
8 Secondary-side electrical work	○	
Upgrading of Vacuum Sealing		
1 Removal of existing equipment	○	
2 Installation	○	
3 Verification of performance	○	
4 Primary-side electrical work		○
5 Secondary-side electrical work	○	
Ampoule/Vial Filler		
1 Installation work	○	
2 Connecting to LP gas supply line		○
3 Indoor plumbing of LP gas	○	
4 Plumbing of nitrogen gas supply	○	
5 Plumbing of oxygen supply	○	
6 Plumbing of compressed air supply	○	
7 Verification of performance	○	
8 Primary-side electrical work		○
9 Secondary-side electrical work	○	
Analyzing Equipment		
1 Operation check	○	
2 Installation		○

- The Japanese side will be responsible for procuring the pass box, automatic hand washer, and air shower. Installation of these units shall be undertaken by the INH.
- Due to the structure of the building, the maximum load it can withstand per floor area is said to be

400kg/m³. As Automatic ampoule filling and sealing machine may exceed this limit, the weight must be carefully distributed.

- Filling machine and other large-sized equipment need to be installed by removing certain exterior walls and hoisting them with a crane. The Japanese side will bear expenses associated with the delivery of such equipment while the removal and reconstruction of the exterior walls are the responsibility of the recipient side.

2-2-2 Basic Plan (Equipment Plan)

(1) Overall Plan

This project consists of three components of Basic Health Services, Expanded Programme on Immunization (EPI), and Instituto Nacional De Higiene y Medicina Tropical (INH).

For the “Basic Health Services” component, this Project will procure basic health care equipment for the SCRs in poverty regions. The Japanese side is responsible for procuring and delivering the equipment to the MOH warehouse in Quito, and the MOH takes charge of transporting the equipment from the warehouse to the 77 target SCRs. The basic health care equipment will be used at SCRs in their daily practices and health check.

For the EPI activities, this Project will procure personal computers and printers to control the inventory of vaccines. The Japanese side is responsible for procuring and delivering the devices to the MOH warehouse in Quito, and the MOH takes charge of transporting the equipment from the warehouse to each vaccine supply base, namely the National Bank, the Sub-Regional Bank, the Provincial Bank, and the Area Health Bank in Bolivar and Chimborazo Provinces. Vaccine inventory control software training will be given before the PCs and printers are put to use for controlling the inventory of vaccines.

For the INH, this Project will procure equipment to measure the hygienic environment level as well as equipment related to vaccine production and quality control. The Japanese side is responsible for procuring and delivering the equipment to the INH warehouse in Guayaquil, as well as for installation except for the pass box, automatic hand washer, and starting up of the equipment, and air shower, to ensure that they operate properly. Then the INH will begin producing vaccines using both the existing and new equipment. After the installation, the measuring equipment is used for inspecting the quality of vaccines produced domestically, as well as those imported.

(2) Equipment Plan

No.	Equipment	Specification, Application, etc.	Unit price (1,000 yen)	Qty.	Cost (1,000 yen)
1	Personal computer	Pentium 4, RAM256MB, HDD40GB, CD-RW/FDD, Windows OS For establishing vaccine inventory control system	170.35	37	6,303
2	Printer	Black and white, laser (600x600dpi or higher resolution) For establishing vaccine inventory control system	24.81	37	918
3	Ice-lined refrigerator	TCW1990, PIS E3/62M, WHO standard: E3/RF.3. Total capacity: 66 liters. Vaccine storage capacity: 37.5 liters, with 17-liter icepack freezer room For storing vaccines	150.08	48	7,204
4	Voltage regulator	500VA, WHO standard of E7/VR.1 For protecting the refrigerator	33.51	48	1,609
5	Vaccine carrier	Capacity: 1.5-1.7 liter. WHO standard: E5/12, with 2 icepack sets (8 icepacks) For transporting vaccines	1.51	70	106
6	Thermometer	-30Cels.~+50Cels., PIS E6/08, WHO standard: E6/TH.3, set of 3 thermometers For controlling vaccine temperature	0.67	48	32
7	Stethoscope for adult	Double-type chestpiece stethoscope for general use, diaphragm diameter (φ43mm) For medical care at health facilities	10.45	75	784
8	Stethoscope of child	Double-type chestpiece stethoscope for pediatrics, diaphragm diameter (φ35-37mm) For medical care at health facilities	10.45	67	700
9	Stethoscope for infant	Double-type chestpiece stethoscope for infants, diaphragm diameter (φ20-30mm) For medical care at health facilities	10.45	67	700
10	Sphygmomanometer for adult	Tabletop mercury manometer, 0-300mmHg, manchette for adults, with rubber ball For medical care at health facilities	5.40	82	443
11	Sphygmomanometer for child	Tabletop mercury manometer, 0-300mmHg, manchette for children (80-90mm or so rubber bag width), manchette for infants (50-60mm or so rubber bag width), manchette for neonates (30mm or so rubber bag width) For medical care at health facilities	9.10	40	364
12	Scale for adult	Automatic platform-type spring scale, stand-type pointer scale, capacity 150kg(max.) x 500g For medical care at health facilities	126.00	24	3,024
13	Height measure	Metalic manual type. Measuring range: 700mm (min) - 2000mm (max) or wider For medical care at health facilities	29.00	24	696
14	Scale for infant	Automatic platform-type spring baby scale, stand-type pointer scale, attached with basket. Capacity: 10kg- 30kg(max.) x 50g For medical care at health facilities	120.00	29	3,480
15	Resuscitation set	Resuscitation silicon bag for adults (1500-200ml) x1, for infants (450-700ml) x 1, for neonates (150-300ml)x1; silicon mask x 5 sizes; airway set; pedal-type suction unit; mouth prop; tongue forceps; tongue depressor For first aid by artificial respiration	172.00	39	6,708
16	Trash can with cover and pedal	Stainless steel outer cover and lid, stainless steel or enamel inner drum, 10 liters or so capacity For proper storing of medical waste	12	65	780
17	Stand light	Flexible expansion table. Maximum height position of lamp: 1650mm or higher For medical care at health facilities	27	19	505
18	Autoclave	Unit dimension φ220mm x H350mm or larger, attached with dryer and various safety devices, semi or full automatic, 6 round baskets and 2 rectangular baskets For sterilizing medical supplies and instruments	485	21	10,185
19	Diagnostic Kit	Ophthalmoscope head, otoscope head, otoscope specula, pharyngeal mirror, rhinoscope specula For ophthalmologic and otorhinolaryngologic examinations	100	16	1,600
20	Examination bed for infant	Dimension: approx. L1000mmxW600mmxH900mm, attached with storage cabinet, drawers, and height measure of approx. 40-90cm For medical care at health facilities	250	22	5,500

No.	Equipment	Specification, Application, etc.	Unit price (1,000 yen)	Qty.	Cost (1,000 yen)
21	Examination table	Dimension: approx. L1800mm x W650mm, tinting backrest, can be used for ob/gyn examinations with leg support For medical care at health facilities	290	20	5,800
22	Dressing set	Hemostatic forceps (straight and curved), surgical forceps, surgical scissors, stainless tray For treating wounds	21	75	1,598
23	Suture set	Surgical forceps, hemostatic forceps (straight and curved), surgical forceps, needle holder, surgical scissors, scalpel handle, replacement blade for scalpel, stainless tray For stitching wounds	44	75	3,293
24	Delivery set	Nasal suction unit, hemostatic forceps (straight and curved), pediatric needle holder, surgical forceps, stainless cup, kidney tray, surgical scissors, stainless tray For treating child delivery	41	30	1,215
25	Virginal speculum set	GRAVE-type, stainless steel, 1 each of medium (approx. 95x35mm) and small (approx. 75x20mm) For medical care at health facilities	5	70	378
26	Thermometer set	35-42Cels., 20 thermometers in cases For medical care at health facilities	14	29	394
27	Kidney tray set	Set of 3 : large (230-240mm), medium (220-210mm), small (200mm); stainless steel For medical care at health facilities	2	41	72
28	Automatic ampoule filling and sealing machine	Automatic filling & sealing machine. Max. processing capacity: 50/min. Filling qty:0.2-1.2ml, with 500,000 ampoules Construction work: installation of main unit; wiring; For producing BCG vaccine	40,250	1	40,250
29	Vacuum sealing machine upgrading set	For upgrading the existing 20-dose equipment (ES100) to 10-dose type, includes a whole set of parts and components and 500,000 ampoules For producing BCG vaccine	43,000	1	43,000
30	Automatic hand washer	Stand-alone, automatic wash/dry type with hot air blower For improving vaccine production environment	356	8	2,848
31	Pass box	Dimension: 800W x 800D x 890H Baking finish steel plate, see-through glass Accessories: disinfecting light, interlock function For improving vaccine production environment	437	8	3,496
32	Air shower	Ones-side blowing. Cleanliness of blow: Class 100. Wind velocity: 25m/s or higher. Manual door, interlock For improving vaccine production environment	828	5	4,140
33	Pellicon Filter system	Millipore stainless filter, holder, pressure meter, pump, hoses, 5 sets of cassette-type Pellicon filter (biomax-30, molecular weight 30-kDa, membrane area 0.5m ²) For refining vaccines	2,884	2	5,768
34	Clean room unit	Target cleanliness of blow: Class 100. Average wind velocity of blow section: 0.35m/s. Face of blow unit: SUS. With lighting Filter: coarse dust (suction section), HEPA filter (blow section) Partition wall: clean room panel. Surface material: colored steel plate with return louver For improving vaccine production environment	21,881	1	21,881
35	Automatic vial filling and closing machine	Automatic filling, nitrogen replacement, cap/screw sealing. Max. processing capacity:30 or so vials per minute. Filling quantity: 5.5ml at ±2% or less accuracy. 500,000 each of vials, rubber sealers, aluminum caps Construction work: installation of main unit, wiring, For producing diphtheria, pertussis, and tetanus vaccines	51,420	1	51,420
36	UV radiometer	For disinfecting light. Measurable wavelength:220-300nm Display range: 0.1-100,000w/cm ² For checking disinfecting capacity	258	2	516
37	Microbial air sampler	Collection efficiency: 99% with bacillus subtilis spore (0.7µm) for 90mm φ dish For sampling airborne microorganisms	656	2	1,312
38	Particle counter	For 0.3µm or larger particles, 1 CFM or higher sample flow rate, portable type For counting particles in the air	1,350	2	2,700
39	Micro refrigerated centrifuge	Max. speed: 13,000rpm or higher. Max. radial acceleration: 16,000G or higher. Rotor:1.5/2.0ml, 24 micro tubes For pre-treatment of specimens before testing	500	1	500

No.	Equipment	Specification, Application, etc.	Unit price (1,000 yen)	Qty.	Cost (1,000 yen)
40	Microplate spectrophotometer	For 96 wells. Measurable wavelength range: 340nm-750nm. Micrometer-type filter able to measure in nanometers, incubation and stirring function, attached with PC system and cables For measuring antibody titer	2,772	1	2,772
41	Microplate washer	For 96-well plate, shaking function, 8/12 channel manifold For washing micro-plate	880	1	880
42	Inverted microscope	Ocular lens: 10x. Field of view: 18mm Object lens: 5x. Bright field;10xPh1; 20xPh1; 40xPh2 For observing cultured cells	548	1	548
43	Kjeldahl nitrogen digestion and distillation unit	Nitrogen decomposition device: test tube (100ml) x 6 or more. Decomposition time/tem. controller Nitrogen distillation device: steam distillation system, automatic instillation, distillation time adjusting function For measuring protein nitrogen	2,140	1	2,140
44	Electronic analytical balance	Capacity: 210-230g x 0.1mg. Automatic calibration, attached with printer For precision scaling	269	1	269
45	Large capacity refrigerated centrifuge	Max. speed: 7,000rpm or higher. Max. RCF 11,000xg or higher. Angle rotor: for 6 1000ml bottles, attached with log data printer For producing diphtheria vaccine	4,830	1	4,830

2-2-3 Basic Design Drawing

The Basic Design Drawing is attached as “Appendix 6. Equipment Installation Layout in INH.”

