


Ministry of Health
The Republic of Nicaragua


STUDY REPORT
ON
THE PROJECT FOR GRANT AID FOR CHILD HEALTH,
PROMOTING CHILD HEALTH
IN
THE REPUBLIC OF NICARAGUA

MARCH 1999

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PREFACE

In response to a request from the Government of the Republic of Nicaragua, the Government of Japan decided to conduct a study on the Project for Grant Aid for Child Health, Promoting Child Health and entrusted the Japan International Cooperation Agency (JICA) to conduct the study with the assistance of the Japan International Cooperation System (JICS).

JICA sent to Nicaragua a study team from January 12 to January 31, 1999.

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 Nicaragua for their close cooperation extended to the team.

March 1999



Kimio Fujita

President

Japan International Cooperation Agency

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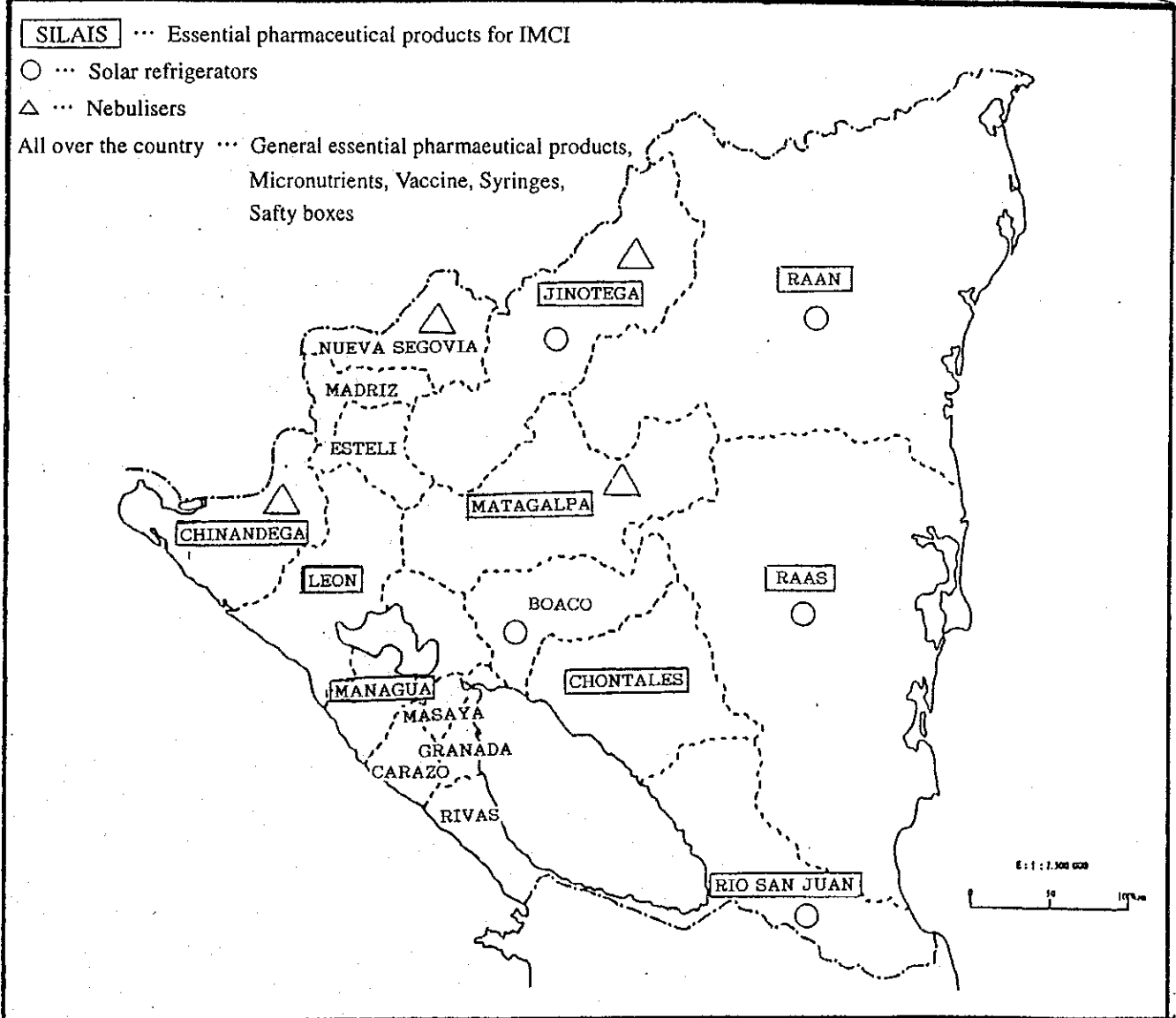
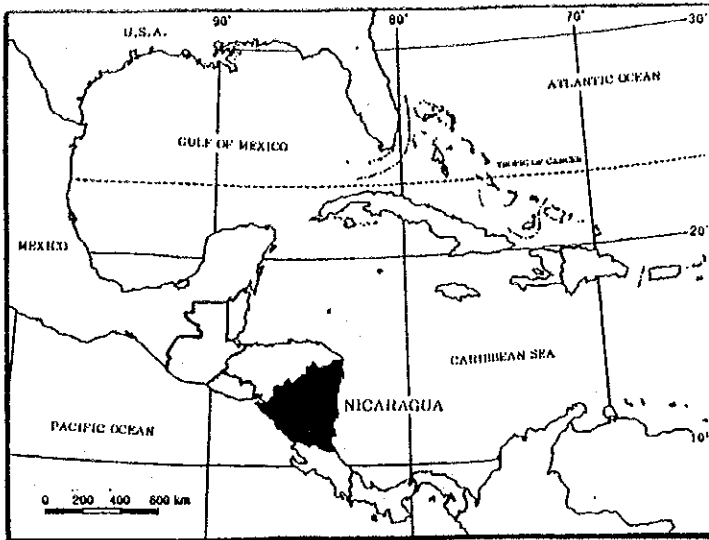
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Location Map / Perspective

Abbreviations

| | |
|--------|--|
| EPI | Expanded Programme on Immunization |
| IMCI | Integrated Management of Childhood Illness |
| MMR | Measles Mumps and Rubella Combined Vaccine |
| PAHO | Pan American Health Organization |
| RAAN | Región Autónoma Atlántico Norte |
| RAAS | Región Autónoma Atlántico Sur |
| SILAIS | Sistemas Locales de Atención Integral a la Salud |
| UNICEF | United Nations Children's Fund |
| USAID | United States Agency for International Development |

Chapter 1 Background of the Project

The economic state of the Republic of Nicaragua (hereafter referred to as "Nicaragua") has been recovering steadily since the end of the civil war of 1979 to 1989. However Nicaragua is still the poorest country in Central America, with a per capita GNP of US\$380. According to data from the Pan American Health Organization (PAHO), approximately 50% of the entire population of Nicaragua belongs to the poor and needy class, and 19% belong to the poorest class. The difference between urban and local areas is particularly large.

With regard to the health and medical situation in Nicaragua, infant mortality, at 44/1,000, is the highest in Central America. The main causes of death are infectious diseases and disorders related to pregnancy and childbirth.

Under the above-mentioned circumstances, the government of Nicaragua formulated the "Integrated Management of Childhood Illness (IMCI)" programme to improve medical services by preventing diarrhoea and pneumonia in infants, supplementing micronutrients, improving nutrition, implementing vaccination and training medical staff. At present, the government of Nicaragua vaccinates infants in order to prevent measles, poliomyelitis, tetanus, diphtheria, whooping cough and tuberculosis. In 1998, the government started vaccinations for the measles, mumps and rubella combined vaccine (MMR). However because of the severe financial situation, they have to depend on the aid of other donors for implementation of nation-wide vaccination extending to regional communities.

Thus, the government of Nicaragua has made plans to procure the vaccines necessary for implementation of a nation-wide vaccination programme extending to regional communities, cold chain equipment and essential pharmaceutical products and micronutrients, as part of the consolidation of the medical environment of local communities, and has requested grant aid cooperation from the Government of Japan.

Chapter 2 Contents of the Project

2-1 Objectives of the Project

The objectives of this project are to prevent diseases, provide proper timely medical services and lower infant mortality rates.

To this purpose, vaccination must be promoted, the symptoms of pneumonia, diarrhoea and fever must be correctly diagnosed and treated, and malnutrition and otolaryngological infectious diseases must be tackled more effectively. In order to implement proper treatment, there is a need for basic pharmaceutical products, vaccines and cold chain systems, and nebulisers to treat cases of respiratory disease. This project aims to prepare and procure the above-mentioned equipment.

In October 1998, Hurricane Mitch attacked Nicaragua, causing serious damage. Since then, cases of infectious disease have increased because of the poor hygienic environment, and the stock of pharmaceutical products has almost run out. Therefore, the procurement of urgently-needed pharmaceutical products is also included in this Project.

2-2 Basic Concept of the Project

(1) General essential pharmaceutical products

The Ministry of Health of Nicaragua formulated a list of 408 types of essential pharmaceutical products in accordance with the 309 generic-name drug efficacy ingredients based on the 21 drug efficacy groups with reference to the WHO list of essential pharmaceutical products and the list of international generic names, from which a list of 348 types of most frequently used basic pharmaceutical products was formulated.

