STUDY REPORT
ON
THE PROJECT
FOR
MEASLES CONTROL
IN
THE REPUBLIC OF THE PHILIPPINES

February 2003

Japan International Cooperation Agency

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Preface

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a study on the Project for Measles Control and entrusted the Japan International Cooperation Agency (JICA) to conduct the study with the assistance of the Japan International Cooperation System (JICS).

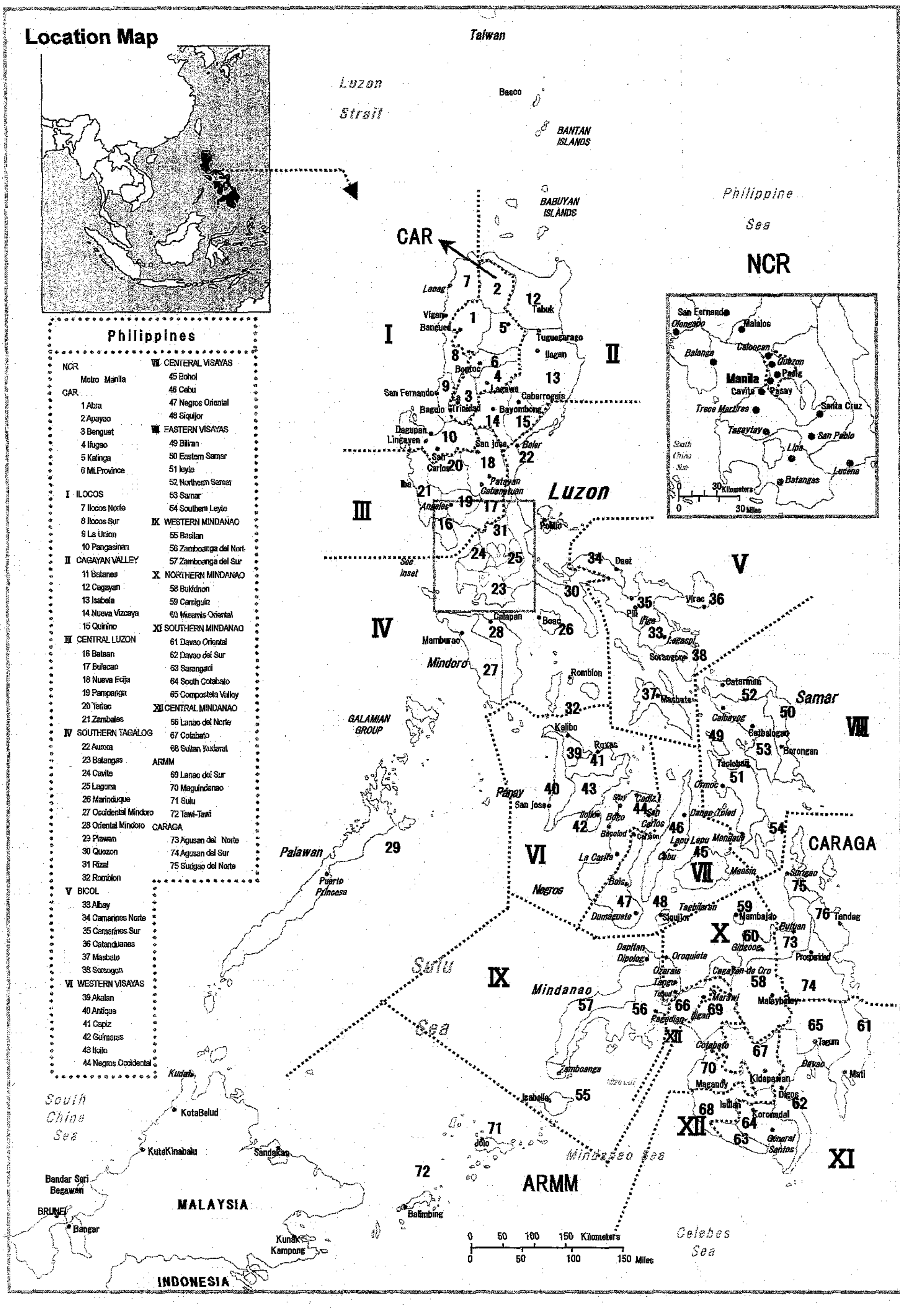
JICA sent a study team to the Republic of the Philippines from January 26 to February 2, 2003.

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

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

February 2003

Takao KAWAKAMI
President
Japan International Cooperation Agency


Location Map
Philippines
NCR
Metro Manila
CAR
1 Abra
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3 Benguet
4 Ifugao
5 Kalinga
6 Mt.Province
I ILOCOS
7 Ilocos Norte
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9 La Union
10 Pangasinan
II CAGAYAN VALLEY
11 Batanes
12 Cagayan
13 Isabela
14 Nueva Vizcaya
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III CENTRAL LUZON
16 Bataan
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IV SOUTHERN TAGALOG
22 Aurora
23 Batangas
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57 Zamboanga del Sur
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60 Misamis Oriental
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64 South Cotabato
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BABUYAN ISLANDS
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Balanga
Quezon
Manila
Pasig
Cavite
Pasay
Trece Martires
Santa Cruz
Tagaytay
San Pablo
South China Sea
Lipa
Lucena
Batangas
30 Kilometers
30 Miles
Luzon
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III
IV
V
VI
VII
VIII
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X
XI
XII
CARAGA
ARMM
Laoag
Vigan
Bangued
Tabuk
Tuguegarao
Ilagan
Bontoc
Lagawe
San Fernando
Cabarroguis
Baguio
La Trinidad
Bayombong
Dagupan
Lingayen
San Jose
Baler
San Carlos
Palayan
Cabanatuan
Iba
Angeles
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Pili
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Roxas
Tacloban
Ormoc
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San Jose
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Danao
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La Carlota
Maasin
Palawan
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Negros
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Tagbilaran
Mambajao
Tandag
Dumaguete
Siquijor
Butuan
Gingoog
Dapitan
Dipolog
Oroquieta
Ozamis
Prosperidad
Cagayan de Oro
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Mindanao
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Malaybalay
Pagadian
Iligan
Tagum
Sea
Cotabato
Davao
Zamboanga
Kidapawan
Mati
Magandy
Digos
Isabela
Isulan
Koronadal
General Santos
Jolo
Mindanao Sea
Kudat
KotaBelud
KutaKinabalu
Sandakan
South China Sea
Bandar Seri Begawan
BRUNEI
Bangar
MALAYSIA
Kunak Kampong
Bafimbing
INDONESIA
0 50 100 150 Kilometers
0 50 100 150 Miles
Celebes Sea