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

An independent third-party organization will: i) check the shipping documents against the equipment list, ii) check the actual equipment (and quantities thereof) against the specification sheet, and iii) check the packing conditions as the pre-shipment inspection. The equipment will be delivered to either one of the two final destinations, namely the MOH warehouse in Quito or the warehouse of INH. Of the equipment for INH, automatic ampoule filling and sealing machine (No.28), vacuum sealing machine upgrading set (No. 29), clean room unit (No. 34), and automatic vial filling and closing machine (No. 35), will require installation work, which will be done under the supervision of Japanese engineers.

2-2-4-2 Implementation Conditions

To clear tax-exempted aid supplies, the certificate of pre-shipment inspection, which will be done by a third-party organization entrusted by the Ministry of Health of the recipient country, will need to be submitted. The pre-shipment inspection by the consultant cannot substitute this third-party inspection, as the consultant is the ordering party of the goods, and the third-party organization that the consultant may hire is not necessarily the one designated by the MOH. Thus, separate pre-shipment inspections will be conducted by the organizations entrusted respectively by the MOH and the consultant. To ensure smooth completion of both inspections, the MOH and the consultant should keep close contact and avoid possible delays in shipment especially those caused by delayed order

processing and the inability to accommodate sudden changes in the place of lading or the number of shipments on the MOH side.

2-2-4-3 Scope of Works

The scope of works to be undertaken by Ecuador and Japan is outlined under Section 2-2-1 (8) Policy on Installation Work (Method)/Procurement Method. The total cost to be borne by the Ecuadorian side is about 25,000 US dollars.

Electrical work	Construction work	Total cost
15,462.48	9,881.25	25,347.73

2-2-4-4 Consultant Supervision

After the arrival of the equipment in Ecuador, the local procurement managers will take charge in coordinating remaining tasks, such as the unpacking, acceptance inspection, repacking, sorting out, delivery, and handover of the equipment. The installation work will be done under the supervision of Japanese technicians and engineers. Because the installation work of the filling machine and the clean room unit will be done concurrently in the same room, the construction schedule needs to be carefully coordinated.

2-2-4-5 Procurement Plan

■ Basic Health Care Equipment for SCRs (No.3 to 27)

Icelined refrigerators and other equipment related to vaccine storage (No. 3-6) shall meet the corresponding WHO quality standards. Since none of these items are manufactured in Japan, they will be procured from third countries.

Although most other items used by SCRs for medical practices are produced in Japan, resuscitation set, diagnostic kit, and a few other items (No.7-9, 15, 19, 22-25) will be sourced from third countries to ensure a sufficient level of competition in tendering.

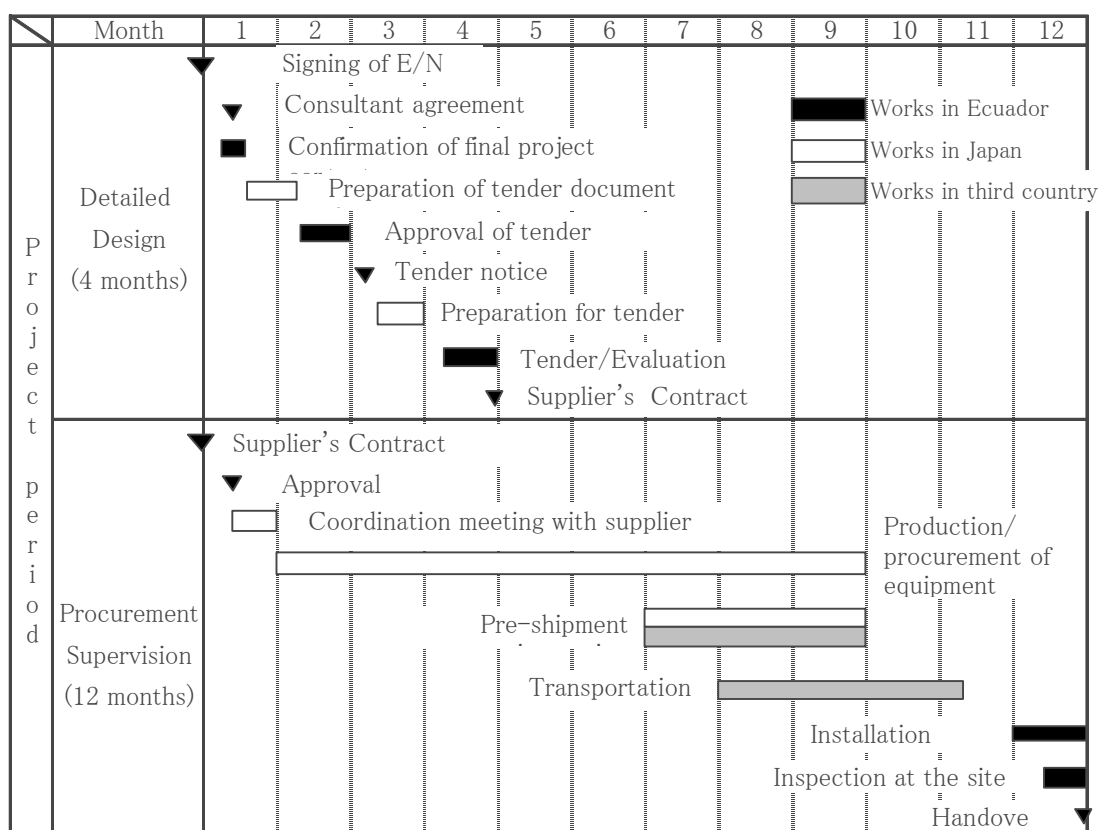
■ Equipment for Vaccine Supply Bases (No.1 to 2)

PCs and printers will be procured locally.

■ Equipment for INH (No.28 to 45)

Procurement from third countries will be considered for the items that are not produced in Japan (No.33 and 38) and those that are available only from a limited number of Japanese manufacturers (No.28, 30, 35, 37, and 40-45).

2-2-4-6 Implementation Schedule



2-3 Obligations of Recipient Country

The undertakings of the Ecuadorian side in implementing this Project consist of the following:

- ① To ensure proper and prompt customs clearance procedure for the equipment to be procured under this Project and pay associated expenses.
- ② To secure storage spaces necessary to keep the equipment to be procured under this Project.
- ③ To ensure prompt delivery of the equipment from the storehouses to their final destinations and pay associated expenses.
- ④ To pay fees related to the issuance of the Authorization to Pay (A/P) according to the Banking Arrangement (B/A) for the implementation of this Project.
- ⑤ To make necessary appropriations and employ sufficient number of personnel for the proper operation and maintenance of the equipment and supplies.
- ⑥ To carry out the construction work of the equipment for INH so as not create a hindrance to the work of the Japanese side.

2-4 Project Operation Plan

The PCs for vaccine inventory control will be maintained and managed through Information Processing Section in MOH. As for the vaccine inventory control software developed by the MOH, a training program is being planned. Thus, it is unlikely that the inventory control hardware and

software will encounter major technical problems. The healthcare equipment for the SCRs is of basic types and can be handled adequately by the SCR staff at their current skill levels. Concerning the maintenance and management in INH, Table 2-3 below summarizes the operation and maintenance system and method after the implementation of the Project. The frequencies of inspections referred to the standard operational procedures of INH, which employs two personnel, the INH technical manager and assistant technician, who are assigned exclusively to the maintenance work and will be able to attend the new equipment as well.

Table 2-3: Maintenance System and Method in INH

Equipment	Check point	Frequency	Person in charge
2F Pertussis	Cleanliness	1/month ^{*1}	Operator
3F BCG	No. of live microorganisms	1/month	Maintenance staff
Clean room unit	Filter leak	2/year	
	HEPA pressure difference	Daily	Operator
	Room to room pressure difference	Daily	
	Air flow	1/year	Maintenance staff
	Velocity of descending wind	2/year	
	Fan breakage	Daily	Operator
	Temperature/humidity ^{*2}	Daily	
	Automatic hand washer	Breakage	Daily
Pass box	Breakage (sterilization light)	Daily	
Air shower	Breakage	Daily	
UV radiometer	Calibration	1/year	Outside specialized agent
Air Particle counter	Calibration	1/year	
Air sampler	Calibration	1/year	

*1: Before each operation if continuous monitoring *2: Outside the scope of this Project

2-5 Cost of Estimation for the Project

2-5-1 Cost of Estimation for the Assistance Project

The total cost for implementing this Project is estimated at about 360 million yen. This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant. The breakdown of the cost estimate according to the scope of work for Japan and Ecuador is calculated based on the parameters listed below:

(1) Cost to be Borne by the Japanese Side:

Republic of Ecuador, Project for Basic Health Service Enhancement

Estimated Total Project Cost

Approx. 359 million yen

Item		Estimated cost (mill. yen)
Equipment	Basic Health Services	65
	EPI	8
	INH	224
Procurement supervision/installation work, etc. at local sites		24
Detailed design/construction supervision		38

- (2) Cost to be Borne by the Ecuadorian Side: 25,343.73 (USD) or 3,023,254 yen (1USD=119.29 yen)
- ① Electrical Work (wiring, etc.): 15,462.48USD
 - ② Construction Work (removal of exterior walls, installation of sterilization equipment, etc.): 9,881.25USD
- (3) Parameters of Calculation
- ① As of June 2003
 - ② Exchange Rate:

1 USD (US Dollar)	=	119.29 yen
1 EUR (Euro)	=	130.39 yen
1 PND (Pound)	=	194.85 yen
 - ③ Duration: FY 2003 (single fiscal year)
 - ④ Other: This Project will be implemented according to the framework of the Japanese grant aid

2-5-2 Operation and Maintenance Costs

Of the equipment to be procured under this Project, items that will incur maintenance cost include the icelined refrigerators and autoclave for SCRs, the PCs and printers for Division of EPI, and the equipment to be installed in the INH.

As each local Health Area executes the budget directly appropriated by the Ministry of Finance, they can probably use the budget flexibly to cover the regular check, repair, and other maintenance cost for the refrigerators, autoclave, and other equipment. On the central government level, the MOH is using PCs in their daily operations. Thus, they will probably be able to cover the maintenance cost without special appropriations. As mentioned earlier, appropriations have been made for the maintenance of the equipment INH, which should also cover the repair and maintenance of the new equipment.

The Ecuadorian side is to bear a part of the expenses for the equipment installation at INH, for which the Government of Ecuador pledged to make sufficient appropriations, as mentioned before.

2-6 Points to be Noted in Implementing the Project

Of the equipment to be provided for the INH, large items are to be installed after the removal of certain exterior walls, which is the responsibility of the Ecuadorian side. To ensure smooth delivery and installation of the equipment, the Japanese side should keep close contact with the Ecuadorian counterparts informing them of the timing of the arrival of the equipment and the installation schedule thereof.

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effect

(1) Direct Effect

- ① Provision of basic health care equipment for the 77 SCRs will improve their diagnosis, treatment, and other health services capabilities.
- ② Introduction of PCs and printers for vaccine inventory control will streamline the information system so that more appropriate quantities of vaccines will be supplied to provincial banks, Area Healths, and operation units, thereby reducing the loss of vaccines.
- ③ Provision of equipment related to vaccine production and quality inspection for the INH will lead to stable production and supply of safer vaccines.

(2) Indirect Effect

- ① Enhancement of health services provided by SCRs in poor areas will help the policy of the Government of Ecuador to alleviate poverty.
- ② Improved efficiency in the inventory control of vaccines and the strengthened vaccine production system will help to sustain the high immunization rate.

	Present Status and Problems	Solutions Offered by the Project	Expected effect and improvement
1	30.4% of the population lives below the international poverty line. Although PHC has been promoted, there are large regional disparities in the quality of health services offered.	Install basic health care equipment in the SCRs that provide health services to the residents of poverty regions.	Upgraded equipment at SCRs, which are the primary health providers of poverty regions, will ensure proper diagnosis and health check at each SCR.
2	Despite a relatively high immunization rate, vaccine supply is often interrupted due to the inadequate information management system at each vaccine storage/transport base throughout the country.	Install a PC at each vaccine storage/transportation base throughout the distribution channels from the central government to each Province and Health Area.	Strengthened information control system for immunization activities will ensure timely delivery of vaccines to their final destinations.
3	Although the INH has been producing EPI vaccines for many years, most of its production facilities and equipment are so aged or deteriorated that they are no longer operating.	Replace aged or faulty equipment with new ones to improve the production capacity and the hygienic environment. Introduce / replace quality inspection devices to ensure the safety of vaccines.	Increased production capacity of safer vaccines will ensure stable supply of vaccines within Ecuador.