Of the basic pharmaceutical products, this Project shall procure eighteen types of pharmaceutical products mainly consisting of antibiotic agents, the necessity for which has increased because of the increased demand after the damage caused by Hurricane Mitch. These pharmaceutical products shall be made available throughout Nicaragua, the amount being equivalent to six months' demand as shown in Table 2-1 in accordance with the population of each Sistemas Locales de Atencion Integral a la Salud (SILAIS).

(2) Essential pharmaceutical products for IMCI

The areas to be covered by this Project are nine SILAISs including agricultural areas, areas in which projects by other support agents were completed by 1999, and areas with a higher infant mortality rate than the national average of 53/1,000. Infants below the age of five in these areas account for 73% of all the infants in Nicaragua (695,323/950,924).

This project has selected seventeen types of medical products from the list of basic pharmaceutical products, including both penicillin and non-penicillin-type antibiotics, parasiticides, bronchodilators, antipyretic analgesic agents, oral rehydration salt, transfusions, premature birth depressors and pulmonary growth accelerators, to be used in the treatment of infantile diseases. Among these pharmaceutical products, the premature birth depressor (ritrodine chloride) is not included in the WHO list of essential pharmaceutical products, but is included in the Nicaragua list, and its use has been approved. This drug is an approved pharmaceutical product in Japan and is manufactured and sold on the market.

The amount of pharmaceutical products to be procured shall be equivalent to one year's supply calculated on the basis of the standard prescription dosage by the Ministry of Health of Nicaragua and the number of onset cases in the nine Project areas. (See Table 2-2.)

Table 2-1 Details of general essential pharmaceutical products to be distributed to each SILAIS

| | Unit | Total | Chinandega | Leon | Matagalpa | Nueva Segovia | RAAN | RAAS | Esteli | Jinotega | |
|----|--|---------|------------|---------|-----------|---------------|--------|---------|---------|----------|--------|
| | Ratio of population (%) | 100% | 8% | 8% | 11% | 3% | 4% | 4% | 6% | 2% | |
| 1 | Procaine benzylpenicillin | phial | 1,600,000 | 128,000 | 128,000 | 176,000 | 48,000 | 64,000 | 64,000 | 96,000 | 32,000 |
| 2 | Benzathine benzylpenicillin | phial | 120,000 | 9,600 | 9,600 | 13,200 | 3,600 | 4,800 | 4,800 | 7,200 | 2,400 |
| 3 | Cloxacillin | bottle | 35,000 | 2,800 | 2,800 | 3,850 | 1,050 | 1,400 | 1,400 | 2,100 | 700 |
| 4 | Erythromycin | bottle | 25,000 | 2,000 | 2,000 | 2,750 | 750 | 1,000 | 1,000 | 1,500 | 500 |
| 5 | Doxycycline | capsule | 485,000 | 38,800 | 38,800 | 53,350 | 14,550 | 19,400 | 19,400 | 29,100 | 9,700 |
| 6 | Sulfamethoxazole + trimethoprim (tablet) | tablet | 2,600,000 | 208,000 | 208,000 | 286,000 | 78,000 | 104,000 | 104,000 | 156,000 | 52,000 |
| 7 | Sulfamethoxazole + trimethoprim (solution) | bottle | 150,000 | 12,000 | 12,000 | 16,500 | 4,500 | 6,000 | 6,000 | 9,000 | 3,000 |
| 8 | Benzoate + salicy | tube | 320,000 | 25,600 | 25,600 | 35,200 | 9,600 | 12,800 | 12,800 | 19,200 | 6,400 |
| 9 | Chloroquine | tablet | 1,600,000 | 128,000 | 128,000 | 176,000 | 48,000 | 64,000 | 64,000 | 96,000 | 32,000 |
| 10 | Mebendazole | tablet | 596,500 | 42,920 | 42,920 | 59,015 | 16,095 | 21,460 | 21,460 | 32,190 | 10,730 |
| 11 | Salbutamol | bottle | 120,000 | 9,600 | 9,600 | 13,200 | 3,600 | 4,800 | 4,800 | 7,200 | 2,400 |
| 12 | Lactated ringer's solution | bottle | 110,000 | 8,800 | 8,800 | 12,100 | 3,300 | 4,400 | 4,400 | 6,600 | 2,200 |
| 13 | Sodium chloride | bottle | 40,000 | 3,200 | 3,200 | 4,400 | 1,200 | 1,600 | 1,600 | 2,400 | 800 |
| 14 | Water for injection | ample | 1,000,000 | 80,000 | 80,000 | 110,000 | 30,000 | 40,000 | 40,000 | 60,000 | 20,000 |
| 15 | Oral rehydration salts (ORS) | sachet | 650,000 | 52,000 | 52,000 | 71,500 | 19,500 | 26,000 | 26,000 | 39,000 | 13,000 |
| 16 | Tetracycline | tube | 300,000 | 24,000 | 24,000 | 33,000 | 9,000 | 12,000 | 12,000 | 18,000 | 6,000 |
| 17 | Paracetamol (for injection) | bottle | 197,000 | 15,760 | 15,760 | 21,670 | 5,910 | 7,880 | 7,880 | 11,820 | 3,940 |
| 18 | Paracetamol (tablet) | tablet | 1,000,000 | 80,000 | 80,000 | 110,000 | 30,000 | 40,000 | 40,000 | 60,000 | 20,000 |

| | Unit | Rivas | Madrid | Managua | Rio San Juan | Granada | Mesaya | Boaco | Cerazo | Chontales | |
|----|--|---------|--------|---------|--------------|---------|---------|---------|--------|-----------|---------|
| | Ratio of population (%) | 3% | 2% | 25% | 1% | 4% | 5% | 3% | 4% | 7% | |
| 1 | Procaine benzylpenicillin | phial | 48,000 | 32,000 | 400,000 | 16,000 | 64,000 | 80,000 | 48,000 | 64,000 | 112,000 |
| 2 | Benzathine benzylpenicillin | phial | 3,600 | 2,400 | 30,000 | 1,200 | 4,800 | 6,000 | 3,600 | 4,800 | 8,400 |
| 3 | Cloxacillin | bottle | 1,050 | 700 | 8,750 | 350 | 1,400 | 1,750 | 1,050 | 1,400 | 2,450 |
| 4 | Erythromycin | bottle | 750 | 500 | 6,250 | 250 | 1,000 | 1,250 | 750 | 1,000 | 1,750 |
| 5 | Doxycycline | capsule | 14,550 | 9,700 | 121,250 | 4,850 | 19,400 | 24,250 | 14,550 | 19,400 | 33,950 |
| 6 | Sulfamethoxazole + trimethoprim (tablet) | tablet | 78,000 | 52,000 | 650,000 | 26,000 | 104,000 | 130,000 | 78,000 | 104,000 | 182,000 |
| 7 | Sulfamethoxazole + trimethoprim (solution) | bottle | 4,500 | 3,000 | 37,500 | 1,500 | 6,000 | 7,500 | 4,500 | 6,000 | 10,500 |
| 8 | Benzoate + salicy | tube | 9,600 | 6,400 | 80,000 | 3,200 | 12,800 | 16,000 | 9,600 | 12,800 | 22,400 |
| 9 | Chloroquine | tablet | 48,000 | 32,000 | 400,000 | 16,000 | 64,000 | 80,000 | 48,000 | 64,000 | 112,000 |
| 10 | Mebendazole | tablet | 16,095 | 10,730 | 134,125 | 5,365 | 21,460 | 26,825 | 16,095 | 21,460 | 37,555 |
| 11 | Salbutamol | bottle | 3,600 | 2,400 | 30,000 | 1,200 | 4,800 | 6,000 | 3,600 | 4,800 | 8,400 |
| 12 | Lactated ringer's solution | bottle | 3,300 | 2,200 | 27,500 | 1,100 | 4,400 | 5,500 | 3,300 | 4,400 | 7,700 |
| 13 | Sodium chloride | bottle | 1,200 | 800 | 10,000 | 400 | 1,600 | 2,000 | 1,200 | 1,600 | 2,800 |
| 14 | Water for injection | ample | 30,000 | 20,000 | 250,000 | 10,000 | 40,000 | 50,000 | 30,000 | 40,000 | 70,000 |
| 15 | Oral rehydration salts (ORS) | sachet | 19,500 | 13,000 | 162,500 | 6,500 | 26,000 | 32,500 | 19,500 | 26,000 | 45,500 |
| 16 | Tetracycline | tube | 9,000 | 6,000 | 75,000 | 3,000 | 12,000 | 15,000 | 9,000 | 12,000 | 21,000 |
| 17 | Paracetamol (for injection) | bottle | 5,910 | 3,940 | 49,250 | 1,970 | 7,880 | 9,850 | 5,910 | 7,880 | 13,790 |
| 18 | Paracetamol (tablet) | tablet | 30,000 | 20,000 | 250,000 | 10,000 | 40,000 | 50,000 | 30,000 | 40,000 | 70,000 |