Abbreviations

ADB	Asia Development Bank
BHN	Basic Human Needs
BHS	Barangay Health Station
DOT	Directly Observed Treatment
EPI	Expanded Program on Immunization
IMF	International Monetary Fund
KfW	Kreditanstalt fur Wiederaufbau
NCDPC	National Center for Diseases Prevention and Control
PAHO	Pan American Health Organization
PhP	Philippine Peso
QOL	Quality Of Life
RITM	Research Institute of Tropical Medicine
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

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1. Member List of the Study Team
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Chapter 1 Background of the Project

1-1 National Strategic Plan for Measles Elimination in the Philippines

The Department of Health of the Republic of the Philippines drafted a 10-year plan in 1998 to eliminate measles (to cut the number of measles patients infected by endemic viruses down to zero by 2008). The gist of the plan consists of four strategic pillars as listed below:

① Catch-up Campaign (to provide nationwide vaccination to about 28 million children ages 9 months to less 14 years and by reducing the number of susceptible patients among children due to weak immune against measles, reduce the total number of patients and lower the mortality rate of the disease. Implemented in September 1998.)

② Follow-up Campaign (to provide nationwide vaccination 5 years after the Catch-up Campaign to further reduce the number of measles patients among children, aiming at the elimination by 2008.)

③ Improvement and maintenance of the routine vaccination rate

④ Establishment of a surveillance system

The Catch-up Campaign was implemented as planned. The surveillance system is being established after 1998, receiving technical cooperation from WHO and other organizations. Research Institute of Tropical Medicine (RITM) carried out serologic tests for 2,513 (78%) samples out of the total 3,216 cases reported in 2000, and 2,199 (88% of the samples) were confirmed as measles. The Department of Health plans to extend the surveillance system all over the country, recognizing that the establishment and reinforcement of such system is essential for the accurate understanding of the disease circulation in the country.

With regards to the outstanding issue of improvement of the routine vaccination rate, the Department of Health aims at achieving the vaccination rate of 95% immediately within 2003 by enhancing outreach activities (in which health workers go out and fine unvaccinated patients to immunize them, rather than waiting for them to voluntarily comes to the place for vaccination). Further, the Department of Health plans to increase the number of doses of the routine vaccination to two, once the goal is achieved, after the Follow-up Campaign in 2004. According to the plan, the two-dose routine vaccination will be carried out limited to high-risk areas (namely, densely-populated urban areas, areas with the routine vaccination rate of 85% or less and areas where an epidemic of measles has been reported) in 2005, which shall be followed by the second vaccination to preschoolers beginning by 2006. At the same time, legislation of the plan into law will be carried forward since close cooperation with other departments including the Department of Education will be required for the implementation.

Since only 85% of infants who received measles vaccine are said to develop the immunity, the remaining 15% will be accumulated as susceptible patients to measles every year (about 1.6 million births were registered in 2001). From the fact that 90% of the measles patients reported came from densely-populated areas around Manila in 2001, it is suspected that unvaccinated infants concentrate in the areas. As the population in urban areas increases, susceptible patients accumulate there, making unvaccinated infants more likely to contact measles patients, resulting in repeated outbreaks of the disease and keeping the virus alive. In the same logic, susceptible patients joining preschools or elementary schools pose a fear of the outbreak. In order to cut back the number of susceptible patients and improve the routine vaccination rate at

the same time, the implementation of the Follow-up Campaign is urgently required by all means.

1-2 Background of the request

The vaccination rate at the Catch-up Campaign in September 1998 was reported as 96.09%. As a result, the number of infected patients in 1999 (2,945 cases) was almost cut by half of that in 1998 (4,699 cases). However, due to the drop of the vaccination rate in the following years, the infection has increased to 7,547 cases in 2001. Originally, the Follow-up Campaign was planned to be conducted in 2003, five years after the Catch-up Campaign, but it was postponed to 2004 due to lack of fund caused by the abrupt need for the mass immunization campaign against polio across the country in 2002.

Under these circumstances, the Government of the Philippines submitted an official request to the government of Japan to extend grant aid for the supply of the materials and equipment necessary to implement the Follow-up Campaign. The materials and equipment include measles vaccines, auto-disable syringes, disposable syringes and safety boxes.

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

2-1-1 Overall Goal and Project Objectives

(1) Overall Goal

Lowering the infant mortality rate is raised as one of the health indices to be improved as part of the National Objectives for Health (1999-2004), a development plan in the health sector. Also, the plan aims at control of diseases such as schistosomiasis, malaria, filariasis, Hansen's disease, canine madness, controllable diseases by vaccination (measles, tetanus, diphtheria and pertussis), vitamin A deficiency and iodine deficiency, each of which poses a problem to public health.

Among others, the Department of Health is actively engaged in measles prevention by drafting a 10-year plan known as "the Philippines Measles Elimination Campaign" in 1998, which aims at reducing the number of the infected through endemic viruses to zero by 2008. This project directly contributes to the aforementioned national objectives by decreasing measles patients and lowering the mortality rate.

(2) Project Objectives

The project targets children ages 9 months to less than 8 years all over the country , to decrease the number of the accumulated susceptible among children since the Catch-up Campaign in 1998, thereby preventing outbreak of measles and lowering the number of patients and deaths by the disease.

2-1-2 Outline of the Project

This project provides materials and equipment including measles vaccines and syringes indispensable for the Follow-up Campaign planned for February 2004. The project will reduce the number of susceptible patients and prevent outbreak of the disease. Also, along with the phased introduction of the two-dose system in routine vaccination after the campaign, it is expected to contribute to the accomplishment of the long-term goal of the Philippines, the elimination of measles.

2-2 Basic Design of the Requested Japanese Assistance

2-2-1 Design Policy

This project is aimed at greatly reducing the number of the infected and the dead by measles by drastically reducing the number of susceptible patients among children. In the long run, it is aimed at contributing to the plan of the Philippines government to eliminate the disease by providing funds to procure measles vaccine, syringes and other equipment necessary for the nationwide vaccination campaign.

This plan was formulated based on the following policies.