3-2 Recommendations

For the “Expansion Program of PHC and Health Promotion Strategy Diffusion,” the Government of Japan initially planned to provide 26 types of basic health equipment for each of the 183 SCRs in the poverty regions. However, after the site survey revealed that the status of equipment differed from SCR to SCR, it was decided to conduct an inventory survey, to which 80 SCRs responded. As a result of the analysis of the inventory data submitted, it was decided to procure necessary equipment for 77 SCRs. Because it is possible that the 103 SCRs that did not respond to the survey do not have all the 26 types of equipment, the Ecuadorian Ministry of Health is urged to provide equipment for those SCRs.

For the “Vaccine Automated Network Development Project,” Division of EPI, MOH plans to include all the Area Health Banks. However, installing the PCs in all of these facilities at once would make the training and operational adjustment difficult, this Project will choose Bolivar and Chimborazo as pilot Provinces to test the system in their respective Health Area Banks before diffusing it to the entire country. Therefore, Division of EPI needs to continue monitoring the operation of the inventory control system and make adjustments when necessary. It is important to make certain that the system can be operated smoothly before expanding the vaccine supply network to the remaining 20 Provinces.

Although the provision of equipment for the INH is expected to improve the vaccine production environment and increase productivity, it does not provide permanent solutions unless the air-conditioning system and other faulty facilities are repaired to function properly. In addition, for the INH’s production division to operate effectively on a long-term basis, it is important to reduce cost by mass production while ensuring the safety and stable supply of vaccines. However, the price of vaccines produced by the INH is significant higher than those that Division of EPI purchases from PAHO (see the table below). Therefore, the INH will need to make more aggressive cost reduction efforts while keeping close contact with Division of EPI so that vaccines produced by the INH will be used in EPI activities on a regular basis. In other words, both the INH and Division of EPI, as well as the MOH that supervises the two organizations, should have a clear understanding as to why it is important to use domestically produced vaccines continuously or how the sustenance and development of the technology will fit into the long-term strategy of the Government of Ecuador.

Table 3-1: Comparison of Vaccine Price

	INH (2002)		PAHO (2001)	
	USD	dose	USD	dose
BCG	0.15	1	0.0984	10
DTP	0.20	1	0.0822	10
DT	0.15	1	0.0431	10

Appendix 1. Member List of the Study Team

(1). The Study Period: September 9 2002 – October 5 2002

	<u>Name</u>		<u>Organization</u>
1.	Yoshihiko SATO	Team Leader	Economic Cooperation Bureau Ministry of Foreign Affairs
2.	Yoji GOTO	Technical Advisor	The Kitasato Institute
3.	Kazuhiro KUROSAWA	Equipment Planning I	Japan International Cooperation System
4.	Akira KATO	Equipment Planning II	Japan International Cooperation System
5.	Naoko NODA	Procurement Planning	Japan International Cooperation System
6.	Atsuko YOSHIKAWA	Interpreter	Japan International Cooperation Center

(2). The Study Period: May 6 2003 – May 16 2003

	<u>Name</u>		<u>Organization</u>
1.	Shinji TOTSUKA	Team Leader	Japan International Cooperation Agency
2.	Kazuhiro KUROSAWA	Equipment Planning I	Japan International Cooperation System
3.	Akira KATO	Equipment Planning II	Japan International Cooperation System
4.	Naoko NODA	Procurement Planning	Japan International Cooperation System
5.	Atsuko YOSHIKAWA	Interpreter	Japan International Cooperation Center

Appendix 2. The Study Schedule

(1). The Study Period: September 9 2002 – October 5 2002

No.	Date		Leader	Technical Advisor	Equipment Planning I	Interpreter	Equipment Planning II	Procurement Planning	
1	9-Sep	Mon			Narita(15:50Dep. CO-006) →Houston(13:45Arr.) Houston (17:30Dep. CO-818) →Quito(22:35Arr.)			Same as the Equipment Planning I	
2	10-Sep	Tue			AM:Coutesy Call to JOCVOffice/Embassy of Japan PM:Visit Atokucho Health Center, Quito			Same as the Equipment Planning I	
3	11-Sep	Wed			AM:Coutesy call and Discussion Subsecretary General in MOH, Discussion with UNICEF EPI			Same as the Equipment Planning I	
4	12-Sep	Thu			AM:Discussion EP, Vaccine storeroom at national and province lever, Coutesy call /Discussion with PAHO			Same as the Equipment Planning I	
5	13-Sep	Fri			Visit to PAHO, Discussion with EPI, Obtain the Info. From UNICEF			Same as the Equipment Planning I	
6	14-Sep	Sat			Procurement situation study and Internal meeting			Same as the Equipment Planning I	
7	15-Sep	Sun	Narita(15:50Dep. CO-006) →Houston(13:45Arr.) Houston(17:30Dep. CO-818) →Quito(22:35Arr.)		Internal Meeting		Same as the leader	Same as the Equipment Planning I	
8	16-Sep	Mon	Coutesy call to Embassy of Japan, JOCV Office, INECI, Visit to Atokucho Health Center, Discussion with UNIEF						
9	17-Sep	Tue	Quito (8:45Dep. EQ-305) Guayaquil (9:30Arr.) Coutesy Call and discussion INH		Discussion with MOH and Luxemburg International Cooperation Quito (18:45Dep. EQ-320) Guayaquil(19:30Arr.)	same as the leader		Discussion with MOH and Luxemburg International Cooperation	
10	18-Sep	Wed	Dicussion and visit to the institute buildings						Discussion with Area Health, MOH, Obtain the Info. From UNICEF
11	19-Sep	Thu	Discussion and visit to the institute building Guayaquil (18:30Dep. EQ-320)→Quito (19:15Arr.)						Visit to SCR in Pichincha (L.L.. Bombles, Conocoto, Alangasi)
12	20-Sep	Fri	Discussion with MOH	Quito(07:00Dep. CO-880)→New York(16:07Arr.)	Same as the leader				
13	21-Sep	Sat	AM:Field Study (EPIfacilities)PM: Internal Meeting	N.Y. (13:30Dep. JL-005)	Same as the leader				
14	22-Sep	Sun	Internal Meeting	→Narita (16:10Arr.)	Internal Meeting				
15	23-Sep	Mon	Discussion with MOH and Luxemburg International Cooperation		Same as the leader				
16	24-Sep	Tue	Minute Discussion		Same as the leader				
17	25-Sep	Wed	AM:Signing Minute PM:Report to Embassy of Japan and JOCV Office				AM: Witness for signing the Minute PM: Quito (14:45Dep. EQ-314) →Guayaquil(15:30Arr.) Study on INH(facility)	AM:Witness for signing the Minute PM:Obtain info. Form EPI	
18	26-Sep	Thu	Quito(07:00Dep. CO-880)→New York(16:07Arr.)				Study on INH(facility)	Obtain info. From MOH and EPI	
19	27-Sep	Fri	N.Y. (13:30Dep. JL-005)				Study on INH(facility)	Obtain info. From MOH and EPI	
20	28-Sep	Sat	→Narita (16:10Arr.)				Study on INH(facility) Guayaquil(13:45Dep. EQ-315) →Quito (14:30Arr.) Internal Meeting	Procurement Plan Study	
21	29-Sep	Sun			Internal Meeting				
22	30-Sep	Mon			Obtain info. From MOH				
23	1-Oct	Tue			Visit to Vaccine storeroom at province level, Vaccine Storeroom at health area level, SCR in Cotopaxi Province				
24	2-Oct	Wed			Procurement Plan Study, Report to JOCVOffice and Embassy of Japan				
25	3-Oct	Thu			Quito(07:00Dep. CO-880)→New York(16:07Arr.)				
26	4-Oct	Fri			N.Y. (13:30Dep. JL-005)				

(2). The Study Period: May 6 2003 - May 16 2003

	Date		Schedule
1	May 6	Tue	Narita (15:55Departure CO-006)→Houston(13:55Arrival) Houston(17:20Depature CO-818)→Quito(22:28 Arrival)
2	May 7	Wed	10:00Coutesy Call to Embassy of Japan (With JOCV Coordinator) 11:30Coutesy Call to Ministry of Foreign Affairs (INECI) PM Discussion with MOH (Explanation of the study purpose)
3	May 8	Thu	Discussion (EPI, MOH) Quito(13:00Departure EQ-313)→Guayaquil (13:45Arrival) Discussion with INH (Explanation of the study purpose)
4	May 9	Fri	Discussion with INH (Visit to the Institute facilities)
5	May 10	Sat	Discussion with construction engineer for INH Filing the obtained documents
6	May 11	Sun	Discussion and obtain the estimation of the cost from the engineer Guayaquil (16:00Departure EQ-192)Quito(16:45 Arrival)
7	May 12	Mon	Site visit Rural Sub Health Center(SCR) (Imbabura Province Iluman、Zuleta)
8	May 13	Tue	Discussion with MOH (Minute of Discussion)
9	May 14	Wed	Signing the Minute of Discussion Report to Embassy of Japan (With JOCV Coordinator) Quito(23:05Departure CO-818)→
10	May 15	Thu	Houston(05:25 Arrival) Houston(10:40Departure CO- 007)→
11	May 16	Fri	Narita(14:20 Arrival)

Appendix 3. List of Parties Concerned in the Recipient Country

(1). The Study Period: September 9 2002 – October 5 2002

Organization	Position	Name
Ministry of Health	Sub Secretary General	Dr. Carlos Cepeda
	Advisor for Sub Secretary General (Reform of INH)	Dra. Patria Echenique
	Managing Director, Dept. of Int'l Cooperation	Mr. Luis Romo
	Dept. of International Cooperation	Ms. Martha Noboa
	Director, Nutrition	Dr. Julio Alvear Molina
	Medical Doctor, Child Health	Dra. Irlanda Ordonez
	Director, Oral Hygiene	Dr. Dual Borja Freire
EPI, MOH	Director	Dr. Nancy Vasconez
	Assistant Director	Dr. Grijarva
	Staff, Medical doctor	Dr. Nelson Anibal Oquendo
	Staff, Nurse	Ms. Jackeline Pinos
Area Health, MOH	Director	Dr. Patricio Ampudia Romero
	Staff, Medical Doctor	Dra. Elva Romero
	Staff, Medical Doctor	Dr. Jose Castro
	Staff, Medical Doctor	Dra. Elva Romero
INH	Managing Director	Dr. Francisco H. Manrique
	Director, Human Health	Dra. Elizabeth B. Estupinan
	Education	Dra. Cecilia Ampuero
	Coordinator and Advisor	Dra. Tania Mora
	Director, Microorganism Diagnosis	Dra. Araceli A. Alprecht
	Director, Vaccine production	Dra. Gladys A. Gonzalez
	Director, Vaccine Management	Dra. Leonor Suarez
	Immunochemistry Labo.	Dra. Janette Rivero
	Biochemistry Laboratory	Dra. Elva Camba
	Diphtheria Toxioid Labo.	Dra. Hugo Proano
	BCG Vaccine	Dra. Doris Alvarez
	Pertussis Vaccine	Dra. Diana Cevallos
	Tetanus Toxioid	Dra. Maira Garcia de Leon
	Electron Microscope Labo.	Dr. Gustavo Rubio Coronel
	Adivisor, E. Microscope Labo.	Dr. Yasuji Amano