Table 2-2 Details of essential pharmaceutical products for IMCI to be distributed to each SILAIS

| | | Unit | Total | Chinandeg a | Leon | Matagalpa | RAAN | RAAS | Jinotega | Managua | Rio San Juan | Chontales | Amount to be stored at CIPS |
|----|--|--------|-----------|----------------|---------|-----------|---------|---------|----------|---------|-----------------|-----------|-----------------------------------|
| 1 | Benzylpenicillin | phial | 251,700 | 5,418 | 977 | 19,614 | 85,000 | 14,000 | 20,000 | 3,003 | 760 | 19,000 | 83,928 |
| 2 | Procaine benzylpenicillin | phial | 1,531,600 | 115,656 | 119,320 | 134,412 | 71,000 | 33,000 | 32,000 | 440,958 | 15,700 | 59,000 | 510,554 |
| 3 | Benzathine benzylpenicillin | phial | 287,400 | 17,436 | 25,344 | 20,072 | 13,500 | 4,800 | 5,200 | 89,932 | 3,300 | 12,000 | 95,816 |
| 4 | Amoxicillin | bottle | 16,900 | 456 | 2,759 | 864 | 2,000 | 140 | 800 | 3,444 | 0 | 800 | 5,637 |
| 5 | Chloramphenicol | phial | 20,200 | 120 | 480 | 4,000 | 5,300 | 0 | 750 | 0 | 0 | 2,800 | 6,750 |
| 6 | Gentamicin | ample | 102,700 | 6,882 | 4,242 | 13,000 | 21,000 | 1,300 | 4,300 | 8,344 | 200 | 9,200 | 34,252 |
| 7 | Sulfamethoxazole + trimethoprim (tablet) | tablet | 408,102 | 31,296 | 37,492 | 47,000 | 17,000 | 10,000 | 12,500 | 97,347 | 6,400 | 13,000 | 136,067 |
| 8 | Sulfamethoxazole + trimethoprim (solution) | bottle | 3,856,700 | 255,192 | 393,250 | 314,568 | 142,000 | 277,000 | 275,000 | 617,520 | 81,600 | 215,000 | 1,285,570 |
| 9 | Nystatin | bottle | 64,500 | 2,256 | 4,248 | 5,000 | 2,600 | 1,300 | 1,000 | 24,516 | 540 | 1,500 | 21,540 |
| 10 | Albendazole | bottle | 165,700 | 11,328 | 13,416 | 14,000 | 10,000 | 2,200 | 4,880 | 50,292 | 1,800 | 2,700 | 55,284 |
| 11 | Oral rehydration salt | sachet | 2,524,500 | 248,292 | 155,352 | 340,000 | 270,000 | 57,000 | 130,000 | 335,346 | 88,000 | 59,000 | 841,510 |
| 12 | Salbutamol (syrup) | bottle | 271,500 | 27,264 | 32,688 | 27,600 | 8,000 | 6,000 | 10,000 | 53,736 | 2,700 | 13,000 | 90,512 |
| 13 | Salbutamol (inhalant) | bottle | 10,800 | 144 | 1,565 | 1,300 | 200 | 90 | 330 | 2,784 | 300 | 470 | 3,617 |
| 14 | Lactated ringer's solution | bottle | 79,100 | 5,688 | 2,268 | 11,000 | 9,000 | 0 | 7,300 | 5,226 | 1,700 | 10,500 | 26,418 |
| 15 | Ritodrine | ample | 4,700 | 408 | 294 | 550 | 800 | 300 | 300 | 120 | 50 | 300 | 1,578 |
| 16 | Paracetamol (for injection) | bottle | 632,900 | 47,940 | 51,432 | 68,000 | 28,500 | 18,000 | 20,000 | 167,196 | 5,800 | 15,000 | 211,032 |
| 17 | Dexamethasone | ample | 34,400 | 378 | 1,539 | 2,120 | 5,075 | 0 | 400 | 11,964 | 216 | 1,200 | 11,508 |

(3) Micronutrients

Iron preparations (iron sulfide) and vitamin A (retinol) shall be procured for infants under five years of age throughout the country for the purpose of improving their nutritious state and reducing the morbidity rate of infectious diseases and the mortality rate. Iron preparations and vitamin A shall be procured in the amounts of 3,157,000 bottles¹ and 17,100 bottles respectively calculated on the basis of the population to be covered and the prescription dosage for the age group. (See Tables 2-3 and 2-4.) According to the Ministry of Health, the standard prescription dosage for each item is as follows.

- Iron preparation (iron sulfide)

¹ One bottle contains 30 ml.

Infants aged 6 months to 2 years old: 6 bottles/person/year

Infants aged three and four years old: 3 bottles/person/year

- Vitamin A (retinol)

Infants aged 6 to 11 months old: 0.017 bottles/person/year

Infants aged 1 to 5 years old: 0.020 bottles/person/year

Table 2-3 Calculation table of the required amount of iron preparations

| SILAIS | Population to be covered | | Prescription dosage | | Total |
|---------------|--|--------------------------------|--|--|-----------|
| | Infants aged 6 to 11 months old and 1 to 2 years old | Infants aged 3 and 4 years old | Infants aged 1 and 2 years old (6 bottles/person/year) | Infants aged 3 and 4 years old (3 bottles/person/year) | |
| Nueva Segovia | 12,745 | 11,701 | 76,470 | 35,103 | 111,573 |
| Madriz | 9,012 | 8,142 | 54,072 | 24,426 | 78,498 |
| Esteli | 12,586 | 11,020 | 75,516 | 33,060 | 108,576 |
| Chinandega | 27,671 | 26,918 | 166,026 | 80,754 | 246,780 |
| Leon | 24,105 | 23,978 | 144,630 | 71,934 | 216,564 |
| Managua | 74,790 | 70,863 | 448,740 | 212,589 | 661,329 |
| Masaya | 16,364 | 15,877 | 98,184 | 47,631 | 145,815 |
| Granada | 11,751 | 11,469 | 70,506 | 34,407 | 104,913 |
| Carazo | 13,152 | 12,957 | 78,912 | 38,871 | 117,783 |
| Rivas | 10,203 | 9,916 | 61,218 | 29,748 | 90,966 |
| Boaco | 9,589 | 9,052 | 57,534 | 27,156 | 84,690 |
| Chontales | 32,370 | 30,894 | 194,220 | 92,682 | 286,902 |
| Jinotega | 28,915 | 24,263 | 173,490 | 72,789 | 246,279 |
| Matagalpa | 42,746 | 39,069 | 256,476 | 117,207 | 373,683 |
| RAAN | 17,174 | 15,604 | 103,044 | 46,812 | 149,856 |
| RAAS | 9,034 | 8,083 | 54,204 | 24,249 | 78,453 |
| Rio San Juan | 6,219 | 5,664 | 37,314 | 16,992 | 54,306 |
| Total | 358,426 | 323,769 | 2,150,556 | 1,006,410 | 3,156,966 |

Amount in parenthesis () represents the standard prescription dosage.

Table 2-4 Calculation table of the required amount of vitamin A

| SILAIS | Population to be covered | | Prescription dosage | | Total |
|---------------|---------------------------------|-------------------------------|--|--|---------------|
| | Infants aged 6 to 11 months old | Infants aged 1 to 5 years old | Infants aged 6 to 11 months old (0.017 bottles/person /year) | Infants aged 1 to 5 years old (0.020 bottles/person /year) | |
| Nueva Segovia | 3,075 | 27,333 | 52 | 547 | 599 |
| Madriz | 2,202 | 19,110 | 37 | 382 | 419 |
| Esteli | 2,957 | 27,965 | 50 | 559 | 609 |
| Chinandega | 6,417 | 61,910 | 109 | 1,238 | 1,347 |
| Leon | 5,513 | 54,854 | 94 | 1,097 | 1,191 |
| Managua | 17,752 | 164,278 | 302 | 3,286 | 3,588 |
| Masaya | 3,800 | 36,538 | 65 | 731 | 796 |
| Granada | 2,718 | 26,353 | 46 | 527 | 573 |
| Carazo | 3,019 | 29,699 | 51 | 594 | 645 |
| Rivas | 2,374 | 22,822 | 40 | 456 | 496 |
| Boaco | 2,262 | 20,974 | 38 | 419 | 457 |
| Chontales | 7,521 | 71,275 | 128 | 1,426 | 1,554 |
| Jinotega | 7,275 | 57,998 | 124 | 1,160 | 1,284 |
| Matagalpa | 10,274 | 91,269 | 175 | 1,825 | 2,000 |
| RAAN | 4,123 | 36,479 | 70 | 730 | 800 |
| RAAS | 2,169 | 18,944 | 37 | 379 | 416 |
| Rio San Juan | 1,496 | 13,240 | 25 | 265 | 290 |
| Total | 84,947 | 781,041 | 1,443 | 15,621 | 17,064 |

Amount in parenthesis () represents the standard prescription dosage.

(4) Extension Program on Immunisation (EPI)-related equipment

1) Measles, mumps and rubella (MMR) combined vaccine

This combined vaccine has been used for the vaccination of measles, mumps and rubella since 1998. In order to keep cases of measles at zero, a nation-wide vaccination campaign will be implemented in 2000 with the goal of stamping out measles, by extending the scope of those to be vaccinated to include infants aged 24 months to 4 years, in addition to the previously-covered infants aged 12 to 23 months.