2-2-1-1 Policy on the implementation time

In the Philippines, a presidential election is scheduled for May 2004 and hence nationwide electoral campaigns will start in March next year. As the Follow-up Campaign would never succeed without the cooperation of the local residents, it is desirable to avoid the period near the election as much as possible. However, considering the time required for the production and transportation of the materials and equipment, February 2004 is considered the most suitable to carry out the campaign.

2-2-1-2 Policy on the target age

As for the Follow-up Campaign, PAHO, based on their experiences, recommends targeting a group of age, to which 85-90% of the overall measles patients belong. Among 7,360 cases reported in 2001, children aged 7 years or younger (i.e. under 8 years) constituted more than 85% (85.4%) of the total measles patients. Therefore, children under 8 years of age are targeted for the campaign, in line with the advice of PAHO.

2-2-1-3 Policy on grades and types of the materials and equipment

WHO carries out examination to select manufacturers, whose products satisfy their established quality standards and who are able to mass-produce low-priced vaccines, as suppliers to U.N. agencies such as UNICEF. Vaccine manufacturers of this campaign will also be selected based on the policy of WHO. With regards to auto-disable syringes, select products that satisfy the specification set forth by WHO.

2-2-2 Basic Plan

2-2-2-1 Overall Plan

1) Target Areas

Now that 5 years have passed since the Catch-up Campaign was conducted in 1998, the routine vaccination rate is on the decline and the fear of measles outbreak triggered by the increased susceptible patients among children is looming. Therefore, the Follow-up Campaign this time will cover the whole regions of the country.

2) Implementation Schedule

The project implementation is scheduled for February 2004 (for two weeks in urban areas and one month in the other areas).

3) Target Population

Children ages 9 months to less than 8 years are targeted in the campaign. The target population is calculated from the 1995 census-based Medium Assumption for 2004 (82,663,561). Parameters to be applied to the calculation were the same as those applied to the immunization campaign against polio in 2002, which is a similar project with this one. Specifically, the target population is calculated by projecting percentage of each of the age groups from 1 to 8 years at 3% of the total population, and the age group of 9 to 11 months at 0.75%. As a result, the target population was estimated at 17,979,325.

4) The materials and equipment to be procured

The following four consumable items are the most important for the campaign.

- Measles Vaccine:

Measles vaccine to be procured under this project is freeze-dried and attenuated. Each vial will contain 10 doses (i.e. vaccination for 10 people). Vaccines should be procured from the manufacturers whose products have passed WHO's pre-qualification.

- Auto-Disable syringe:

In order to prevent secondary infection of HIV/AIDS or hepatitis viruses through reuse of syringes, non-reusable syringes, whose plungers will be fixed after single use will be procured. The capacity of each syringe is restricted to 0.5ml, a dose for one individual. The syringes are required to meet the quality standard of WHO.

- Disposable syringe:

Since measles vaccine is freeze-dried, it needs to be dissolved in the attached solution prior to vaccination. Disposable syringes will be procured to dissolve freeze-dried vaccine. As one vial of measles vaccine requires 5ml of solution, the capacity of a syringe should be 5ml.

- Safety Box:

A safety box is a paper container to be used to hold used syringes. Medical staff who give vaccinations are required to put used syringes in a safety box immediately after each vaccination. Full boxes will be collected and disposed appropriately as prescribed in the guidelines provided by the Department of Health. The capacity of a safety box is specified to 5 liters (to accommodate 100 syringes) and required to pass tests for needle penetration resistance and watertightness and to meet other qualities required by the WHO standards.

All the other costs associated with the campaign, such as costs for consumables such as absorbent cottons for sterilization and alcohol, daily allowances for volunteers and other expenses, costs for car fuel and printings of the register cards and the guidelines, should be borne by the Philippines.

Cold-chain equipment to be used to keep vaccines cold (such as refrigeration rooms, freezers, refrigerators, vaccine carriers and others) to the final destination will be borrowed from public organizations affiliated to the Department of Health and private corporations, in addition to the existing equipment.

Cold-chain equipment was installed in some regions under aid from WB/ADB in 2001. And there is a plan that KfW provides more in August 2003. Therefore, provision of cold-chain equipment is not requested under this project.

5) Quantities to be procured

Quantities of the materials and equipment to be supplied were calculated in the following methods:

- Measles Vaccine:

The wastage factor (based on the actual survey) in the Catch-up Campaign in 1998 was 1.19. Vaccination was conducted at fixed posts (vaccinate at fixed places) at that time. Since outreach activities, in which health workers are dispatched to the residences of patients, are also planned this time, the wastage factor is set slightly higher at 1.25 and the reserve stock factor is set at 1.1. The quantity for procurement is obtained using the following formula:

Quantity to procure (dose) = target population x wastage factor x reserve stock coefficient

For the calculation of the vaccine quantity, losses due to inefficiency of cold chain equipment, damages or losses during transportation, unused vaccines after dissolving and other unforeseeable events should be considered. The ratio of such losses (on an assumption basis) to the number of vaccine doses to cover the target population is called a wastage factor. The reserve stock coefficient is the ratio of stock reservation to correspond to such unforeseeable events as incorrect assumption of population and population influx from neighboring areas.

- Auto-disable syringe:

Quantity to procure = target population x wastage factor x reserve stock coefficient

Since it is the first introduction of auto-disable syringes in this country, it is considered that some losses will occur until medical staff becomes used to the handling. Accordingly, the wastage factor of 1.1 and the reserve stock factor of 1.1 are assumed.

- Disposable syringe:

Quantity to procure = no. of vaccine to procure ÷ 10 x reserve stock coefficient

One vial of vaccine will provide vaccination for 10 people (10 doses). Assuming that one disposable syringe is required for one vial, the reserve stock coefficient of 1.1 is applied. Since the medical staff is used to the handling of disposable syringes, no wastage factor needs to be considered.

- Safety Box:

Quantity to procure = (Auto-Disable syringe + Disposable syringe) ÷ 100 x reserve stock coefficient

One safety box is containable for 100 syringes. The reserve stock coefficient of 1.1 is assumed and no wastage factor needs to be considered.

Refer to Table 1 for the quantities of the materials and equipment to be supplied. Due to massive procurement of low-value products, the numbers are rounded up to the unit of 1,000. Since each vial contains 10 doses of vaccines, the numbers are rounded up to the unit of 1,000 vials.