	Rabies(human/canine) Vaccine Labo.	Dr. Ana Chavez Montero
	Antivenin Serum Labo.	Dra. Dayse Jordan
	Intenal management labo.	Dra. Jenny Navas
INH	Director engineer	Ing. Jose Zambrano
	Assistant engineer	Sr. Carlos Rivas A.
Pichincha Province, Department of Health	Health Service	Dr. Mario Pineiros
National bank (Vaccine Storeroom at national level)	Administrator	Mr. Gerardo Proano
Bank in Pichincha Provinvince (Vaccine Storeroom in Pichincha)	Representative	Ms. Agueda Arroyo
Quito, Pichincha Atokucho Health Center	Medical doctor	Dra. Patricia Maggi
	Medical doctor	Dra. Rosa Goyes
	Assistant nurse (Pharmacy)	Ms. Martha Galarza
	JOCV, Nurse	Ms. Tomoko KIHARA
Conocoto SCR, Quito	Medical doctor	Dr. Favian Alvarez
Lucha.Los.Pombles SCR, Quito	Medical doctor	Dra. Jaquelin Uelez
Alangasi SCR, Quito	Medical doctor	Dr. Gonzales
	Assistant Nurse	Ms. Teresa Salozar Norona
Cotopaxi Province, Department of Health	Director, provincial health	Dr. Fernando Mejia
	Sub director, engineering	Guillermo Gamboa
	EPI coordinator	Lic. Vilma Mena
	Provincial vaccine storeroom	Gallo Seballos
Health Area No. 4	Health area vaccine storeroom	Sonia Lopez
	Assistant dentist	Silvia Villavicent
Tanicuchi SCR	Assistant Nurse	Ema Cruz
Canchagua SCR	Rural Medical doctor	Dra. Susana Baez
	Assistant Nurse	Beti Falconi
Ministry of Foreign Affairs (INECI)		Mr. Juan Carlos Brivio
Luxembourg Technical Cooperation Agency (Ecuador Office)	Representative	Mr. Paul Scheeck
UNICEF, Ecuador Office	Representative	Yoriko YASUKAWA
	Health, EPI	Dr. Juan Vasconez
	Assistant, Nutrition	Mr. Ivan Yerovi
PAHO, Ecuador Office	Representative	Mr. Diego Victoria Mejia

	Disease control	Dr. Roberta S. Ontaneda
MODERSA(WB Project)	Coordinator	Dr. Fernando Torres Andrade
Embassy of Japan	Counselor	Mr. Ito
	Secretary	Mr. Nakano
	Secretary	Mr. Ashizawa
	Coordinator	Ms. Kamasaka
JOCV Office	Coordinator	Mr. Takada
	Coordinator	Ms. Takahashi

(2). The Study Period: May 6 2003 – May 16 2003

Organization	Position	Name
MOH	Ministe of Health	Dr. Francisco Andino
	Subsecretary of General Health	Dr. Javier Carrillo Ubidia
	Sub Director of General Health	Dr. Marcos Loor
	Managing Director of International Cooperation	Dr. Mario Méndez M.
	Intenational Cooperation	Mr. Luis Romo
	Director of Area Health	Dr. Patricio Ampudia R.
	Health Service	Ms. Anita Huachi Espin
	Staff, International Cooperation	Ms. Martha Noboa
	Project manager, Area Health	Dra. Judy Irigoyen V.
	EPI Coordinator	Dr. Nancy Vásconez
	Area Health	Dr. Jose Castro
	Dep. of Management, Import	Ing. María Eugenia Aguirre
	Advisor for Juridical affairs	Dr. Patricio Guijarro
INH	Coordinator	Dra. Tania Mori
	Director, Vaccine production	Dra. Gladys Alvarez de González
	Immunochemistry Labo.	Dra. Janeth Rivero de Sánchez
	Electron microscope Labo.	Dr. Gustavo Rubio C.
	Advisor for INH	Dr. Yasuji Amano
	BCG Labo.	Dra. Doris Alvarez
	Vaccine Management Labo.	Dra. Sayuri Reyes García
St. Luis Hospital, Obatalo	Sub director for Technical	Lic. Paul Proaño
Iluman SCR	Rural Medical Doctor	Dr. René Gordillo
	Assistant Nurse	Sra. Alicia Guerrero
	Dentist	Dra. Azucena Valenzuela
Zuleta SCR	Assistant Nurse	Sra. Lolena Quintana
	JOCV, Nurse	Ms. Ema SUZUKI
Embassy of Japan		Ambassador, Mr. HIRAMATSU
		Secretary, Mr. NAKANO
JOCV Office		Coordinator, Mr. ONO

Appendix 4. Minutes of Discussions

**MINUTA DE DISCUSIONES
SOBRE
EL ESTUDIO
PARA
EL PROYECTO DE APOYO AL PROGRAMA AMPLIADO DE INMUNIZACIONES
EN
LA REPUBLICA DEL ECUADOR**

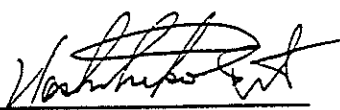
En respuesta a la solicitud del Gobierno de la República del Ecuador, el Gobierno del Japón decidió realizar un Estudio para el Proyecto de Apoyo al Programa Ampliado de Inmunizaciones (en adelante se denominará "el Proyecto") y encargó dicho Estudio a la Agencia de Cooperación Internacional del Japón (en adelante se denominará "JICA").

Por consiguiente, JICA envió a la República del Ecuador una Delegación de Estudio (en adelante se denominará "la Delegación"), dirigida por el Lic. Yoshihiko Sato, oficial de la Dirección de la Cooperación Financiera No Reembolsable del Ministerio de Relaciones Exteriores del Japón, desde el 9 de Septiembre hasta el 3 de Octubre de 2002.

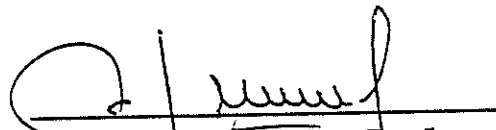
La Delegación mantuvo reuniones con las autoridades del Gobierno de la República del Ecuador y realizó el estudio pertinente al Proyecto.

Como consecuencia de las discusiones y los estudios de campo, ambas partes han confirmado puntos descritos en las hojas adjuntas.

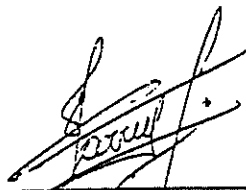
Quito, el 25 de Septiembre de 2002



Lic. Yoshihiko Sato
Líder
Delegación de Estudio
Japón



Dr. Francisco Carrasco Dueñas
Ministro de Salud Pública (Encargado)
República del Ecuador



Eco. Vladimir Jarrín Jarrín
Director Ejecutivo Encargado
Instituto Ecuatoriano de Cooperación Internacional (INECI)
Ministerio de Relaciones Exteriores
República del Ecuador



DOCUMENTO ADJUNTO

1. Antecedentes del Proyecto

El Gobierno de la República del Ecuador solicitó asistencia al Gobierno del Japón para fortalecer al Programa Ampliado de Inmunizaciones (PAI). Durante la realización del Estudio, el Gobierno del Ecuador mediante el Ministerio de Salud Pública presentó el requerimiento de mejorar las condiciones de la fabricación de biológicos del Instituto Nacional de Higiene y Medicina Tropical Leopoldo Izquieta Pérez (INH). El Ministerio de Salud Pública y la Delegación reconocieron el posible mejoramiento en la producción de biológicos mediante la introducción y remodelación de una parte de equipos e instalaciones de dicho Instituto; y también la necesidad de equipos de atención médica para áreas rurales de mayor pobreza con el propósito de fortalecer tanto los servicios básicos de salud como el PAI. Por consiguiente, la Delegación decidió mantener reuniones con las autoridades del Gobierno de la República del Ecuador sobre la provisión de equipos necesarios para el Ministerio de Salud Pública (La Dirección General de Salud y el INH).

2. Objetivo del Proyecto

Este Proyecto tiene como objetivo fortalecer el PAI, el INH y los servicios básicos de salud del Ecuador mediante la provisión de los equipos que a continuación aparecen:

1) Equipos de Refrigeración:

Equipos de cadena de frío y los de asistencia médica básica

2) Equipos para la Fabricación de Vacunas

Equipos para la medición ambiental como contador de partículas y comprobador de aire, envasadora de ampollas y sus accesorios, equipos relacionados a la construcción de cuartos limpios, etc.

3. Organismo Responsable y Ente Ejecutor

El organismo responsable del Proyecto será el Ministerio de Salud Pública y los entes ejecutores serán la Dirección General de Salud y el INH (Véase el Anexo-1).

4. Solicitud del Gobierno de la República del Ecuador

Luego de las reuniones mantenidas y los estudios de campo ejecutados, la parte Ecuatoriana y la Delegación han confirmado el contenido de la solicitud de la República del Ecuador y su grado de prioridad como muestra el Anexo-2. La aprobación definitiva del Proyecto, sin embargo, se determinará después de analizarse los resultados del Estudio.

Orden de Prioridad

- A = Primera Prioridad / Esencial
- B = Segunda Prioridad / Necesita estudiar

C = Tercera Prioridad / Si es posible

5. Sistema de Cooperación Financiera No Reembolsable del Japón

5-1. La parte Ecuatoriana ha comprendido el Sistema de Cooperación Financiera No Reembolsable del Japón explicado por la Delegación, según el **Anexo-3**.

5-2. En el caso de que se aplique la Cooperación Financiera No Reembolsable del Japón, la parte Ecuatoriana tomará las medidas necesarias descritas en el **Anexo-4**, a fin de obtener una buena ejecución del Proyecto.

6. Programa del Estudio

JICA preparará el Informe Final del Estudio sobre el Proyecto y lo entregará a la parte Ecuatoriana alrededor del mes de febrero de 2003.

7. Otros Asuntos Relevantes

7-1 Necesidad del Monitoreo

Ambas partes han acordado la importancia del monitoreo y evaluación del Proyecto. El Ministerio de Salud Pública se ha comprometido a entregar un informe anual de monitoreo y evaluación del Proyecto a la Embajada del Japón en Quito y al INECI, en el mes de enero durante los cinco años consecutivos, luego de finalizar la adquisición de los equipos.

La información que contendrá dicho informe será como sigue:

- 1) Dirección General de Salud: Distribución y estado del uso de los equipos donados;
- 2) Instituto Nacional de Higiene y Medicina Tropical Leopoldo Izquieta Pérez

① Área en que fue instalado cada uno de los equipos donados;

② Fecha de su instalación;

③ Resultado de la prueba de la puesta en marcha;

④ Cantidad de biológicos fabricados que hayan pasado el examen del Departamento de Control de Calidad de Biológicos; y

⑤ Cantidad de los biológicos entregados al PAI.

7-2 Esfuerzos Propios de la Parte Ecuatoriana

7-2-1 Provisión de Biológicos

La parte Ecuatoriana se compromete a continuar la provisión de las vacunas necesarias para la ejecución del PAI bajo sus propios recursos del Estado.


7-2-2 Equipos a Ser Donados a la Dirección General de Salud

La parte Ecuatoriana ha prometido distribuir oportunamente los equipos donados a cada uno de sus respectivos lugares de instalación y capacitar a su personal para su manejo adecuado.