2) Influenza vaccine (Hib)

Haemophilus influenza is a bacterial infection transmitted mainly to infants; and 40% of

pneumonia, one of the main causes of infant death in Nicaragua, is caused by these bacteria. With the aim of preventing these acute respiratory diseases, three-stage vaccination will be carried out on 164,745 infants aged 12 to 23 months (statics of 1998) starting from 2000.

Procurement amount and dose form

Vaccination in Nicaragua has been using vaccines contained in 10-dose phials², from which a loss of approximately 20% has been generated. Therefore, in this Project, a mono-dose phial³, which does not generate the same frequency of loss, shall be procured. The procurement amount shall be determined on the basis of the population to be vaccinated (Table 2-5). However, in view of the fact that it is difficult to reduce the loss to zero and that population statistics are not accurate, a loss of approximately 10% should be anticipated.

The requested amounts were 700,000 doses of MMR and 600,000 doses of Hib. However because the loss rate should be same for both vaccines (10%), the procurement amounts shall be as follows.

- MMR: $632,623 \text{ people} \times 1.10 = 695,886 \Rightarrow 700,000 \text{ doses}$
- Hib: $164,745 \text{ people} \times 1.10 \times 3 = 543,659 \Rightarrow 550,000 \text{ doses}$

² One bottle (phial) contains 10 doses.

³ One bottle (phial) contains 1 dose.

Table 2-5 Details of population to be vaccinated in each SILAIS

| No | SILAIS | 12 to 23 months old (Hib) | 1 to 5 years old (MMR) |
|--------------|---------------|---------------------------|------------------------|
| 1 | Chinandega | 12,683 | 49,835 |
| 2 | Leon | 11,028 | 43,973 |
| 3 | Matagalpa | 19,689 | 74,325 |
| 4 | Nueva Segovia | 5,867 | 22,197 |
| 5 | RAAN | 7,916 | 29,782 |
| 6 | RAAS | 4,170 | 15,551 |
| 7 | Esteli | 5,772 | 22,509 |
| 8 | Jinotega | 13,399 | 47,970 |
| 9 | Rivas | 4,676 | 18,359 |
| 10 | Madriz | 4,156 | 15,554 |
| 11 | Managua | 34,340 | 132,555 |
| 12 | Rio San Juan | 2,868 | 10,795 |
| 13 | Granada | 5,385 | 21,205 |
| 14 | Masaya | 7,502 | 29,428 |
| 15 | Boaco | 4,406 | 16,979 |
| 16 | Carazo | 6,022 | 23,867 |
| 17 | Chontales | 14,866 | 57,739 |
| Total | | 164,745 | 632,623 |

3) Syringes

Recently, an auto-destruct⁴ syringe has been developed as a disposable syringe effective in the prevention of HIV infection. The WHO has established a quality standard for this type of syringe. According to statistics up to 1995, 210 people were infected by HIV/AIDS in Nicaragua. Although the proportion of those developing AIDS is lower in Nicaragua than in other Central American countries, at 14 people per million, the Ministry of Health assumes that for every reported case there are between 50 and 100 cases that go unreported.

In this Project, vaccination shall be implemented using auto-destruct syringes following the WHO recommendations. The procurement amount of syringes shall be same as that of vaccines, 1.25 million pieces.

4) Safety boxes (for incinerating syringes)

With the support of the EU, Nicaragua has been implementing training on the management of

⁴ When the vaccine is injected, that is, when the inner plunger (piston) of the syringe moves up and down once, the inner plunger locks to make reuse impossible. It is also impossible to remove the needle.

medical waste disposal. In order to maximise management consciousness regarding the disposal of syringes, positive use shall be made of safety boxes for waste syringes. The procurement amount shall be 12,500 boxes, calculating one box per 100 syringes.

5) Solar refrigerators

In order to carry out a sound vaccination programme, highly reliable refrigerators are necessary. However, in the central and eastern areas of Nicaragua, where the electricity supply is poor, the establishment of cold chain equipment is especially urgent. Twelve solar refrigerators⁵ have been introduced in these areas at present. (See Table 2-6.) However not enough refrigerators have been installed yet, and refrigerators of the same type are to be installed at thirty health centres and clinics in five SILAISs. (See Table 2-7.)

Table 2-6 List of SILAISs with existing solar refrigerators

| SIL AIS name | Number of refrigerators |
|--------------|-------------------------|
| Chontales | 6 |
| Matagalpa | 3 |
| Jinotega | 2 |
| Boaco | 1 |
| Total | 12 |

Table 2-7 List of SILAISs planned to be supplied with solar refrigerators

| SIL AIS name | Number of refrigerators |
|--------------|-------------------------|
| RAAN | 9 |
| RAAS | 5 |
| Rio San Juan | 6 |
| Jinotega | 9 |
| Boaco | 1 |
| Total | 30 |

⁵ Existing refrigerators have a vaccine storage capacity of 17.5 litres and are equipped with ice pack freezers.

(5) Nebulisers

Nebulisers for the inhalation of anti-asthmatic medicine (bronchodilator) as treatment for respiratory diseases shall be supplied to forty-three health centres in four SILAISs. (Refer to Table 2-8)

The antiasthmatic agent salbutamol as an inhalant, is requested as a pharmaceutical product for IMCI.

Table 2-8 List of SILAISs planned to receive nebulisers

| SIL AIS name | Number of refrigerators |
|---------------|-------------------------|
| Chinandega | 15 |
| Jinotega | 7 |
| Nueva Segovia | 4 |
| Matagalpa | 17 |
| Total | 43 |

2-3 Basic Design

2-3-1 Design Concept

(1) Specifications and grade of the equipment to be procured

1) Essential pharmaceutical products and micronutrients

Essential pharmaceutical products and micronutrients to be procured shall be those conforming to the ingredients, dosage forms and contents specified in the list of pharmaceutical products of Nicaragua. The number of tablets contained in a bottle is not specified in the said list. However since the standard number of tablets from the manufacturers is 100 or 1000, economy-size bottles containing 1000 tablets shall be procured.

If the requested amount cannot be exactly divided by the package unit for exportation, the resultant amount shall be rounded off to the package unit.

Package inserts and labels shall be written in Spanish.

2) EPI-related equipment

The EPI-related equipment to be procured by this Project, such as vaccines, syringes, safety boxes and refrigerators, shall meet the WHO/UNICEF standards.

i. Vaccines

For the nation-wide vaccination campaign, vaccines of 10 doses/phial or 20 doses/phial (multi-dose phial) have a lower unit price and can provide efficient vaccination. However, because the vaccines are used for routine vaccination throughout the year, temperatures may exceed the storage temperature before multi-dose vaccines are used up, and this would cause a large loss of vaccine. Therefore, the vaccines to be procured in this Project shall be of mono-dose type.

Because vaccines must be transported at a controlled temperature of 2 to 8°C, they shall be transported by air to ensure a shorter transportation time and easier temperature control.

ii. Syringes

The syringes used for vaccination shall be of the auto-destruct type recommended by the WHO for the purpose of preventing HIV infection. This type of syringe is made in such a way that when the inner plunger (piston) is moved up and down once, it locks and the syringe cannot be used again. Since this is the first time this type of syringe has been used in Nicaragua, it will be necessary to make the related parties understand the structure of this type of syringe in advance, in order to prevent the loss of syringes caused by erroneous operation. In this regard, the cooperation of local PAHO will be necessary.

The procurement amount shall be same as that for vaccines, including the anticipated loss. The reason for this is that because the loss rate for vaccines has itself few statistical reasons, there is the possibility that all the vaccines to be procured may be used. Even if there is no loss of vaccines and extra syringes remain, the remaining syringes can be effectively used for other vaccines or for vaccinations the following year, and they will not be wasted.

iii. Safety boxes

Each safety box shall have a capacity of 5 litres, to hold 100 syringes.

iv. Solar refrigerators

The solar refrigerators being used in Nicaragua at present are of a type with a vaccine storage capacity of 17.5 litres. The facilities to which it is planned to supply refrigerators are situated in locations that have poor access, in addition to which they are not electrified. Furthermore, in view of the possibility that the types of vaccines used for vaccination may increase in the future, the solar refrigerators should have a minimum storage capacity of 20 litres to reduce the burden of vaccine transportation from the SILAIS. Solar modules shall be designed on the basis of the 3.05 kWh/m²/day of sunshine of the Region Autonoma Atlantico Sur (RAAS), which has the least amount of sunshine of the Project sites.

The refrigerant agent used in the refrigerators shall be CFC-free.

3) Nebulisers

Nebulisers are broadly classified into the injection type and the ultrasound type. This Project will procure ultrasound nebulisers. Ultrasound nebulisers can nebulise smaller particles, less than 5 micron, allowing the bronchodilator to act more effectively. Ultrasound nebulisers were procured in the "Granada Hospital Construction Project", which was implemented as a grant aid project of Japan. The amount of medication contained shall be 30 ml or more and the inhalation amount shall be 1 to 5 ml/min.