Table 1. Calculation of quantities to be procured

	Item	Target population/base no.	Wastage factor	Reserve stock coefficient	Required quantity	Quantity to procure (adjusted to the unit of 1,000)
1	Measles Vaccine	17,979,325 (= target population)	1.25	1.1	24,721,571	24,730,000
2	Auto-Disable syringe	17,979,325 (= target population)	1.1	1.1	21,754,983	21,755,000
3	Disposable syringe	2,472,157 (= no. of vaccines required)	—	1.1	2,719,373	2,720,000
4	Safety Box	244,744 (= no. of syringes required÷100)	—	1.1	269,218	270,000

2-2-2-2 Equipment Plan

Table 2. Equipment Plan

No.	Name	Contents (specification, size etc.) and the purpose	Quantity
1	Measles Vaccine	Freeze-dried attenuated measles virus. Infectivity of 1,000TCID50/dose or more, 10 doses/vial. Build up antibodies to measles by vaccination to children from 9 months to under 8 years old.	24,730,000
2	Auto-Disable syringe	Capacity of 0.5 ml, 23G 25mm, in conformity to the specification of WHO (E8/DS.1) To be used to the injection of Measles Vaccine. The syringe will be locked after use in order to prevent the reuse.	21,755,000
3	Disposable syringe	Capacity of 5 ml, 21G 38mm, sterilized, contained in separate package. To be used for dissolving freeze-dried Measles Vaccine.	2,720,000
4	Safety Box	Capacity of 5 liters, paper product, in conformity to the specification of WHO (E10/IC.1 or IC.2). Used to carry and keep used syringes for disposal.	270,000

2-2-3 Implementation Plan

2-2-3-1 Implementation Policy

1) Difficulties will accompany the procurement process of massive vaccines; especially the process in the form of grant aid calls for prudence in taking action. Full understanding of the production status and quick responses to considerable happenings such as changes of manufacturers after signing on the contract and delay in delivery will be required.
2) WHO provides pre-qualification to manufacturers of various vaccines to be used for EPI. Vaccines of the qualified manufacturers will be procured for this project, too. As to measles vaccine, Research Institute for Microbial Diseases in Osaka University (BIKEN) is the only qualified institution in Japan, but since it is impossible for the single institute to correspond to the volume supply, vaccines will be procured through third country.
3) The materials and equipment is procured ex bonded warehouse (or container yard/container freight station) at a seaport (or airport) in the Philippines. Domestic transportation will not be covered by grant aid.
4) In consideration of a period of preparation for the campaign, it is preferable to set the delivery time at the end of December 2003 at Manila port.

2-2-3-2 Implementation Conditions

As a result of inquiries to 6 pre-qualified manufacturers, only Serum Institute of India responded that they can unconditionally support the supply, while some others said they can accommodate only partially (refer to Table 3). In order to secure such a huge supply volume, it is desirable to directly order manufacturers one or two years in advance. However, due to the restriction on the assistance in the form of grant aid, the vaccines need to be procured within a limited lead time and by competitive tender. Also, it is not unusual for contractors to cancel the product supply just before the delivery time. Additionally, it is required to explain to contractors and make them accept that there is a possibility that the implementation of the campaign is postponed or the scale of the campaign is cut back.

Table 3. Prospect of measles vaccine provision by each manufacturer

Manufacturer	State of Origin	Response
Aventis Pasteur	France/ Canada	Impossible to cover provision of all the required vaccines. Although they can supply partially, it is difficult to clarify the specific quantity. The annual production is about 35 million doses.
Biofarma	Indonesia	Impossible to cover provision of all the required vaccines. Although they can supply partially, it is difficult to clarify the specific quantity. The annual production is about 37 million doses.
Chiron Vaccines	Italy	Declined to estimate
Research Institute for Microbial Diseases, Osaka University	Japan	Production capacity is quite limited. Additionally, they require order in advance. Impossible to correspond to the request.
Serum Institute of India	India	Able to provide the whole quantity. The annual production is 400 million doses
SmithKline Beecham	Belgium	Suspended production

2-2-3-3 Scope of Works

Table 4. Scope of Works

Contents	Japan	The Philippines
Procurement of the materials and equipment	○	—
Transportation inside the country	—	○
Installation	—	—

2-2-3-4 Consultant Supervision

① In order to cope with considerable problems such as disqualification for official approval, sudden requirement of production line reexamination and delay in delivery, close cooperation and smooth exchange of information among manufacturers, trading firms and consultants are more strongly required than in the case of other supply projects. For this purpose, a qualified trading firm, which has a branch or a liaison office in the country where the manufacture plant of vaccine is located, is assigned to

strengthen control over the production and shipment processes. Additionally, after signing on the contract, the consultants will be dispatched to manufacturers at appropriate times to coordinate production and shipment plans in details.

② The consultants will be dispatched to the delivery site to carry out acceptance inspection of the delivered goods.

2-2-3-5 Quality Control Plan

① Issuance of a batch certificate, a certificate of analysis and a certificate of release is mandatory for every production lot.

② It is a prerequisite for production factories of auto-disable syringes and disposable syringes to acquire ISO9001 and 9002. Especially, samples from the first production lot are obliged to go through tests stipulated in the specification.

2-2-3-6 Procurement Plan

As shown in Table 5, procurement via third countries is considered for all the products.

Table 5. Suppliers of the materials and equipment

	Items	Suppliers			Remarks
		Philip pines	Japan	Third Country	
1	Measles Vaccine		○	○	Not available in the Philippines. Only one company in Japan produces the product but the production capacity is quite limited.
2	Auto-Disable syringe			○	Not available in the Philippines nor Japan. To be procured via third country.
3	Disposable syringe	○	○	○	Only one company produces the product in the Philippines. Since the price in Japan is expensive, procure inexpensive ones via third country.
4	Safety Box			○	Not available in the Philippines nor Japan. To be procured via third country.

Transportation plan of each item of the materials and equipment is as shown in the table below. The shipment is ex bonded warehouse (or container yard/container freight station) at a seaport (or airport). Customs clearance fees and domestic transportation fees should be borne by the Philippines.