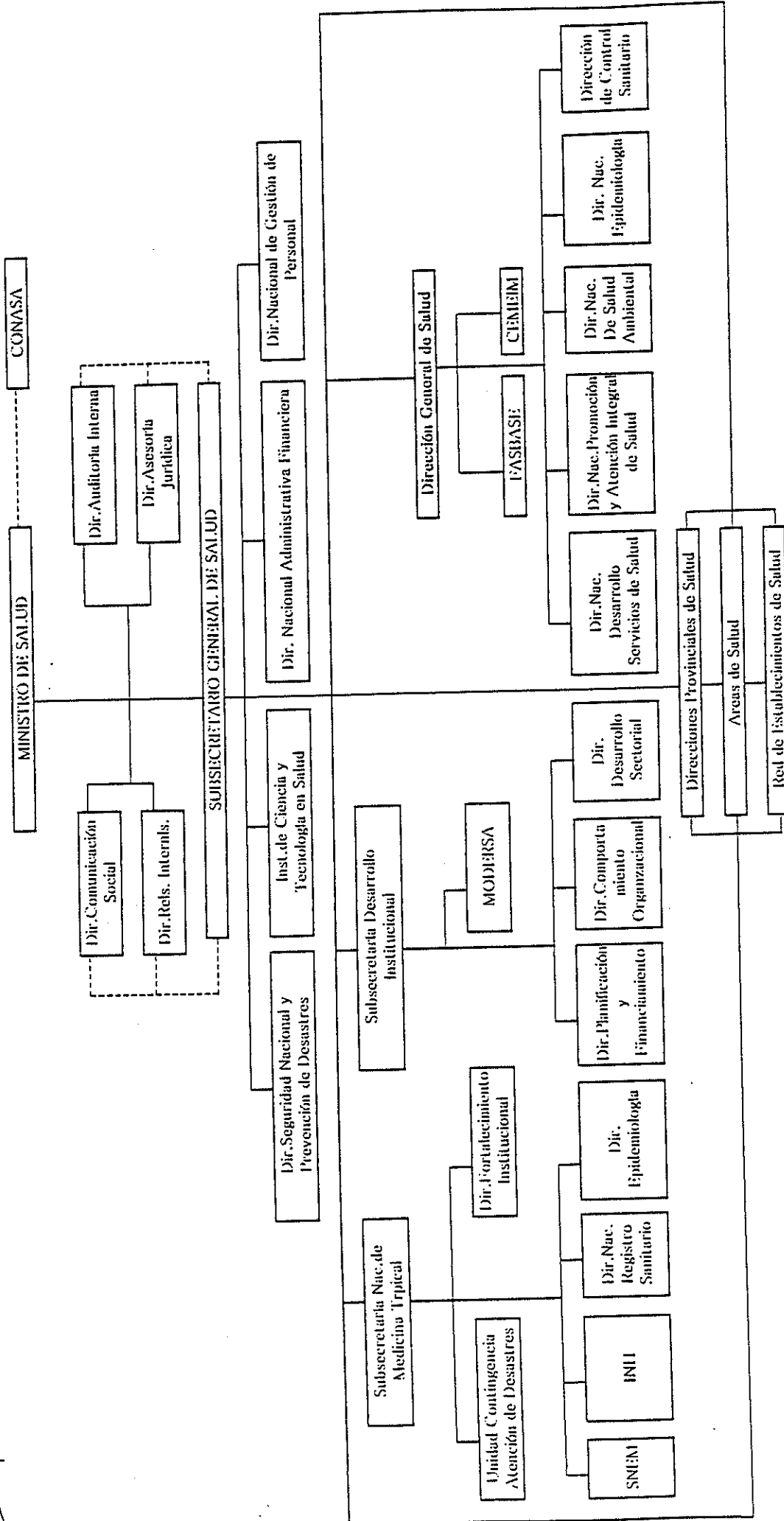
7-2-3 Instituto Nacional de Higiene y Medicina Tropical Leopoldo Izquieta Pérez

A efectos de mejorar las condiciones de fabricación de vacunas en el Instituto Nacional de Higiene, la parte Ecuatoriana ha prometido ejecutar oportunamente las obras de

preparación necesarias para la instalación y puesta en marcha de los equipos a ser adquiridos mediante este Proyecto.




MINISTERIO DE SALUD PUBLICA ORGANIGRAMA ESTRUCTURAL



LISTAD DE EQUIPAMENTO PARA SUBCENTRO DE SALUD Y PAI

NOMBRE DE EQUIPO		CANTIDAD	PRIORIDAD
PROGRAMA AMPLIADO DE IMMUNIZACIONES			
1	Refrigerador y Congelador "celined"	183	A
2	Estabilizador de Voltaje	183	A
3	Termo portavacuna	183	A
4	Paquetes Frios, 4/juego	183	A
5	Termometro, 3/juego	183	A
6	Computadoras	37	B
EQUIPO E INSTRUMENTAL MEDICO			
7	Estetoscopio para Adultos	183	A
8	Estetoscopio para Pediatrico	183	A
9	Estetoscopio para Neonatal	183	A
10	Tensiometro Aneroide para Adultos	183	A
11	Tensiometro Aneroide para Pediatrico	183	A
12	Balanza de Adultos con Tallimento	183	A
13	Balanza Pediatrica	183	A
14	Equipos de Curaciones	183	A
15	Equipos de Sutura Simple	183	A
16	Equipos de Partos	183	A
17	Especulos Vaginales, Medianos y Pequeños	183	A
18	Equipo de Ambu para Adultos y Pediatrico	183	A
19	Mesa para Examen Pediatrico	183	A
20	Mesa para Examen General con Pierneras	183	A
21	Termometros	183	A
22	Semilunas Medianas, grandes y pequenas	183	A
23	Basurero de acero a pedal y con tapa	183	A
24	Lampara cuello de Ganso	183	A
25	Estanilizador Mediano	183	A
26	Unidad Dental Portatil	183	B
27	Equipo Diagnostico	183	B

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LISTAD DE EQUIPAMENTO PARA INSTITUTO NACIONAL DE HIGIENE Y MEDICINA TROPICAL
DEPARTAMENTO DE PRODUCCION

NOMBRE DE EQUIPO	CANTIDAD	PRIORIDAD
LABORATORIO: VACUNA B.C.G.		
1 Máquina Envasadora Automática	1	A
2 Máquina Selladora al Vacío Kumabe	1	B
3 Deshumificador	1	C
4 Gabinete de Seguridad Clase II	1	C
5 Cabina para control de humedad menor	1	C
6 Máquina selladora automática para ampollas con diluyente	1	C
7 Subcero	1	B
8 Secador de manos	1	B
9 Sorbona	1	C
10 Potenciómetro	1	C
11 Espectrofotómetro	1	B
12 Homo esterilizador dos puertas	1	C
13 Refrigerador	1	C
14 Canastas para en máquina lavadora	1	B
15 Incubadora	2	A
16 Baches		

LABORATORIO: PERTUSSIS		
17 Máquina lavadora de ropa	1	C
18 Máquina secadora de ropa	1	C
19 Lavadora de Pipetas	1	B
20 Autoclave	1	B
21 Hot Air Oven Electric	2	B
22 Vortex Mixer	1	C
23 Vortex Mixer	1	B
24 Microscopio de luz	1	C
25 Balanza	1	C
26 Lavadora y secadora de manos	1	B
27 Ph Meter	1	C
28 Caja de Transferencia	1	A
29 Lavadora y secadora de manos	1	B
30 Deshumificador	1	B
31 Ducha de aire	1	A
32 Bomba Peristáltica	1	C
33 Platos para agitación magnética	1	C

LABORATORIO: DIPHTHERIA TOXOID		
34 Máquina lavadora de ropa	1	C
35 Máquina secadora de ropa	1	C
36 Auclave eléctrico	1	C
37 Balanza Análítica	1	A
38 Centrifuga Refrigerada	1	A
39 Bomba Peristáltica	1	B
40 Ducha de aire	1	B
41 Lavadora y secadora de manos	1	B
42 Platos para agitación	1	C
43 Concentrador /purificador magnética	1	A
44 Cartuchos / Ultrafiltro	5	A
45 Ducha de aire	1	B

LABORATORIO: TETANUS TOXOID		
46 Máquina lavadora de ropa	1	C
47 Máquina secadora de ropa	1	C
48 Homo esterilizador con calor	1	B
49 Concentrador/purificador, seco doble puerta	1	A
50 Cartuchos / Ultrafiltro	5	A
51 Lavadora y secadora de manos	2	B
52 Congelador	1	B
53 Medidor de voltaje de lámparas ultra violeta	1	A
54 Cabina de Bioseguridad	1	B
55 Deshumificador	1	C
56 Caja de Transferencia	1	A
57 Deshumificador	1	C
58 Caja de Transferencia	1	A
59 Bomba Peristáltica	1	C
60 Ducha de aire	1	B
61 Lavadora y secadora de manos	1	B

LABORATORIO: MIXING AND FILLING		
61	Cuarto modular con filtros HEPA	A
62	Llenadora y Selladora de Ampollas	C
63	Ducha de aire	A
64	Deshumidificador	C
65	Lavadora y secadora de manos	A
66	Bomba Peristáltica	C
67	Platos para agitación magnética	B
68	Cuarto modular con filtros HEPA	A
69	Platos para agitación magnética	B
70	Ducha de aire	A
71	Deshumidificador	C
72	Comprobador de aire	2 A
73	Máquina lavadora de frascos ampollas	1 C
74	Máquina lavadora de ropa	1 C
75	Máquina secadora de ropa	1 C
76	Cuato Frío	1 C
77	Refrigerador	1 B
78	Congelador	1 B
79	Ice Maker	1 B
LABORATORIO: GENARAL		
80	Auoclave =	1 C
81	Juego de Lámparas U.V.	36 C
82	Electroforesis	1 C
83	Contador de Partículas en el aire	1 A
84	Medidor de voltaje de lámparas ultra violeta	1 A
85	Equipo para cromatografía líquida de alta presión	1 C
86	Máquina imprenta	1 C
87	Sistema PCR	1 C
88	Termociclador	1 C
89	Transiluminador de UV	1 C
90	Sistema Polaroid de Fotografía	1 C
91	Microcentrífuga refrigerada	1 C
92	Baño María	1 C
93	Cabina de Bioseguridad	1 C
94	Cabina de Bioseguridad	1 C
95	Congelador	1 C
LABORATORIO: INTERNAL CONTROL		
96	Microscopio Binocular	1 B
97	Refrigerador	1 B
98	Contador de Partículas en el aire	1 A
99	Lavadora y Secadora	1 B
100	Magnetic Shaker	1 C
101	Water Bath	1 B
102	Elisa System	1 C
103	Auclave eléctrico	1 B
104	Incubador	1 B
105	Centrífuga Refrigerada	1 B
106	Furnace Programmable	1 C
107	Pipeta	1 C
108	Micropipet	1 C
109	Clinic rotator	1 C
LABORATORIO: SUERO ANTIOFODOCO		
110	Autoclave	1 C
111	Estufa	1 C
112	Baño María	1 C
113	Baño María	1 C
114	Ph metro	1 C
115	Lavador de frascos	1 C
116	Balanza	1 C
117	Incubadora	1 C
LABORATORIO: RABIES VACCINE		
118	Cabina de Bioseguridad	1 C
119	Máquina para hielo seco clase II	1 C
120	Centrífuga refrigerada (4°C)	1 C
121	Llenadora y selladora automática para frascos	1 C
122	Cuarto aséptico clase 100	1 C
123	Horno esterilizador	1 C
124	Balanza analítica	1 C
125	Cabina de Bioseguridad clase II	1 C
126	Incubadora	1 C
127	Lavadora v secadora de ropa	1 C

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DEPARTAMENTO DE CONTROL NACIONAL DE BIOLÓGICOS E INMUNIZANTES

NOMBRE DE EQUIPO		CANTIDAD	PRIORIDAD
LABORATORIO: VACUNAS BACTERIANAS			
		1	A
128	Microcentrifuga refrigerada	1	A
129	Lector de Elisa de Microplacas	1	A
130	Lavador de Elisa	1	B
131	Incubadora de Anhídrido carbónico	1	C
132	Pipetas multicanales	1	C
133	Pipetas multicanales	1	C
134	Pipetas multicanales	2	C
135	Micropipeta	2	C
136	Micropipeta	4	C
137	Micropipeta	3	C
138	Auxiliar Macropipeteador	3	C
139	Cabina de Bioseguridad	2	B
140	Refrigeradoras grandes	1	A
141	Microscopio Invertido	1	B
142	Microscopio	1	B
143	Microscopio Fluorescencia	2	B
144	Incubadora	3	C
145	Mascarilla facial de protección con filtro	1	C
146	Copiadora	150	C
147	Cajas de animales con tapa	50	C
148	Cajas de animales con tapa	3	C
149	Rasuradora de animales	5	C
150	Perchas porta jaula	3	C
151	Tabla fijadora para animales	1	C
152	Balanza para animales	1	C
153	Balanza para animales	2	B
154	Refrigeradoras pequeñas	1	B
155	Electroforesis + IEF con todos los accesorios	1	A
156	Microkjeldahl Digestion	1	C
157	Mufla digital	1	B
158	HPLC	1	C
159	Termómetro digital	10	C
160	Termómetro certificado	1	C
161	Termociclador	10	C
162	Cubetas de Quartz		

SISTEMA DE LA COOPERACION FINANCIERA NO REEMBOLSABLE DEL JAPON

1. Procedimiento de la Cooperación Financiera No Reembolsable del Japón

1) El procedimiento de la Cooperación Financiera No Reembolsable del Japón es el siguiente.