(2) Suppliers

1) Essential pharmaceutical products

Many of the pharmaceutical products manufactured and sold in Japan have different specifications with regard to ingredients and dose forms to those requested in this Project. Even in the case of pharmaceutical products with the same specifications, Japanese drugs are several times to several dozen times more expensive than those manufactured in a third country. Thus pharmaceutical products manufactured in Japan have no competitive power.

Furthermore, since the Japanese pharmaceutical manufacturers have no marketing strategies with regard to the markets of underdeveloped countries, their package inserts and labels are written in Japanese only. Thus, not even English-language versions are available, much less Spanish or French.

In addition, some third-country pharmaceutical products are cheap ones manufactured in India or China. There are reports that pharmaceutical products of inferior quality are actually distributed, with no certain level of quality maintained.

Therefore, from the standpoint of ensuring quality, the suppliers shall be of OECD countries.

2) Vaccines

At present, the vaccines used for vaccination in Nicaragua are procured under the budget of Nicaragua through international tendering conducted by PAHO. For this reason, the vaccines of various countries which satisfy the various WHO standards are procured.

The suppliers of vaccines in this Project shall be manufacturers satisfying the WHO standard. However, prices differ between OECD countries such as France, Belgium and Italy, and other countries such as India and Croatia. For vaccinations implemented in European countries, vaccines of higher quality, that is, vaccines with fewer adverse side-effects and originally manufactured in the OECD countries, are used even if the prices are higher.

It cannot be denied that when the recipient country purchases vaccines under its own budget, the only condition is to satisfy the WHO standard and procure cheaper products. However when pharmaceutical products are procured under the grant aid of Japan, the procurement of vaccines of better quality as far as the budget will allow, must be considered. Thus the suppliers of vaccines in this Project shall be those of the OECD countries.

3) Syringes, safety boxes, solar refrigerators

These products shall satisfy the WHO/UNICEF standards. Thus, the suppliers shall be as follows: auto-destruct syringes shall be procured from U.S.A. or Germany; safety boxes shall be procured from Germany, Finland, Norway or South Africa.

As for the solar refrigerators, the refrigerator main body shall be procured from U.S.A. and UK, and the solar systems shall be procured from Japan, U.S.A., UK and Germany.

4) Nebuliser

More than two Japanese manufacturers are manufacturing nebulisers that satisfy the specifications, and so nebulisers shall be procured from Japan.

2-3-2 Basic Design

(1) General essential pharmaceutical products

| No. | Designation | Purpose | Composition | Dose form | Unit | Amount |
|-----|---------------------------------|----------------------------------|---|---------------------------|---------|-----------|
| 1 | Procaine benzylpenicillin | antibiotic | 800,000 IU | preparation for injection | phial | 1,600,000 |
| 2 | Benzathine benzylpenicillin | antibiotic | 1.2 million IU | preparation for injection | phial | 120,000 |
| 3 | Cloxacillin | antibiotic | 125mg/5ml | solution | bottle | 35,000 |
| 4 | Erythromycin | antibiotic | 250mg/5ml | solution | bottle | 25,000 |
| 5 | Doxycycline | antibiotic | 100mg | capsule | capsule | 485,000 |
| 6 | Sulfamethoxazole + trimethoprim | antibiotic | 400mg+80mg | tablet | tablet | 2,600,000 |
| 7 | Sulfamethoxazole + trimethoprim | antibiotic | 200mg+40mg/5ml | solution | bottle | 150,000 |
| 8 | Benzoate + salicylate | skin agent | 5% | ointment | tube | 320,000 |
| 9 | Cloroquine | anti-malarial agent | phosphate, 250 mg | tablet | tablet | 1,600,000 |
| 10 | Mebendazole | anti-threadworm agent | 100mg | tablet | tablet | 536,500 |
| 11 | Salbutamol | antiasthmatic agent | 2mg/5ml | syrup | bottle | 120,000 |
| 12 | Lactated ringer's solution | electrolytic fluid replacement | 1,000cc, NaCl 0.6%, KCl 0.03%, CaCl ₂ 0.02%, NaHCO ₃ 0.31% | preparation for injection | bottle | 110,000 |
| 13 | Sodium chloride | electrolytic replacement | 1,000cc, 0.9% | | bottle | 40,000 |
| 14 | Water for injection | distilled water for injection | distilled water, 5 ml | ampoule | bottle | 1,000,000 |
| 15 | Oral rehydration salts (ORS) | | 1,000 cc sodium chloride 3.5 g, trisodium citrate 2.9 g, potassium chloride 1.5 g, glucose 20.0 g | powder | sachet | 650,000 |
| 16 | Tetracycline | antibiotic | 1% | ointment | tube | 300,000 |
| 17 | Paracetamol | antipyretic antiphlogistic agent | 100 mg/ml, 15 ml/bottle | preparation for injection | bottle | 197,000 |
| 18 | Paracetamol | antipyretic antiphlogistic agent | 500mg | tablet | tablet | 1,000,000 |

Note: "IU" indicated in the composition column is the abbreviation of "International Unit", which represents the internationally-unified standard for indicating the contents and the potency of vitamins, hormones and enzymes.

(2) Essential pharmaceutical products for IMCI

| No. | Designation | Purpose | Composition | Dose form | Unit | Amount |
|-----|---------------------------------|------------------------------------|---|---------------------------|---------|-----------|
| 1 | Benzylpenicillin | antibiotic | 1 million IU | preparation for injection | phial | 251,700 |
| 2 | Procaine benzylpenicillin | antibiotic | 800,000 IU | preparation for injection | phial | 1,531,600 |
| 3 | Benzathine benzylpenicillin | antibiotic | 1.2 million IU | preparation for injection | phial | 287,400 |
| 4 | Amoxicillin | antibiotic | 250mg/5ml | solution | bottle | 16,900 |
| 5 | Chloramphenicol | antibiotic | 1g | solution | bottle | 20,200 |
| 6 | Gentamicin | antibiotic | 20mg/2ml | ampoule | ampoule | 102,700 |
| 7 | Sulfamethoxazole + trimethoprim | antibiotic | 200mg+40mg/5ml | solution | bottle | 408,100 |
| 8 | Sulfamethoxazole + trimethoprim | antibiotic | 400mg+80mg | tablet | tablet | 3,856,700 |
| 9 | Nystatin | antifungal agent | 100,000 IU | solution | bottle | 64,500 |
| 10 | Albendazole | hydatid anthelmintic | 100mg/5ml | solution | bottle | 165,700 |
| 11 | Oral rehydration salt | | 1,000 cc sodium chloride 3.5 g, trisodium citrate 2.9 g, potassium chloride 1.5 g, glucose 20.0 g | powder | sachet | 2,524,500 |
| 12 | Salbutamol | antiasthmatic agent | 2mg/5ml | syrup | bottle | 271,500 |
| 13 | Salbutamol | antiasthmatic agent | 5mg/1ml (5%) | inhalant | bottle | 10,800 |
| 14 | Lactated ringer's solution | electrolytic fluid replacement | 1,000cc, NaCl 0.6%, KCl 0.03%, CaCl ₂ 0.02%, NaHCO ₃ 0.31% | preparation for injection | bottle | 79,100 |
| 15 | Ritodorine | premature birth depressor | 10mg/1ml | ampoule | ampoule | 4,700 |
| 16 | Paracetamol | antipyretic antiphlogistic agent | 10mg/1ml | preparation for injection | ampoule | 1,000,000 |
| 17 | Dexamethasone | adrenocortical hormone preparation | 4mg/2ml | preparation for injection | bottle | 300,000 |

Note: "IU" indicated in the composition column is the abbreviation of "International Unit", which represents the internationally-unified standard for indicating the contents and the potency of vitamins, hormones and enzymes.

(3) Micronutrients

| No. | Designation | Purpose | Specification | Unit | Amount |
|-----|----------------------------------|-------------------------------------|------------------|--------|-----------|
| 1 | Iron preparations (iron sulfide) | prevention and treatment of anaemia | 15mg/0.6ml, 30ml | bottle | 3,157,000 |
| 2 | Vitamin A (retinol) | nutritious supplement | 25,000 IU, 30 ml | bottle | 17,100 |

(4) EPI-related equipment and nebuliser

| No. | Designation | Purpose | Specification | Unit | Amount |
|-----|--------------------|-----------------------------------|--|-------|-----------|
| 1 | MMR vaccine | measles, mumps, rubella | 10 doses/phial, with solubilizing solution | dose | 700,000 |
| 2 | Hib vaccine | Haemophilus influenza | 10 doses/phial, with solubilizing solution | dose | 550,000 |
| 3 | Syringe | vaccination | auto-destruct type, 0.5 cc | piece | 1,250,000 |
| 4 | Safety box | disposal of syringes | 5 litre (for 100 syringes) | piece | 12,500 |
| 5 | Solar refrigerator | storage of vaccines | vaccine storage capacity of more than 20 litres, a set of solar system | set | 30 |
| 6 | Nebuliser | treatment of respiratory diseases | medication amount of 30 ml, nebulising amount of 5 ml/min | unit | 43 |