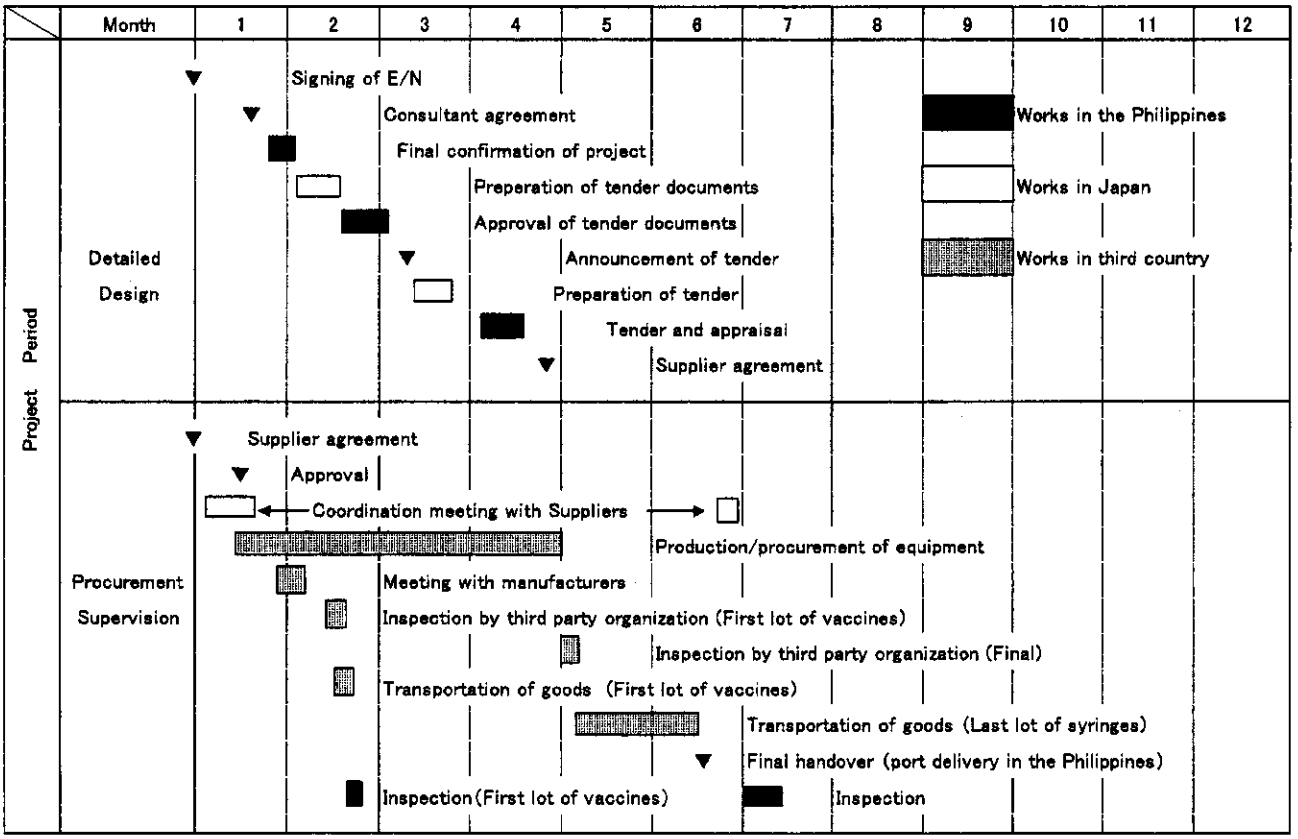
Table 6. Transportation Plan

	Items	Port of loading	Means of transport	Port of unloading (delivery to:)
1	Measles Vaccine	Japan/Third Country	Air	Manila airport

2	Auto-Disable syringe	Third Country	Sea	Manila port
3	Disposable syringe	Japan/Philippines/ Third Country	Sea and land	Manila port/designated warehouse by the Department of Health
4	Safety Box	Third Country	Sea	Manila port

2-2-3-7 Implementation Schedule

Project Period (from E/N to Handover) : 10.5 Months
E/N to Contractor agreement : 4.0 Months
Delivery (from Contractor agreement to Handover) : 6.5 Months



2-3 Obligations of Recipient Country

① According to the agreements related to grant aid, the recipient country shall fulfill the following obligations and shall be responsible for expenses required in the process.

- To conclude a Banking Arrangement (B/A) and accordingly issue an Authorization to Pay (A/P) and bear the expenses incurred in the process.
- To promptly complete customs clearance procedures, speedily carry out delivered goods from the bonded warehouse, and bear the expenses incurred in the process.
- To take measures to exempt from customs the goods and services to be supplied under this project.
- To ensure that value-added tax of goods to be procured locally will be borne by the Department of Health.
- To provide convenience for Japanese staff to be engaged in services for procurement so that they can enter and stay in the Philippines without difficulties.
- To allot budget and secure personnel required for the operation, maintenance and administration of the project.

② The recipient shall be responsible for expenses for the operation of the nationwide campaign, such as costs for personnel training, public relations and evaluations as well as consumables and fixtures required except for procurements covered by grant aid.

③ The recipient shall be responsible for transportation costs of the materials and equipment to be procured from the port to each region.

④ The recipient shall select the best way for collection, storage and disposal of used syringes and burden the cost for the purpose.

⑤ The recipient shall carry out appropriate monitoring of adverse events following immunization and bear the associated cost.

⑥ The recipient shall immediately achieve the goal of 95% of the routine vaccination rate as a way to enhance the effect of this project on the campaign. Also, after the implementation of this campaign, increase the number of doses in the routine vaccination to two or carry out additional campaigns so that all children receive the second vaccination. The recipient shall keep making effort to eliminate measles.

2-4 Project Operation Plan

Structure of the health and medical system from the central government to the health station in each region is as shown in Figure 1. According to the figure, the top to the Provincial/City Health Office fall within the jurisdiction of the Department of Health and the Municipal Health Office to the bottom fall within the jurisdiction of the local government, reflecting the decentralization movement promoted in the Republic of the Philippines.