Solicitud (Presentación de una solicitud oficial por el país receptor)

Estudio (Estudio de Diseño Básico conducido por JICA)

Evaluación y Aprobación (Evaluación del Proyecto por el Gobierno del Japón y aprobación por el Gabinete)

Decisión de Realización (Firma del Canje de Notas por ambos gobiernos)

Realización (realización del Proyecto)

2) En la primera etapa, el Gobierno del Japón (el Ministerio de Relaciones Exteriores) estudia la solicitud formulada por el país receptor si el Proyecto es apropiado para la Cooperación Financiera No Reembolsable. Si se confirma que la solicitud tiene alta prioridad como Proyecto para la Cooperación Financiera No Reembolsable, el Gobierno del Japón ordena a JICA a efectuar el Estudio.

Luego viene la segunda etapa, que se refiere al Estudio de Diseño Básico; JICA realiza este estudio, en principio, contratando una compañía consultora japonesa.

En la tercera etapa, la Evaluación y la Aprobación, el Gobierno del Japón evalúa y confirma que el Proyecto es apropiado para la Cooperación Financiera No Reembolsable, en base al informe de Diseño Básico elaborado por JICA en la segunda etapa, luego envía el contenido del Informe al Gabinete para su aprobación.

En la cuarta etapa, la Decisión de Realización, el Proyecto aprobado por el Gabinete se firma un Canje de Notas por los representantes del Gobierno del Japón y del Gobierno receptor.

Durante la realización del Proyecto, JICA extenderá ayudas necesarias al Gobierno receptor en los procesos de licitación, contrato, etc.

2. Estudio de Diseño Básico

1) Contenido del Estudio

El Estudio de Diseño Básico conducido por JICA está destinado a proporcionar el documento básico necesario para que el Gobierno del Japón evalúe si el Proyecto es viable o no para el sistema de la Cooperación Financiera No Reembolsable del Japón. El contenido del Estudio incluye;

a) confirmación de los antecedentes, el objetivo, la eficiencia del Proyecto, y la capacidad de la organización responsable para la administración y mantenimiento del

Proyecto.

- b) examen de la viabilidad técnica y socio-económica.
- c) confirmación del concepto básico del Plan Óptimo del Proyecto a través de la mutua deliberación con el país receptor.
- d) preparación del Diseño Básico del Proyecto.
- e) estimación del costo del Proyecto.

El contenido del Proyecto aprobado arriba mencionado no necesariamente coincide totalmente con la Solicitud original, sino que se confirma en consideración al esquema de la Cooperación Financiera No Reembolsable.

Al realizar el Proyecto bajo la Cooperación Financiera No Reembolsable, el Gobierno del Japón desea que el Gobierno del país receptor tome todas las medidas necesarias para promover su auto-suficiencia. Esas medidas deberán asegurarse aunque estén fuera de la jurisdicción de la entidad ejecutora del Proyecto en el país receptor. Por lo tanto, la ejecución del Proyecto es confirmada por todas las organizaciones relevantes en el país receptor mediante las Minutas de las Discusiones.

2) Selección de la compañía consultora

Al realizar el Estudio, JICA selecciona una de las compañías consultoras - entre aquellas registradas en JICA - mediante una licitación en la que presentan sus propuestas. La compañía seleccionada realiza el Estudio de Diseño Básico y elabora el Informe bajo la supervisión de JICA. Después de la firma de Canje de Notas, con el fin de asegurar coherencia técnica entre el Diseño Básico y el Diseño Detallado, JICA recomienda al país receptor emplear la misma compañía consultora que se hizo cargo del Diseño Básico para el Diseño Detallado y supervisión de la realización del Proyecto.

3. Esquema de la Cooperación Financiera No Reembolsable

1) Cooperación Financiera No Reembolsable

La Cooperación Financiera No Reembolsable consiste en la donación de fondos que no requiere la obligación de reembolso por parte de los países receptores, y permiten a través del fondo adquirir equipos, materiales y servicios (servicios técnicos, transportes, etc.) necesarios para el desarrollo económico y social de los países, bajo las normas siguientes y las leyes relacionadas del Japón. La Cooperación no se extiende a donaciones en especie.

2) Firma de Canje de Notas

En la realización de la Cooperación Financiera No Reembolsable, se necesita el acuerdo y la firma del Canje de Notas (C/N) entre ambos gobiernos. En el C/N se aclaran el objetivo, el período efectivo de la donación, las condiciones de realización y el límite del monto de la donación.

3) Período de ejecución

El período efectivo de la donación debe ser dentro del mismo año fiscal del Japón (del 1 de abril hasta el 31 de marzo del siguiente año) en el que el Gabinete aprobó la cooperación. Durante este período debe concluirse todo el proceso desde la firma del C/N hasta el contrato con la compañía consultora o constructora, incluyendo el pago final.

Sin embargo, en el caso de un retraso en el transporte, instalación o construcción por la condición de clima u otros, existe la posibilidad de prolongar a lo más por un año (un año fiscal) previa consulta entre ambos gobiernos.

4) Adquisición de los productos y servicios

La Cooperación Financiera No Reembolsable será utilizada apropiadamente por el Gobierno del país receptor para la adquisición de los productos japoneses o del país receptor y los servicios de nacionales japoneses y nacionales del país receptor para la ejecución del Proyecto: (El Término "nacionales japoneses" significa personas físicas japonesas o personas jurídicas japonesas controladas por personas físicas japonesas.)

No obstante, lo arriba mencionado, la Cooperación Financiera No Reembolsable podrá ser utilizada, cuando los dos Gobiernos lo estimen necesario, para la adquisición de productos de terceros países (excepto Japón y el país receptor) y los servicios para el transporte que no sean de los nacionales japoneses ni de nacionales del país receptor.

Sin embargo, considerando el esquema de la donación del Japón, los contratistas principales para la ejecución del Proyecto como consultores, constructores y proveedores deberán ser nacionales japoneses.

5) Necesidad de Verificación

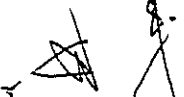
El Gobierno del país receptor o la autoridad designada por él, concertará contratos, en yenes japoneses, con nacionales japoneses. A fin de ser aceptable, tales contratos deberán ser verificados por el Gobierno del Japón. Esta verificación se debe a que el fondo de Donación proviene de los impuestos generales de los nacionales japoneses.

6) Responsabilidad del Gobierno Receptor

El Gobierno del país receptor tomará las medidas necesarias como sigue:

a) asegurar la adquisición y preparación del terreno necesario para los lugares del Proyecto, y limpiar y nivelar terreno previamente al inicio de los trabajos de construcción.

b) proveer de instalaciones para la distribución de electricidad, suministro de agua, el sistema de desagüe y otras instalaciones adicionales dentro y fuera de los lugares del Proyecto.



c) proporcionar los edificios y los espacios necesarios en caso de que el Proyecto incluya la provisión de equipos.

d) asegurar todos los gastos y la pronta ejecución del desembarco y despacho aduanero en el país receptor y en el transporte interno de los productos adquiridos bajo la Cooperación Financiera No Reembolsable.

e) eximir del pago de derechos aduaneros, impuestos internos y otras cargas fiscales que se impongan a los nacionales japoneses en el país receptor con respecto al suministro de los productos y los servicios bajo los Contratos Verificados.

f) otorgar a nacionales japoneses, cuyos servicios sean requeridos en conexión con el suministro de los productos y los servicios bajo los Contratos Verificados, las facilidades necesarias para su ingreso y estadía en el país receptor para el desempeño de sus funciones.

7) Uso Adecuado

El país receptor deberá asegurar que las instalaciones construidas y los productos adquiridos bajo la Cooperación Financiera No Reembolsable sean debida y efectivamente mantenidos y utilizados asignando el personal necesario para la ejecución del Proyecto.

Deberá también sufragar todos otros gastos necesarios, a excepción de aquellos gastos a ser cubiertos por la Donación.

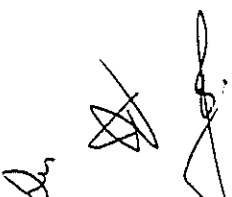
8) Reexportación

Los productos adquiridos bajo la Cooperación Financiera No Reembolsable no deberán ser reexportados del país receptor.

9) Arreglo Bancario

a) El Gobierno del país receptor o la autoridad designada por él deberá abrir una cuenta bancaria a nombre del Gobierno del país receptor en un banco en el Japón (en adelante, referido como "el Banco"). El Gobierno del Japón llevará a cabo la Cooperación Financiera No Reembolsable efectuando pagos, en yenes japoneses, para cubrir las obligaciones contraídas por el Gobierno del país receptor o la autoridad designada por él, bajo los Contratos Verificados.

b) Los pagos por parte del Japón se efectuarán cuando las solicitudes de pago sean presentadas por el Banco al Gobierno del Japón en virtud de una autorización de pago (AVP) expedida por el Gobierno del país receptor o la autoridad designada por él,



PRINCIPALES MEDIDAS QUE HAN DE TOMAR AMBOS GOBIERNOS

Item	Descripción	Ser asumido por la Cooperación Financiera No Reembolsable (Parte Japonesa)	Ser asumida por el país receptor
1.	Pagar las siguientes comisiones a un Banco del Japón por los servicios bancarios de conformidad con el Arreglo Bancario (A/B)		
	1) Comisión de aviso de Autorización de Pago (A/P)		■
	2) Comisión de pago		■
2.	Asegurar la pronta ejecución de la descarga y despacho aduanero en el Puerto de desembarque		
	1) Transporte marítimo (aéreo) de los productos desde el Japón hasta el país receptor	■	
	2) Exoneración de impuestos y despacho aduanero de los productos en el puerto de desembarque		■
	3) Transporte interno desde el puerto de desembarque hasta los sitios del Proyecto.		■
3.	Otorgar a los nacionales japoneses cuyos servicios sean requeridos con relación a los suministros de los productos y los servicios bajos el contrato verificado, las facilidades necesarias para su ingreso y estadía en el país receptor.		■
4.	Eximir a los nacionales japoneses de los derechos aduaneros, impuestos internos y otros gravámenes fiscales relacionados con el suministro de los productos y servicios bajo el contrato verificado.		■
5.	Mantener y usar adecuada y efectivamente los equipos suministrados por el Sistema de la Cooperación Financiera No Reembolsable.		■
6.	Hacerse cargo de todos los gastos, que no están incluidos en el Sistema de la Cooperación Financiera No Reembolsable, necesarios para el transporte y la instalación de los equipos.		■

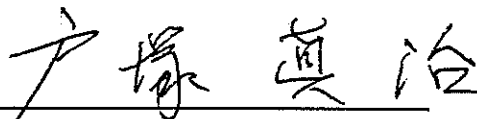
**MINUTA DE DISCUSIONES
SOBRE
EL ESTUDIO
PARA
EL PROYECTO DE APOYO AL SERVICIO BÁSICO DE SALUD
EN
LA REPUBLICA DEL ECUADOR**

En septiembre de 2002, la Agencia de Cooperación Internacional del Japón (en adelante se denominará "JICA") envió a la República del Ecuador una Misión de Estudio para el Proyecto de Apoyo al Programa Ampliado de Inmunizaciones y mantuvo reuniones con las autoridades del Gobierno de la República del Ecuador (en adelante se denominará "la parte ecuatoriana") y realizó el estudio de campo pertinente al Proyecto, seguido del análisis interno sobre sus resultados en el Japón .

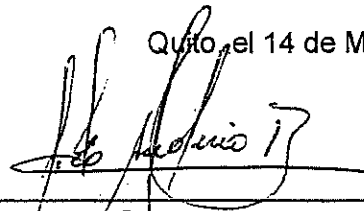
JICA envió una misión de estudio, encabezada por el Lic. Shinji TOTSUKA, Director adjunto, II División de Gestión de Proyectos, Departamento de Gestión de Cooperación Financiera No Reembolsable, JICA, para explicar y discutir sobre los resultados del estudio de campo y su análisis interno en el Japón con la parte ecuatoriana. Dicha misión permanecerá en el Ecuador del 6 al 14 de Mayo de 2003.