Chapter 3 Implementation Plan

3-1 Implementation Schedule

3-1-1 Implementation schedule

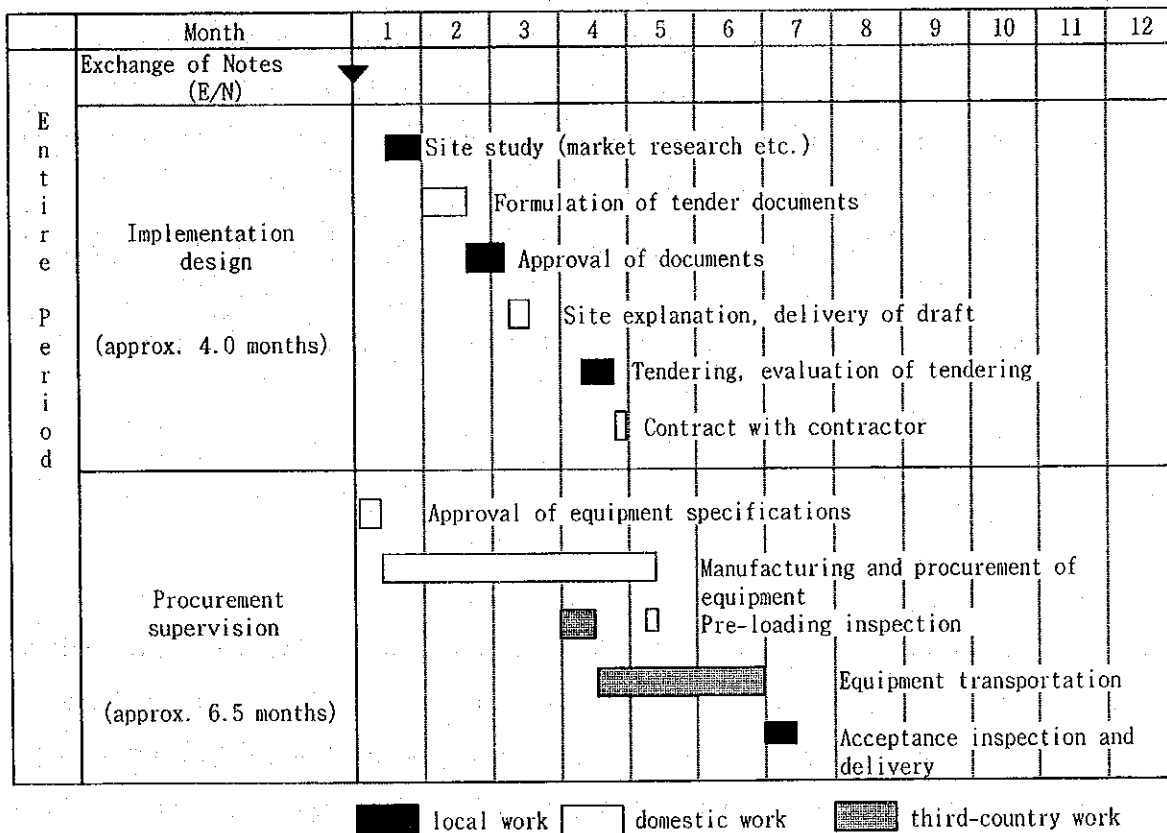
Budgetary year: Single year (F/Y 1998)

Work schedule:

Entire work period (from E/N to delivery): 10.5 months

From E/N to contract with contractor: 4.0 months

Delivery (from contract with contractor to delivery): 6.5 months



The government of Nicaragua plans to implement a nation-wide vaccination campaign in 2000. Therefore, it is necessary for the vaccines and syringes to arrive in Nicaragua by the beginning of 2000. Since the procurement of vaccines will take approximately three months, it is desirable that the vaccines be ordered by September 1999.

3-1-2 Obligations of recipient country

The obligations of Nicaragua in the implementation of this Project are as follows.

- (1) To pay bank commission to the Japanese bank(s) in accordance with the banking agreement.
- (2) To carry out customs procedures promptly, waive taxes and conduct inland transportation smoothly after the products have been unloaded in Nicaragua.
- (3) To exempt from customs duties, domestic taxes and other financial surcharges imposed in Nicaragua, Japanese nationals requiring services related to the provision of products and services under the approved contract.
- (4) To provide the necessary conveniences for Japanese nationals entering and staying in Nicaragua in order that they might implement works and services related to the provision of products and services in accordance with the approved contract.
- (5) To issue the necessary permits for implementing the grant aid as necessary.
- (6) To make necessary budgetary measures and secure training for staff involved in the operation so that the equipment to be purchased through the grant aid cooperation can be properly and effectively maintained and used.
- (7) To properly and effectively use and maintain the equipment to be purchased by the grant aid.
- (8) To bear all necessary expenses for implementation of the Project other than those covered by the grant aid.

3-1-3 Special notes

(1) Vaccines

This Project includes the procurement of two types of vaccines (MMR and Hib) used for vaccination programmes. These vaccines are such that they must be managed under a controlled temperature of 0 to 8°C from the time of their shipment from the factory through transportation and storage until immediately before use. The necessary implementation system has been established in Nicaragua, including the previous management of vaccines. It is important that this management system be maintained in the future.

(2) Essential pharmaceutical products

The quality of the essential pharmaceutical products to be procured by this Project can be

maintained if the products are stored at room temperature up to approximately 30°C. However, the quality guarantee period is generally three years. Thus they must be consumed before the expiration date, which point must be confirmed with the Nicaragua side.

3-2 Operation and Maintenance Plan

Among the items to be procured in this Project, items that will need maintenance are the solar refrigerators. Nicaragua has previously introduced twelve solar refrigerators with the support of the United States Agency for International Development (USAID), all of which have been operating without any problem. About half of the SILAISs have full-time cold chain engineers conducting the maintenance. In the SILAISs where there is no full-time engineer, four engineers of the central agency patrol on a regular basis. Nicaragua has implemented training on temperature control and maintenance of refrigerators for health employees with the support of PAHO. Thus the cold chain and maintenance systems of Nicaragua are highly evaluated.

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

(1) Verification method for aptness

1) Items and amounts

i. Essential pharmaceutical products (including micronutrients)

The Ministry of Health of Nicaragua selected the pharmaceutical products to be used for dealing with the hurricane damage and for IMCI. The main pharmaceutical products to be procured are antibiotics. Other pharmaceutical products include parasiticides, antipyretic analgesics, bronchodilators, premature birth depressors, transfusions, oral supplemental solutions, water for injections and micronutrients (iron and vitamin A). All of these are essential pharmaceutical products with a large demand and conform to the concept of this Project.

The amount of pharmaceutical products for dealing with the hurricane damage is the equivalent of six months' demand, calculated on the basis of the population ratio of the SILAIS. The amount of pharmaceutical products for IMCI is the equivalent of one year's demand, calculated by each SILAIS. Compared with the annual shipment of pharmaceutical products managed by the Centro de Insumos para la Salud (CIPS) (Table 4-1), amounts in excess of last year's figures are required for eleven out of twenty-nine items. The demand for these items (antibiotics and micronutrients) has increased in the fourth quarter because of the effect of hurricane damage, and this conforms to the reasons of the request.

Table 4-1 Distribution achievements of pharmaceutical products (F/Y 1998)