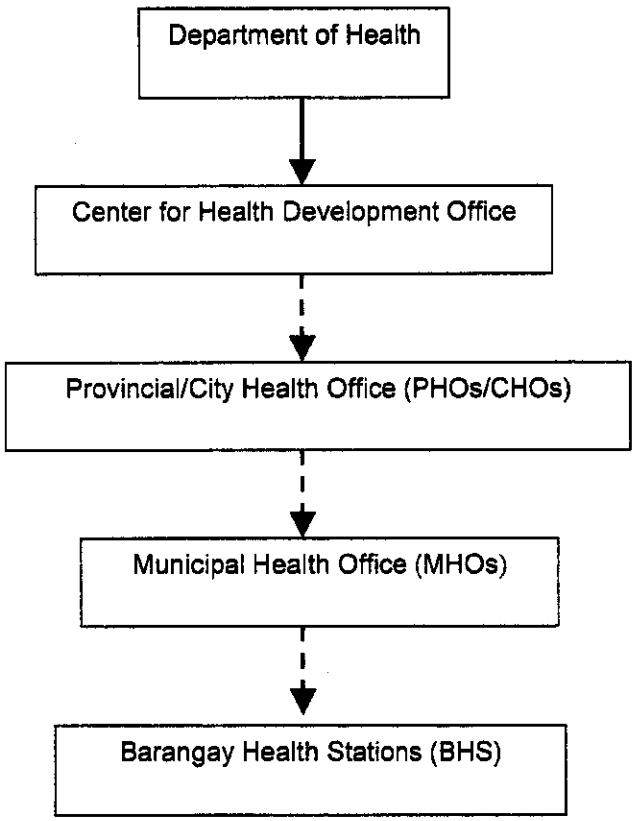


Figure 1. Structure of the health and medical system in the Philippines

In the implementation of this campaign, the Department of Health is responsible for the planning, enlightenment of activities, personnel training in the local governments (includes monitoring and evaluation) and transportation of the materials and equipment to each region.

Measles vaccines will be delivered in the order from the storage of the Department, regions, province, municipalities and finally to the vaccination site (Barangay). WB/ADB KfW is advancing installment of cold chains from the region level down to the site level (to be completed in August 2003). Also, in the times of the campaign in 1998 and the polio campaign in 2002, refrigerators were borrowed from private corporations. Based on these experiences, cooperation from private corporations or affiliated organizations of the Department of Health is expectable. The vaccines will be kept in refrigerators to the storage of municipalities and then, carried in a vaccine carrier filled with ice packs during transportation to each vaccination site and for storage at the site.

During the Catch-up Campaign in 1998, vaccination was carried out only at fixed posts. But it is assumed that a huge number of children who fail to come to the site were left unvaccinated. In this campaign, outreach activities to dispatch a team composed of one medical personnel (either doctor, nurse or midwife), one record keeper (midwife or Barangay Health Worker*) and a guide (Barangay Health Worker or volunteer) to the residences of patients will also be implemented. Additionally, one supervisor (either doctor or nurse) will be designated for every 8 teams in urban areas and every 4 teams in the other areas. Supervisors' roles include training of team members, requesting cooperation from the region, supervision during vaccination, confirmation of safety boxes storage condition, reporting vaccination progress and dealing with side reaction after vaccination (work with the nearest hospitals).

Note:) * Barangay Health Worker is directly in charge of health control of local residents at BHS, the lowest level of the health and medical system in the country.

This campaign takes place for two weeks in urban areas and one month in the other areas.

For this campaign, UNICEF allocates 900,000 pesos to cover the operation cost including expenses to hold meetings and to print materials. WHO also plans to donate an unknown amount of money for this campaign.

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effect

3-1-1 Direct Effects

1) Measles vaccination to be implemented at a time all over the country greatly contributes to prevent outbreak of the disease and lower its infection and mortality rate. This campaign aims at protecting 18 million children nationwide against the risk of contracting the disease. In the last few years, measles patients have dramatically increased in the Philippines due to such factors as children left unvaccinated at the Catch-up Campaign in 1998 or on later occasions, susceptible children who failed to build up antibodies after vaccination, and accumulation of children whose antibody levels dropped and became susceptible again. This project will completely cover children ages 9 months to less than 8 years in the country, including ones who have already received the vaccination in the past. Accordingly, dramatic reduction of susceptible patients and stop of measles circulation is highly expected.

2) The safety of vaccination by the use of auto-disable syringes and safety boxes will be improved. This is the first case to use auto-disable syringes for vaccination in the country. Disposable syringes of 2ml used in the 1998 campaign required changing of needles after putting vaccine liquid in syringes. On the other hand, auto-disable syringes do not require change of needles and thus improves the safety of injection. The use of safety boxes assures proper handling of used syringes, which contributes to prevention of possible infection of HIV/AIDS, hepatitis B, hepatitis C and other infectious diseases.

3-1-2 Indirect Effects

1) The measles vaccination to be implemented simultaneously nationwide this time combined with a phased introduction of two-dose vaccination starting from 2005 is expected to pave the way for the elimination of measles in the Philippines.

2) Auto-disable syringes and safety boxes to be supplied under this project not only improve safety of the vaccination activities but also establish an example of safe disposal of used syringes. At the same time, it will deepen understanding of "safety injection" and "safe disposal of used syringes" among personnel engaged in EPI activities across the country.

3-2 Recommendations

1) Appropriate implementation of this project leads to drastic decrease in the number of measles patients for sure. However, if the routine vaccination rate remains low, it would again lead to accumulation of susceptible patients and quite likely to bring about an outbreak of the disease in the near future. It is especially true in the case of densely populated areas like Manila.

It is said that at least 90% of the routine vaccination rate is essential to control measles and 95% or higher to eliminate the disease. Since the country aims at eliminating measles, it is inevitable to steadily raise the rate to as high as 95% and maintain the level.

In the Philippines, the government transfers an authority to carry out routine vaccination to local governments as part of public health services. Therefore, depending on the difference in the hygiene conditions, importance of a vaccination project differs among local governments. Additionally, excessive workload of the midwives working in the fields, causing a drop in the level of the services, and limited access to the services in remote areas are posing a concern.

In order to improve the routine vaccination rate to 95% or over in such circumstances, the Department of Health needs to keep proposing a concrete and viable plan to local governments. As long as the country holds up measles elimination by 2008, strong support from the central government is obligatory.

2) Whether the second vaccination is to be carried out in the form of campaign or as part of the routine vaccination should be decided based on clear understanding of the situation in each country. For example in Europe, the US and Latin America, where the routine vaccination rates are very high, implementing two-doses in mandated routine vaccination for preschoolers is considered effective. However, in countries where the routine vaccination rate is low or it is difficult to provide health care services pervasively due to geographic conditions of having many remote areas, repeated implementation of campaign is considered effective. In the Philippines, implementation of two-dose routine vaccination is considered, but it is important to first evaluate the effectiveness of the initial routine vaccination rate.

However, in a different perspective, consideration of two-dose routine vaccination is a great progress for the country to be able to earmark budget periodically for funding the procurement of vaccines and syringes for the second vaccination. As long as the country depends on a campaign, they need to find a donor every year, which will again likely delay the schedule depending on the budget execution period of the donor country. All things considered, it would be appropriate for the country to allot budget for two-dose routine vaccination as the original plan and make proper judgment whether or not to resort to the campaign, depending on the situation of the disease spread and shift in the routine vaccination rate.