Como consecuencia de las reuniones mantenidas, ambas partes han confirmado puntos descritos en el Documento Adjunto. Dicha misión de estudio elaborará un informe de estudio basado en los resultados de este estudio.

Quito, el 14 de Mayo de 2003



Lic. Shinji TOTSUKA
Líder de la Misión de Estudio
JICA
Japón



Dr. Francisco ANDINO
Ministro
Ministerio de Salud Publica
República del Ecuador



Emb. Juan AULESTIA MORA
Director Ejecutivo
Instituto Ecuatoriano de Cooperación Internacional (INECI)
Ministerio de Relaciones Exteriores
República del Ecuador

Documento Adjunto

1. Contenido de los Equipos

La parte ecuatoriana acordó el contenido de los equipos propuestos por el Equipo de Estudio como muestra el Anexo 1. De acuerdo con el contenido de los equipos, ambas partes acordaron poner el nombre de este proyecto "Proyecto de Apoyo al Servicio Básico de Salud (en adelante se denominará "el Proyecto")".

El contenido definitivo de la donación de fondos de este Proyecto será decidido tras el análisis por el Gobierno del Japón en base a los resultados de este Estudio.

2. Instituciones Relevantes

2-1 Institución Responsable:

Ministerio de Salud Pública

2-2 Entes Ejecutores

- Dirección General de Salud

- Instituto Nacional de Higiene y Medicina Tropical "Leopoldo Izquieta Pérez" (INH).

3. Sistema de la Cooperación Financiera No Reembolsable del Japón

La parte ecuatoriana comprendió íntegramente el sistema de la Cooperación Financiera No Reembolsable del Japón, como muestra el Anexo 3 de la Minuta de Discusiones acordada y firmada en el 25 de Septiembre de 2002 durante el Estudio anterior. La parte Ecuatoriana prometió tomar las medidas necesarias descritas en el Anexo 4 de dicha Minuta, en caso de que se aplique la Cooperación Financiera No Reembolsable del Japón.

4. Medidas de Exoneración Tributaria

La parte Ecuatoriana prometió que una vez firmado el Canje de Notas, se encargará de impuestos nacionales que se impongan en relación a los productos y servicios ofrecidos por nacionales japoneses en base al contrato autorizado, de acuerdo con el contenido de la Canje de Notas, al mismo tiempo de eximir derechos aduaneros y otras cargas fiscales.

5. Cronograma

JICA preparará en inglés y español el Informe del Estudio basado en lo acordado y lo entregará a la parte Ecuatoriana alrededor del mes de agosto de 2003.

6. Otros Temas Discutidos

6-1 Distribución de los Equipos para Apoyar a Sub-Centros de Salud

En cuanto a los Equipos para Apoyar a Sub-Centros de Salud, la parte Ecuatoriana prometió distribuir bajo su responsabilidad cada uno de los ítems a sus correspondientes destinos, de acuerdo con el Anexo-2, y realizar capacitación técnica necesaria para su manejo al personal correspondiente.

6-2 Equipos para Administración de Existencias de Biológicos

A efectos de administrar existencias de vacunas en forma adecuada, la parte Ecuatoriana prometió distribuir los equipos bajo su responsabilidad a sus correspondientes destinos, de acuerdo con el Anexo-3 y realizar capacitación técnica necesaria para su manejo al personal correspondiente.

6-3 Equipos para Apoyar al INH

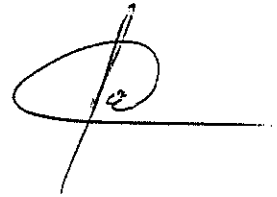
En cuanto a las obras mencionadas en el Anexo-4, relacionadas a los equipos para apoyar al INH, la parte Ecuatoriana prometió ejecutarlas oportunamente para que los trabajos correspondientes a la parte Japonesa puedan realizarse con mayor fluidez.

Anexo-1: Lista de Equipos

Anexo-2: Equipos para Apoyar a Sub-Centros de Salud y Sus Destinos

Anexo-3: Destinos de Los Equipos para Administrar Existencias de Biológicos

Anexo-4: Obras Correspondientes a la parte Ecuatoriana



Lista de Equipos

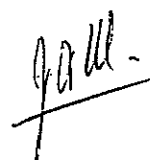
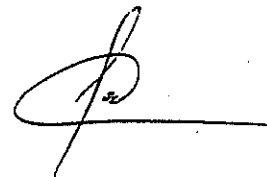
1. Equipos para Administración de Existencias de Biológicos (No.1)
2. Equipos para Apoyar a Sub-Centros de Salud (SCR) (25 items :del No.2 al No.26)
3. Equipos para Apoyar al INH (18 items :del No.27 al No.44)

	Inglés	Español	Ctd.
1	Computer Set	Computadora con impresora	37
2	Icelined Refrigerator and Icepack Freezer	Refrigerador congelador "ICELINED"	48
3	Voltage Stabilizer	Estabilizador de voltaje	48
4	Vaccine Carrier	Termo portavacunas	70
5	Thermometer, 3 per set	Termómetro, juego de 3 unidades	48
6	Stethoscope for Adult	Estetoscopio para adultos	75
7	Stethoscope for Infant	Estetoscopio pediátrico	67
8	Stethoscope for Neonatal	Estetoscopio para neonatal	67
9	Sphygmomanometer for Adult	Tensiometro para adultos	82
10	Sphygmomanometer for Infant	Tensiometro pediátrico	40
11	Scale for Adult	Balanza para adultos	24
12	Height Measure	Tallímetro	24
13	Scale for Infant	Balanza pediátrica	29
14	Dressing Set	Equipo de curaciones	75
15	Suture Set	Equipos de sutura	75
16	Delivery Set	Equipo de partos	30
17	Vaginal Speculum, medium and small	Espéculos vaginales medianos y pequeños	70
18	Resuscitator set	Equipo de Resucitación	39
19	Examination Bed for Infant	Mesa para examen pediátrico	22
20	Examination Bed for Adult	Mesa para examen general	20
21	Thermometer set	Termómetros	29
22	Kidney Tray, Large and small	Semilunas medianas, grandes y pequeñas	41
23	Trash Can with Cover and Pedal	Basurero a pedal y con tapa	65
24	Stand Lamp	Lámpara cuello de ganso	19
25	Autoclave	Autoclave	21
26	Diagnostic Kit	Equipo de diagnóstico completo	16

27	Automatic Ampoule Filling and Sealing Machine	Máquina Envasadora Automática de Ampollas	1
28	Vacuum Sealing Machine Upgrading Set	Componente para mejorar la Máquina Selladora al Vacío	1
29	Automatic Hand Washer	Lavamanos automático	8
30	Pass Box	Caja de Transferencia	8
31	Air Shower	Ducha de aire	5
32	Pellicon filter system	Concentrador /purificador magnética	2
33	Clean room unit	Unidad de Area Biolimpia	1
34	Automatic Vial Filling and Sealing Machine	Máquina Envasadora y Selladora Automática de Viales	1
35	UV Radiometer	Medidor de voltaje de lámparas ultra violeta	2
36	Air Sampler	Comprobador de aire	2
37	Air Particle Counter	Contador de Partículas en el aire	2
38	Micro Refrigerated Centrifuge	Microcentrifugadora Refrigerada	1
39	Microplate Reader	Lector de Microplacas	1
40	Microplate Washer	Lavadora de Microplacas	1
41	Inverted Microscope	Microscopio Invertido	1
42	Kjeldahl Nitrogen Digestion and Distillation unit	Unidad de Digestión y Destilación de Nitrógeno Kjeldahl	1
43	Electronic Analytical Balance	Balanza Analítica Electrónica	1
44	Large Capacity Refrigerated Centrifuge	Centrífuga Refrigerada de Gran Capacidad	1

Destinos de Los Equipos para Administrar Existencias de Biológicos

	Destino	CTD.
1	Ministerio de Salud Publica (Dirección PAI)	1
2	Banco Nacional de Vacunas	1
3	Banco Subsecretaría Region II del Guayas	1
4	Banco Subregional (Azuay y Tungurahua)	2
5	Banco Provincial (Todas las provincias)	22
6	Banco de 4 Areas de Salud (Provincia de Bolivar)	4
7	Banco de 6 Areas de Salud (Provincia de Chimborazo)	6
	Total	37



Obras Correspondientes a la parte Ecuatoriana

	Obra	CTD.
Area BCG en Planta 3	Tratamiento de Suelo Antipolovo	1 Conjunto
	Demolición y Recuperación del Muro para Introducir Equipos	1 Conjunto
	Introducción e Instalación de Equipos Biolimpios Cancel : 1 unidad Lavamanos Automático: 1 unidad	1 Conjunto
	Toma de Corriente Primaria	1 Conjunto
	Tubería de Gas Propano	1 Conjunto
	Area Llenado en Planta 2	Eliminación de Mampara y Mesas
Tratamiento de Suelo Antipolovo		1 Conjunto
Demolición y Recuperación del Muro para Introducir Equipos		1 Conjunto
Introducción e Instalación de Equipos Biolimpios Ducha de Aire: 1 unidad Cancel : 1 unidad		1 Conjunto
Toma de Corriente Primaria		1 Conjunto
Otros	Introducción e Instalación de Equipos Biolimpios Ducha de Aire: 4 unidades Cancel : 6 unidades Lavamanos Automático: 7 unidades	1 Conjunto

Appendix 5. References

No.	Title	Issue / Type	Year
1	Ecuador: Basic Country Health Profiles, Summaries 1999	Pan American Health Organization (PAHO) http://www.paho.org	
2	PROFILE OF THE HEALTH SERVICES SYSTEM OF ECUADOR	2 nd edition Pan American Health Organization (PAHO)	2001
3	CIA The World Fact Book 2001 Country Profile	CIA/ Document	2001
4	Present situation of social economics in Ecuador	4 th Edition APIC/Book	1993
5	Situation of each country and / or Region (Ecuador)	Ministry of Foreign Affairs http://www.mofa.go.jp	2002
6	ESTRUCTURA DE SERVICIOS E INDICADORES BASICOS DE SALUD PUBLICA DEL ECUADOR	Ministry of Health in Ecuador / Book	1999
7	SISTEMA REGIONALIZADO DE SERVICIOS DE SALUD Y CAPACIDAD RESOLUTIVA DE LAS UNIDADES DE SALUD	Ministry of Health in Ecuador / Book	1999
8	MANUAL DE ORGANIZACION Y FUNCIONAMIENTO DE LAS AREAS DE SALUD	Ministry of Health in Ecuador / Book	2000
9	Plan Nacional de Salud 2000-2005	Ministry of Health in Ecuador / Book	1999
10	Record Official Development Assistance(ODA) [Ecuador]	Ministry of Foreign Affairs http://www.mofa.go.jp/mofaj/gaiko/oda	2002
11	ESTRUCTURA ORGANICA DEL INSTITUTO NACIONAL DEL HIGIENE Y MEDICINA TROPICAL "LEOPOLDO IZQUIETA PEREZ"	Registro Oficial No. 670	1995
12	Regulation for Immunization (Revision)	Congress in Republic of Ecuador (record) / Paper	2001
13	Ministerio de Salud Publica Presupuesto 2001-2002	Ministry of Health / Document	—
14	Cold chain system	Ministry of Health / QA	—
15	Immunization schedule and Vaccination Coverage	Ministry of Health / QA	—
16	PROYECTO DE SALUD Y DESARROLLO LOCAL	Ministry of Health / Electronic data	—
17	ESTADO ACTUAL DE EQUIPOS MEDICOS	Ministry of Health / Result of Inventory (document)	2003