| | Item | Unit | 1st quarter | 2nd quarter | 3rd quarter | 4th quarter | Total amount | Requested amount | Requested amount/total amount |
|----|--|---------|-------------|-------------|-------------|-------------|--------------|------------------|-------------------------------|
| 1 | Benzylpenicillin | phial | 450,489 | 282,159 | 430,338 | 474,196 | 1,637,182 | 251,700 | 0.15 |
| 2 | Procaine benzylpenicillin | phial | 247,742 | 220,566 | 259,744 | 980,047 | 1,708,099 | 3,131,600 | 1.83 |
| 3 | Benzathine benzylpenicillin | phial | 45,780 | 60,804 | 56,922 | 136,803 | 300,309 | 407,400 | 1.36 |
| 4 | Cloxacillin | phial | 45,780 | 60,804 | 56,922 | 136,803 | 300,309 | 35,000 | 0.12 |
| 5 | Chloramphenicol | bottle | 32,036 | 19,903 | 35,745 | 40,053 | 127,737 | 20,200 | 0.16 |
| 6 | Gentamicin | bottle | 39,511 | 47,437 | 42,947 | 45,378 | 175,273 | 102,700 | 0.59 |
| 7 | Sulfamethoxazole + trimethoprim (tablet) | tablet | 385,467 | 792,533 | 8,391,887 | 1,975,170 | 11,525,057 | 6,456,700 | 0.56 |
| 8 | Sulfamethoxazole + trimethoprim (solution) | bottle | 82,029 | 96,343 | 94,094 | 163,749 | 436,215 | 558,100 | 1.28 |
| 9 | Nystatin | tube | 5,000 | 10,271 | 12,351 | 14,822 | 42,444 | 64,500 | 1.52 |
| 10 | Mebendazole | tablet | 42,605 | 31,422 | 39,701 | 76,086 | 189,814 | 536,500 | 2.83 |
| 11 | Oral rehydration salts | sachet | 495,520 | 425,429 | 525,885 | 1,595,632 | 3,042,466 | 3,174,500 | 1.04 |
| 12 | Salbutamol (solution) | bottle | 63,079 | 55,344 | 62,969 | 107,643 | 289,035 | 319,500 | 1.11 |
| 13 | Salbutamol (inhalant) | bottle | 5,996 | 4,904 | 7,091 | 6,623 | 24,614 | 10,800 | 0.44 |
| 14 | Lactated ringer's solution | bottle | 50,146 | 25,847 | 47,552 | 88,953 | 212,498 | 189,100 | 0.89 |
| 15 | Ritodorine | bottle | 5,482 | 5,026 | 7,892 | 8,319 | 26,719 | 4,700 | 0.18 |
| 16 | Paracetamol (for injection) | bottle | 159,688 | 149,047 | 147,968 | 459,780 | 916,483 | 829,900 | 0.91 |
| 17 | Paracetamol (tablet) | tablet | 3,319,242 | 2,592,816 | 3,018,060 | 5,609,222 | 14,539,340 | 1,000,000 | 0.07 |
| 18 | Dexamethasone | bottle | 40,774 | 29,135 | 40,839 | 43,214 | 153,962 | 34,400 | 0.22 |
| 19 | Retinol | bottle | 0 | 0 | 0 | 6,944 | 6,944 | 17,100 | 2.46 |
| 20 | Iron sulfide | bottle | 75,440 | 94,129 | 84,277 | 119,419 | 373,265 | 3,157,000 | 8.46 |
| 21 | Cloxacillin | bottle | 48,506 | 44,330 | 43,473 | 66,463 | 202,772 | 35,000 | 0.17 |
| 22 | Erythromycin | bottle | 27,097 | 23,453 | 42,242 | 71,321 | 164,113 | 25,000 | 0.15 |
| 23 | Doxycycline | tablet | 371,508 | 252,983 | 278,448 | 813,904 | 1,716,843 | 485,000 | 0.28 |
| 24 | Benzoate + salicylate | tube | 7,785 | 11,167 | 11,148 | 45,865 | 75,965 | 320,000 | 4.21 |
| 25 | Cloroquine | tablet | 2,873,019 | 1,526,649 | 996,377 | 2,732,218 | 8,128,263 | 1,600,000 | 0.20 |
| 26 | Albendazole | tablet | 280,537 | 1,724,222 | 10,503 | 881,342 | 2,876,604 | 165,700 | 0.06 |
| 27 | Sodium chloride | bottle | 100,343 | 45,674 | 91,875 | 115,133 | 353,025 | 40,000 | 0.11 |
| 28 | Water for injection | ampoule | 650,253 | 331,323 | 577,887 | 1,397,295 | 2,956,748 | 1,000,000 | 0.34 |
| 29 | Tetracycline | tube | 14,000 | 16,739 | 17,810 | 42,580 | 91,129 | 300,000 | 3.29 |

ii. Solar refrigerators

Fifteen percent (15%) of health facilities with no refrigerator are located in the northern part of Nicaragua along the Atlantic coast. These areas not only have no electricity, but are very difficult of access. Small villages are scattered along the river, where outboard motor boats are used. Vaccination teams from the nearest health facility visit these areas every three to six months, carrying vaccines in a vaccine carrier and gathering people at a centrally-located village to conduct vaccinations.

However, vaccines are said to remain cool in a vaccine carrier without problem for no longer than seventy-two hours. Thus, areas that cannot be reached within this time limit cannot receive vaccination at present. Depending on the condition of the outboard motor or the state of the river, planned activities cannot be conducted satisfactorily. Therefore the vaccination rate in these areas is less than 30%, which is much lower than the 90% achieved in other areas. Furthermore, this vaccination method involves greater personnel expenses, leading to increased expenses for vaccination programmes.

All the sites covered by this Project are in the above-mentioned situation. Thus the installation of solar refrigerators is certainly apt, and both the direct and indirect beneficial effects are large.

iii. Nebulisers

All the forty-three health centres where the procurement of nebulisers is planned have no nebuliser, in spite of the large number of infants with respiratory diseases. Even in the health centres which do have a nebuliser, one nebuliser is not enough, and many of these centres need one more nebuliser to cope with the situation of patients waiting for treatment. The urgency of the procurement of nebulisers for the forty-three health centres to be covered by this Project is evaluated to be acute.

(2) Beneficial effects

1) Essential pharmaceutical products

i. Essential pharmaceutical products for IMCI

The IMCI aims to reduce the mortality rate and the morbidity rate of infants under five years of age from major diseases such as pneumonia, acute respiratory diseases, diarrhoea, malnutrition, septic fever and meningitis, and to improve the handling of patients at health service agency and communities.

With the procurement of essential pharmaceutical products for the IMCI, it will be possible to prevent diarrhoea and pneumonia, which account for much of the infant mortality, by supplementing one year's demand of the IMCI.

ii. General essential pharmaceutical products

Procurement of general essential pharmaceutical products, including those necessary for the health services as a whole and for the mother-and-child health measures, can supplement a six months' demand of pharmaceutical products, the stock of which became suddenly insufficient because of Hurricane Mitch that hit Nicaragua in October 1998.

2) Micronutrients

The national survey on the deficit of micronutrients carried out in 1993 showed that one out of three children suffers from anaemia caused by a deficiency of vitamin A and iron. Rates of diarrhoea, acute respiratory infectious diseases and mortality all rise in direct proportion to vitamin A deficiency. For this reason, procurement of vitamin A could reduce these symptoms as well as reduce the malnutrition index and contribute to the reduction of complications in infants. It could also reduce the mortality rate from infectious diseases by 30%. Furthermore, the procurement of iron preparations could prevent anaemia, leading to a drop in infant morbidity and mortality, and promoting the intellectual growth of children.

Recently a growing number of mothers are dying in childbirth, the cause of which is excessive haemorrhage at the time of delivery, closely linked with anaemia. This tendency could be reduced through the supply of iron preparations.

3) EPI-related equipment

i. MMR vaccine

EPI covers only one-year-old infants with MMR vaccination, but this Project plans to cover infants of one to four years with the MMR vaccination. This would allow pre-school children to be immunised, widely preventing rubella and mumps as well as preventing the spread of these diseases via the children to their families when these diseases are prevalent at elementary schools. If a woman in the early stages of pregnancy is infected with rubella, there is a high risk of the foetus displaying the congenital rubella syndrome, resulting in miscarriage or the birth of a handicapped child. MMR vaccination will greatly contribute to the prevention of this.

ii. Influenza vaccine

Pneumonia is considered one of the main causes of death in infants under five years of age in Nicaragua, with the second highest mortality rate following diarrhoea in the death statistics for 1995. There has been an increase of 13% in deaths caused by pneumonia in children under one year old and of 33% in children aged one to four years. Forty percent (40%) of the cases of pneumonia are caused by *Haemophilus influenzae*. This *Haemophilus influenzae* also causes meningitis in many cases. Thus, procurement of influenza vaccine could reduce the onset rate of pneumonia, which could in turn reduce the mortality rate.

iii. Solar refrigerators

Approximately 85% of the health facilities in Nicaragua have a cold chain system. The areas which have no cold chain system are mainly located in the northern part of Nicaragua, along the Atlantic coast. This Project will supply solar refrigerators mainly to these areas.

Solar refrigerators can be installed in areas with no electricity, and will contribute to the expansion of the cold chain system.

In addition to having no electricity, the above-mentioned areas are difficult of access. At present, vaccination teams visit these areas carrying vaccines in a vaccine carrier and gathering people together to carry out vaccination. However, areas that cannot be reached within the vaccine cooling time of seventy-two hours in the cool box cannot receive vaccination at present. The present vaccination rate of the whole of Nicaragua is 80%. However, vaccination rate differs greatly according to area. There are some regions which vaccination rate is less than 50%. The vaccination rate of northern Nicaragua along the Atlantic coast is said to be less than 30%. By supplying solar refrigerators to these areas, it will be possible to implement efficient vaccination programmes and it will be possible to improve the vaccination rate of the nation-wide vaccination plan. The Ministry of Health of Nicaragua assumes that in the areas where the installation of a solar refrigerator is planned by this Project, residents that at present cannot be reached within the storage period of vaccines will be able to receive vaccination, and the vaccination rate is expected to increase by 30%. In addition, this could reduce the personnel expenses involved in the dispatching of the vaccination team. As a result, it could further extend the EPI.

4) Nebulisers

Acute respiratory infectious diseases occur most frequently among infants from birth to four

years of age. Procurement of nebulisers could improve the condition of infants suffering from respiratory diseases.

Acute respiratory infectious diseases could be handled at community level. Since at present patients go to one of the few hospitals to receive treatment, the hospitals have to treat patients who otherwise would not need to be treated in hospital. With the installation of a nebuliser in the health centre of each SILAIS, patients would not need to go to hospital. Thus the possibility of patients being infected with other diseases when they are treated at the hospital would be reduced, in addition to which the hospitals could focus on more advanced medical services.

4-2 Recommendation

The Government of Nicaragua plans to monitor this Project at every quarter. In view of the implementation system of the Ministry of Health, there is considered to be no problem with the monitoring of pharmaceutical products at the delivering side. The Ministry of Health also has information on on-site monitoring where vaccinations are actually carried out or pharmaceutical products are actually delivered. Especially since grant aid may possibly be extended in this Project, it is desirable that not only the input achievements, but also the output achievements, be understood.