3) The number of newborn infants is accurately registered at Barangay Health Station or at local health centers, however, statistics used for vaccine preparation do not originate from the actual figures at the local level. Gross population in each community is estimated based on a national census and population by age is estimated based on the population ratio, conventionally used in the country. It is quite difficult to clarify the accurate number of unregistered population based on a national census. Especially, the actual population in densely populated areas can be much higher than the estimate. Also, the population ratio used to project population by age has not been reviewed for a long time. Since it was confirmed that the population estimate does not reflect the real situation, it casts doubt on the reliability of vaccination rates at routine vaccination and campaigns reported by the Department of Health. Accordingly, overhaul of the statistic figures are desired for the appropriate operation and evaluation of the vaccination project in the future.

4) Used syringes are categorized as infectious wastes. Among several methods applied to dispose the wastes appropriately, incineration is widely conducted in developing countries because it is possible to reduce the size and sterilize all at once at a low cost, albeit it is not necessarily the best way. In the guidelines for the campaign in 1998, incineration was recommended as the way to dispose used syringes. Nevertheless, by the enactment of Clean Air Act of the Philippines in 1999, incineration of medical wastes represented by used syringes became illegal in the country.

Under the campaign this time, it is recommended to bury used syringes under ground after autoclave or supersonic treatment at adequately resourced hospitals or at medical facilities in large cities such as Manila, Cebu and Davao. However, since such treatments are not available in most regions, it is expected that used syringes will be buried underground without sterilization. Unless they are buried at an appropriate depth and measures are taken to keep the place off limits, there is a danger that needles are exposed above ground when the soil is washed out by rain or they are carried away by people, which results in secondary infection via infectious pathogenic bacterial attached to the needles. Given the fact that needles exceeding 20 million will be used for the campaign and a large portion of them are likely to be buried without sterilization, a special measure should be taken to enable incineration, especially in remote regions of the country.

Appendices

1. Member List of the Study Team

(1) Mr. Osamu NAKAGAKI	Leader Resident Representative/ JICA Philippines Office
(2) Ms. Tomoko ONDA	Procurement Planner Japan International Cooperation System
(3) Mr. Kazuhiro KUROSAWA	Equipment Planner Japan International Cooperation System

2. Study Schedule

Date			Activities	Place
Jan 26	Sun	PM	Narita→Manila	
Jan 27	Mon	AM	Courtesy call to Embassy of Japan Courtesy call and discussion/Department of Health	Embassy of Japan Department of Health
		PM	Site Survey :Central warehouse for Vaccine Courtesy call and Site Survey: Center for Health Development office /Region 4 *Courtesy call to JICA*	Quezon City Quezon City JICA Office
Jan 28	Tue	AM	Site Survey :Kabite Province Health Center Site Survey :City Health Office /Kabite Province	Kabite Province Tagaytay City
		PM	Site Survey :Municipal Health Office /Kabite Province Site Survey :Barangay Health Station /Kabite Province	Tanza Municipal Barangay Amaza Ⅲ
Jan 29	Wed	AM	Discussion with NCDPC･WHO	WHO
		PM	Same as above	WHO
Jan 30	Thu	AM	Discussion with NCDPC･WHO	WHO
		PM	Same as above	WHO
Jan 31	Fri	AM	Discussion with NCDPC	Department of Health
		PM	Signing M/D Discussion with NCDPC Report to JICA	Department of Health Department of Health JICA Office
Feb 1	Sat	AM	Market Research	Manila
		PM	Data analysis	
Feb 2	Sun	AM	Data analysis	Manila
		PM	Manila→Narita	

3. List of Parties Concerned in the Recipient Country

1. Embassy of Japan

Mr. Kuniaki MIYAKE	Second Secretary

2. JICA Philippines Office

Mr. Osamu NAKAGAKI	Resident Representative
Mr. Motofumi KOHARA	Deputy Resident Representative
Mr. Ikuo TAKIZAWA	Assistant Resident Representative

3. WHO

Dr. E. B. Doberstyn	Director, Combating Communicable Diseases
Dr. Jean-Marc Olivé	WHO Representative
Dr. Jeffrey W. McFarland	Medical Officer, EPI
Dr. Hiroko Tanaka	Technical Officer, EPI
Mr. Bernald G. Bergola	Technical Officer

4. Department of Health

Dr. Antonio S. Lopez	Undersecretary of Health, Office of the Secretary
Dr. Myrna C. Cabotaje	Manager, National Center for Disease Prevention and Control
Dr. Joyce U. Ducusin	Medical Specialist Ⅳ, NCDPC
Dr. Geraldine Anne Cruz-Crimen	EPI staff, NCDPC
Ms. Luzviminda C. Garcia	Supervising Health Program Officer, NCDPC
Dr. Juanita A. Basilio	EPI staff, NCDPC
Ms. Renedios V. S. Paulino	Manager, Bureau of International Health Cooperation
Ms. Cecille V. G. de Luna	Staff, BIHC
Mr. David Masiado Jr.	Staff, BIHC
Mr. Leydo Gamiao RN	Staff, National Epidemiology Center
Dr. Vito G. Rogue Jr.	Staff, NEC
Dr. Ma-Nerissa N. Dominguez	Staff, Center for Health Development
Dr. Agueda T. Sunga	Staff, CHD

5. Center for Health Development /Southern Tagalog, Region 4

Dr. Rosario H. Famaran	Regional Director
Dr. Nimrod L. Villanueva	EPI staff
Ms. Blesila Z. Piñon	Nurse

6. Provincial Health Office /Kabite Province

Dr. Ma. Vilma V. Diez	Epidemiologist, Provincial Health Officer
Ms. Liza L. Madlangbayan	EPI staff
Ms. Marissa J. Galicia	Maternity Nurse
Dr. Ruth S. Pun Vilan	Doctor, Tanza Municipal Health Office

4. Minutes of Discussions

MINUTES OF DISCUSSIONS
ON THE STUDY
ON THE PROJECT FOR ELIMINATION OF MEASLES
IN THE REPUBLIC OF THE PHILIPPINES

In response to a request from the Government of the Republic of the Philippines (hereinafter referred to as "the Philippines"), the Government of Japan decided to conduct a Study on the Project for Elimination of Measles (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Philippines the Study Team (hereinafter referred to as "the Team"), which is headed by Osamu Nakagaki, Resident Representative, JICA Philippine Office, and is scheduled to stay in the country from January 26 to February 2.