Appendix 6. Equipment Installment Layout for INH

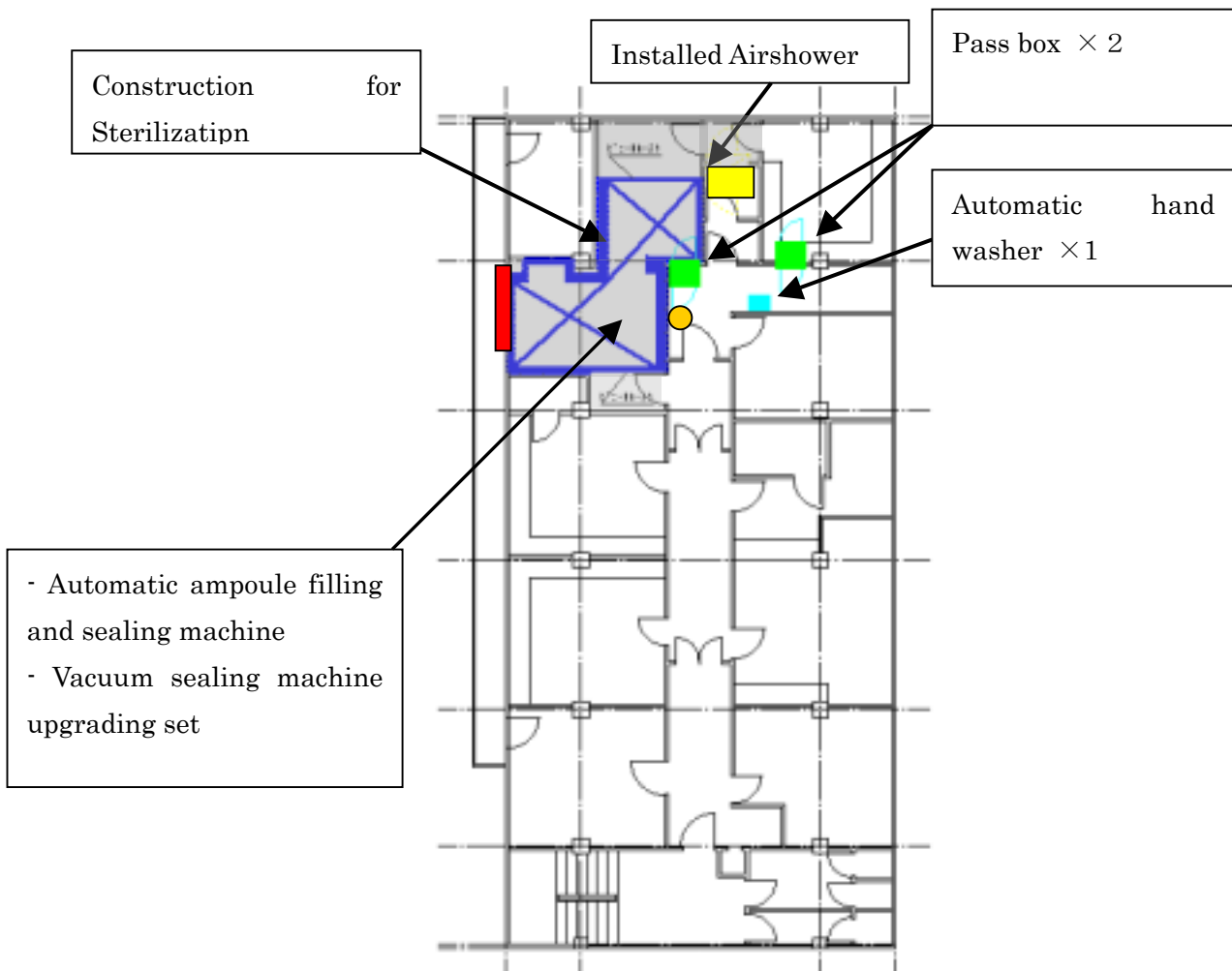
1. Table for equipment

Equipment	3Floor	2Floor		1Floor		Basement	Total	Installment	
	BCG	T	Mixing	D	Internal Management	TT		Japan	Ecuador
Amoule filling and Sealing	1						1	○	
Amoule Vaccume Sealing Set	1						1	○	
Automatic Handwasher	1	2		2	1	2	8		○
Pass Box	2	1	1	2		2	8		○
Air Shower		1	1	2		1	5		○
Pelicon Filter System				1		1	2	○	
Vaccine Sterilization Unit	(1)		1				1	○	
Vial Filling and Sealing			1				1	○	

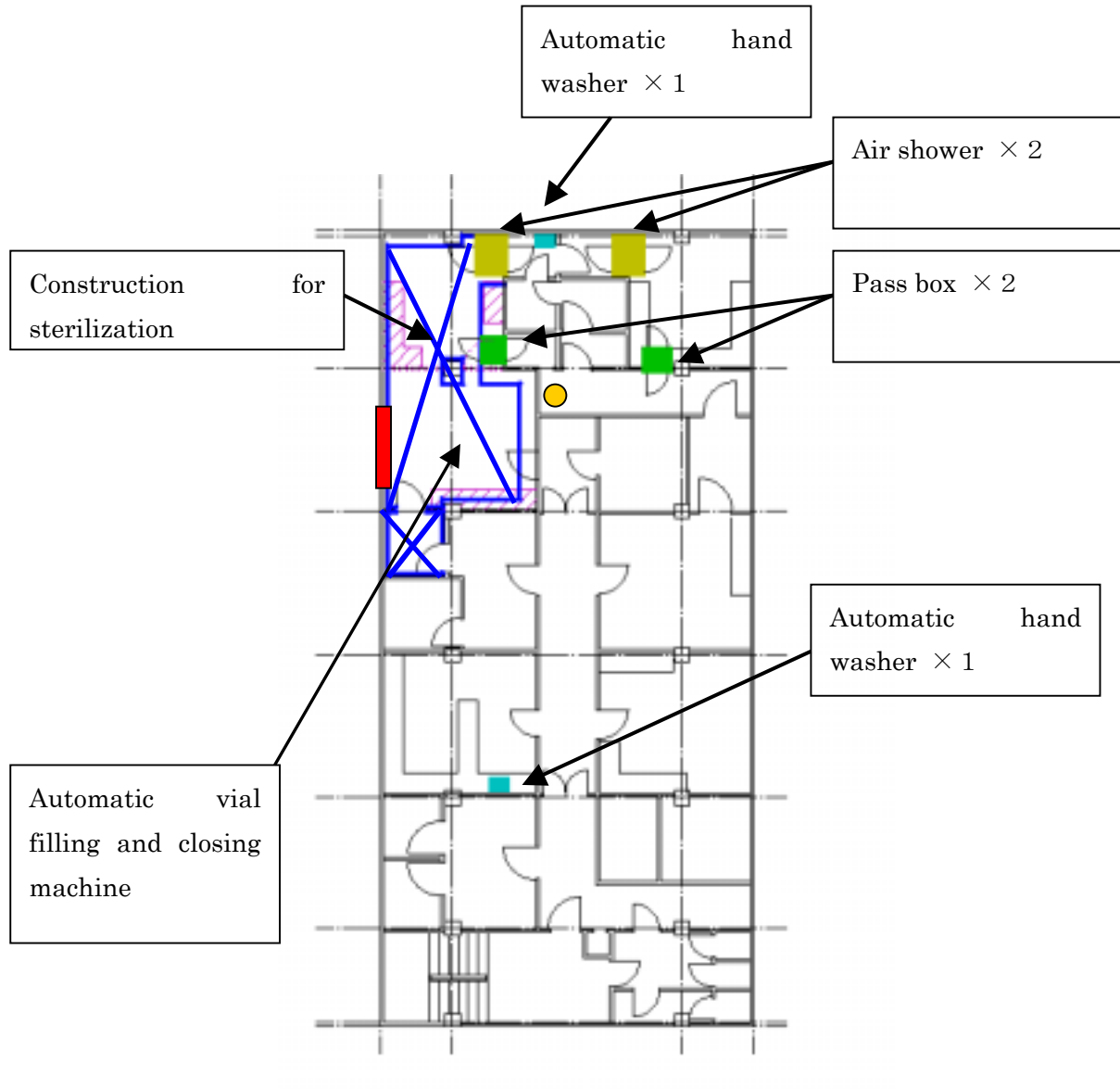
※ Sterilization Unit which will be installed on the 2nd Floor includes the unit for BCG.

2. Installment layout plan for the major equipment

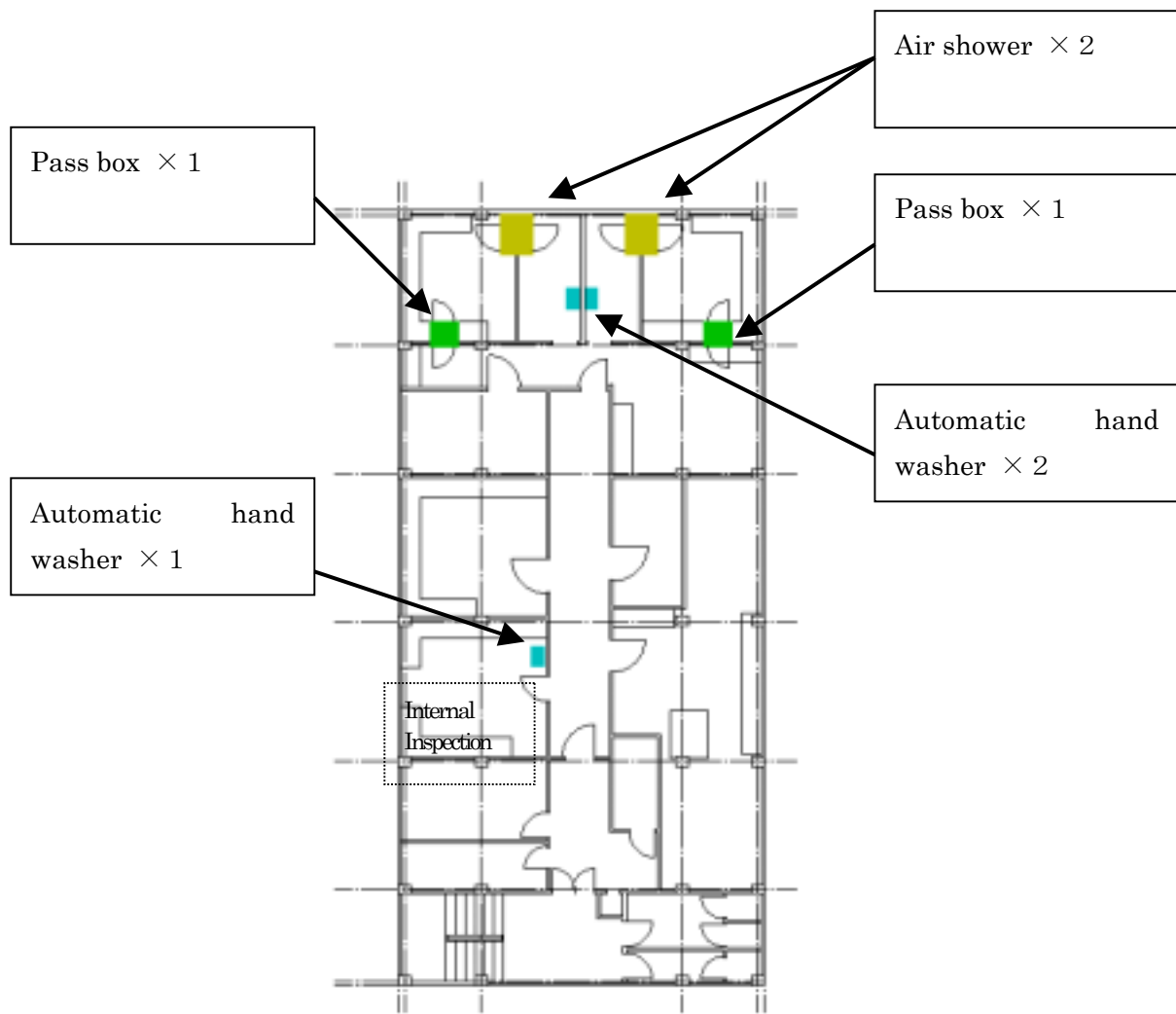
3rd Floor BCG



2nd Floor Pertussis / Mixing Room



1st Floor Diphtheria • Internal Inspection



Basement Floor, Tetanus Toxiod