The Team held discussions with the officials concerned of the Government of the Philippines and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Study Report.

Manila, January 31, 2003

Osamu NAKAGAKI
Leader
Study Team
Japan International Cooperation Agency

Manuel M. Dayrit, MD, MSc
Secretary of Health
Department of Health
Republic of the Philippines

Witnessed by:

Jean-Marc Olivé, MD, MPH
WHO Representative in the Philippines
World Health Organization

ATTACHMENT

1. Objective of the Project

The objective of the Project is to give the second major step towards measles elimination by preventing major measles outbreak expected to occur due to the accumulation of susceptible population since the previous catch up campaign conducted in 1998.

2. Project sites

The Project sites are the whole of the Philippines.

3. Responsible and Implementing Agency (Philippine side)

3-1. The responsible agency is the Department of Health.

3-2. The implementing agency is the Vaccine Preventable Diseases, National Center for Diseases Prevention and Control.

4. Items requested by the Government of the Philippines

After discussions with the Team, the items described in the table below were finally requested by the Philippine side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

	Item	Quantity
1	Measles Vaccine, 10doses/vial	2,473,000 vials
2	Auto-disable Syringe	21,755,000 pieces
3	Mixing Syringe	2,720,000 pieces
4	Safety Box	270,000 pieces

5. Japan's Grant Aid Scheme

5-1. The Philippine side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex -1.

5-2. The Philippine side will take the necessary measures, as described in Annex-2, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the Study

6-1. The consultants will proceed to further studies in the Philippines until February 2.

6-2. Based on the Minutes of Discussions and technical examination of the study results, JICA will complete the final report and send it to the Government of the Philippines by May 2003 provided that the Government of Japan approves the report.

7. Other relevant issues

7-1. The Philippine side agreed on the following points:

(1) To exempt Japanese nationals engaged in the Project from all duties and related fiscal charges which may be imposed in the Philippines with respect to the import of the products and services supplied under the verified contract.

(2) To refund the Value-Added Tax (VAT) imposed in the Philippines on Japanese nationals with respect to the payment carried out for and the income accruing from the supply of the products and services under the verified contract.

(3) The Philippine side shall be responsible for the prompt liquidation or settlement of such fiscal levies, duties, taxes and other similar charges in connection with (1) and (2) mentioned above. The Department of Health shall be responsible for the necessary budget allocation in this matter.

7-2. The Philippine side understands that in case the approval of Investment Coordination Committee (ICC) by NEDA is necessary for the Project, Department of Health will take necessary measures timely to prepare and deliver the requirements for ICC.

7-3. The Philippine side proposed to cover the children from 9 month old to below 8 years old as the targeted age group, but the appropriateness of the request will be assessed in Japan. The Philippine side understands that the target age group to be covered by the Project will be determined after consultation with JICA and parties concerned in Japan.

7-4. The Philippine side shall take actions as follows;

(1) To utilize appropriate disposal methods for used syringes and needles according to DOH waste disposal plan,

(2) To allocate the necessary budget and personnel for the follow up campaign, and

(3) To properly distribute and utilize of the goods procured under the grant.

7-5. Both sides understand that the Philippine side shall implement the measles follow up campaign under close coordination with WHO and request WHO to give necessary assistance on the following issues;

(1) Production of training materials and guidelines,

(2) Monitoring and Evaluation of the campaign, and

(3) Investigation of adverse events following immunization, if necessary.

7-6. The Philippine side shall continue their effort to achieve the goal of measles elimination by the year 2008 by the following;

(1) To improve routine immunization coverage of measles to be 95% or above by 2004 and maintain this high level of population immunity, and

(2) To introduce second dose immunization in routine vaccination schedule of measles.

7-7. Giving enough thought to the publicity of Japan's Official Development Assistance (ODA), the Philippine side shall take appropriate actions to inform public of the contribution by Japanese Government for the Follow-up Campaign.

Annex-1

Japan's Grant Aid Scheme

1. Grant Aid Procedure

(1) Japan's Grant Aid Program is executed through the following procedures.

Application: (Request made by a recipient country)
Study: (Study conducted by JICA)
Appraisal & Approval: (Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation:
(Notes exchanged between the Governments of Japan and the recipient country)

(2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study, using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Study (hereafter referred to as "the study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

1) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of the agencies concerned of the recipient country, for the Project's implementation.

2) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

3) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

4) Preparation of a basic design of the Project

5) Estimation of cost of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take the measures necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firms(s) based on proposals submitted by interested forms. The firm(s) selected carry(ies) out a Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

(2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

(3) "The period of Grant Aid" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

(4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(6) Undertaking required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as following;

1) to secure land necessary for the sites of the Project and to clear and reclaim the land prior to commencement of the construction,

2) to provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,

3) to secure buildings prior to the procurement in case the installation of the equipment,

4) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,

5) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,

6) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work,

7) "Proper Use"

The recipient country is required to maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant Aid and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

9) Banking Arrangements (B/A)

(a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government to the recipient country or its designated authority under the Verified Contracts.

(b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

10) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

Annex-2

Major undertakings to be taken by each government

NO	Items	To be covered by the Grant Aid	To be covered by the Recipient side
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	•	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the ports and/or storage facilities of disembarkation to the project sites		•
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		•
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the pfoducts and services under the verified contract		•
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		•
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		•

5. References

(1) National Objectives for Health, Philippines 1999-2004, DOH

(2) Health Sector Reform Agenda, Philippines 1999-2004, DOH

(3) Expanded Program on Immunization Strategic Plan Year 2003-2007, DOH

(4) Guidelines for the Philippine Measles Follow-Up Campaign 2004, DOH

(5) Philippine Measles Elimination Campaign, A Guide for Field Managers, DOH

(6) Philippine Measles Elimination Campaign, Guide for Field Implementers, DOH

(7) Plan of Action for Control of Measles, Phase 1: Catch Up Campaign, Republic of the Philippines

(8) 1998 Philippine Measles Elimination Campaign (PMEC) "Ligtas Tigdas Campaign" Accomplishment Report, DOH

(9) Guidelines for the Iwas Tigdas 2002, DOH

(10) Final Cumulative Report on Polio-Free Maintenance Immunization Campaign Rounds 1 and 2, DOH

(11) 2001 Annual Report, Center for Health Development in Southern Tagalog.