[Appendices]

1. Member List of the Survey Team
2. Survey Schedule
3. List of Party Concerned in the Recipient Country
4. Minutes of Discussion

Member List of the Survey Team on the Project for the Promoting Child Health in Nicaragua
(Grant Aid for Child Health)

1. Leader Toshiyuki Iwama;
 First Project Study Division,
 Grant Aid Project Study Department,
 Japan International Cooperation Agency

2. Equipment Procurement Planning 1 (Equipment Planning): Toshio Sugawara;
 Planning and Survey Division,
 Grant Aid Management Department,
 Japan International Cooperation System

3. Equipment Procurement Planning 2 (Procurement Planning): Tomoko Nikai;
 Planning and Survey Division,
 Grant Aid Management Department,
 Japan International Cooperation System

4. Interpreter (Spanish): Setsuko Otaki;
 Training Coordinator,
 Japan International Cooperation Centre

Survey Schedule

| No | Date | Day of the week | Planned activities | | | | Where to stay |
|----|------------|-----------------|---|---|--|--------------------------------------|--|
| | | | Iwama (Team leader) | Sugawara (Equipment Planning) | Nikai (Procurement Planning) | Otaki (Interpreter) | |
| 1 | January 12 | Tue | Participate in the team from the B/D study of Azerbaijan Medical Equipment Procurement | Narita 11:00 (NH010) → New York 0915 | | | New York |
| 2 | January 13 | Wed | | New York 0835 (TA571) → Managua 1450 | | | Managua |
| 3 | January 14 | Thu | | Courtesy visit to the Ministry of Health, discussion of schedule | | | Ditto |
| 4 | January 15 | Fri | | Site study | | | Ditto |
| 5 | January 16 | Sat | Baku 0445 (LH3293) → Frankfurt 0645 0950 (LH462) → Miami 1405 1645 (B6161) → Managua 1820 | Site study | | | Ditto |
| 6 | January 17 | Sun | Discussion in the team | Same as the left | | | Ditto |
| 7 | January 18 | Mon | Discussion with the Ministry of Health, information exchange on hurricane damages | Same as the left | | | Ditto |
| 8 | January 19 | Tue | (AM) Discussion with the Ministry of Health (PM) Discussion with other donors | Same as the left | | | Ditto |
| 9 | January 20 | Wed | Minutes discussion | Same as the left | | | Ditto |
| 10 | January 21 | Thu | Minutes discussion | Same as the left | | | Ditto |
| 11 | January 22 | Fri | (AM) Minutes discussion (PM) Report to Embassy and JICA office | Same as the left | | | Ditto |
| 12 | January 23 | Sat | Managua 1150 (TA570) → San Salvador 1240 1340 () → Washington DC 1900 | Managua 1645 (G0960) → Mexico City 2140 | Supplemental study and arrangement of materials | | Washington DC / Mexico City / Managua |
| 13 | January 24 | Sun | Arrangement of materials | Mexico City 0945 (AM434) → Phoenix 1420 | Managua 1150 (186162) → | Managua 1150 (TA570) → New York 1935 | Washington DC / Phoenix / on the plane / New York |
| 14 | January 25 | Mon | Discussion with USAID | Study of refrigerator manufacturer (G. G. Co.) | → Madrid 0720 0950 (183242) → Amsterdam 1210 | New York 1100 (NH009) → | Washington DC / Phoenix / Amsterdam / on the plane |
| 15 | January 26 | Tue | Washington DC 1045 (NH0010) → | Study of refrigerator manufacturer Phoenix 1245 (AC684) → Toronto 1845 | Study of Agent (Amsterfalma) | → Narita 1450 | On the plane / Toronto / Amsterdam |
| 16 | January 27 | Wed | → Narita 1430 | Study of vaccine manufacturer (InterVax) | Study of Agent (MEG) | | Toronto / Amsterdam |
| 17 | January 28 | Thu | | Study of vaccine manufacturer Toronto 1705 (AC556) → Washington DC 1925 | Amsterdam 1240 (SH734) → Brussels 1325 Study of agent | | Washington DC / Brussels |
| 18 | January 29 | Fri | | Study of Agent (Medpharm) | Study of vaccine manufacturer (Smith Kline) | | Washington DC / Brussels |
| 19 | January 30 | Sat | | Washington DC 1045 (NH001) → | Brussels 1445 (LH4423) → Frankfurt 1550 1740 (NH210) → | | On the plane |
| 20 | January 31 | Sun | | → Narita 1430 | → Narita 1245 | | |

List of Party Concerned in the Recipient Country

1. Japanese Embassy in Nicaragua

Masaru Ito: Ambassador extraordinary and plenipotentiary

Yasuhisa Suzuki: Councillor

Satoshi Uematsu: Secretary

2. JICA Nicaragua Office

Kozaburo Yonezawa: Director

Minoru Arimoto: JICA specialist

3. Ministry of Health

Martha McCoy: Minister

Mariangeles Arguello: Vice-minister

Federico Prado Rocha: Secretary General

Annamaria Cerulli: Director General of Direction General of External Cooperation

Mario Ortiz: Direction General of External Cooperation

Omar Malespin: Expanded Program on Immunisation (EPI)

Blanca Ulmos : EPI

Gloria E. Navas: Nutrition Program

Edgard Narvaez: Direction of Pharmaceutical Products Procurement

Manuel Antonio Cruz Jiron: Direction of Pharmaceutical Products Procurement

Benjamin Vidaurre: Director of Legal Affairs Bureau

4. Secretary of External Cooperation

Mauricio Gomez L.: Director of Secretary of External Cooperation

Maria Auxiliadora Vindel R.: Staff in charge of Japan

Alejandro Maltez M.: Consultant in charge of Japanese Grant Aid

5. Centro de Insumos para la Salud (CIPS)

Conrado Abarca Paez: Director of Operation Bureau, technical counsellor

Ana Cecilia Herdocia: Responsible staff in charge of pharmaceutical products

Bemarda Reyes M.: Technical supervisor

Isabel Martinez: Responsible staff in charge of pharmaceutical product warehouse

Isidro Malespin: Staff in charge of cold room

6. SILAIS office in Chinandega

Doris Juarez Centeno: Director

Agusutin Mena: Staff in charge of measures for infectious disease

Janeth Carillo G.: Staff in charge of pharmaceutical products and measures for mother and child health care

Janet Ramirez: Staff in charge of pharmaceutical products

7. Roberto Cortez Health Centre in Chinandega

Bayando Duarte H.: Director

Maria del Carmen S.: Responsible staff in charge of nursing

Aura Elena B. M.: Responsible staff in charge of general administration

8. Oscar Arnulfo Romero Clinic in Chinandega

Maria Edipcia Alvarez: Staff in charge of vaccination

9. Health Centre in Tipitapa

Herbert A. Cesar Romero: Director

Graciela Morales C.: Vice-director

Otto Espinal Bottel: Vice-director

10. SILAIS office in Granada

Maria Mercedes Amago: Nurse

Rene Villalobo: Staff in charge of contagious disease

Brenda Gutierrez: Staff in charge of pharmaceutical products

11. Jorge Sinfaroso Bravo Health Centre in Granada

Jorge Prado: Staff in charge of contagious disease

Pablo Moratos: Staff in charge of pharmaceutical products

Sona Menoles: Nurse

Maria Mazarelo: EPI

12. Granada Hospital in Managua

Norma Tapia O.: Vice-director in charge of general administration and finance

13. United States Agency for International Development (USAID)

Jeannette Aguirre de Abruzzese: PROSILAIS Project consultant

Maria Elena Berrios: Staff in charge of pharmaceutical products

Carlos Castillo Solorzano: EPI consultant

14. United Nations Children's Fund (UNICEF)

Debora Comini: Staff in charge of project arrangement

Janeth Chavarria: Staff in charge of public health

15. USAID

Karen J. Nurick: Director of Social Investment

Earle Lawrence: Staff in charge of public health

16. ECAMI S.A. (Agent of solar refrigerator)

Luis Lacayo Lacayo: President

Claudia C. de Lacayo: Director in charge of general administration and sales

17. ALMAR (Customs agent)

Jorge Narvaez E.: Staff in charge of shipment

MINUTA DE ACUERDO

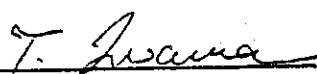
ESTUDIO PARA EL PROYECTO DE LA SALUD INFANTIL BAJO COOPERACION FINANCIERA NO REEMBOLSABLE EN LA REPUBLICA DE NICARAGUA (PROYECTO DE MEJORAMIENTO DE LA SALUD INFANTIL EN NICARAGUA 2000)

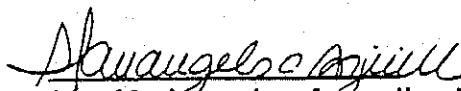
En respuesta a la solicitud de la República de Nicaragua, el Gobierno del Japón decidió llevar a cabo el Estudio para el Proyecto de la Salud Infantil bajo la Cooperación Financiera No Reembolsable (Proyecto de Mejoramiento de la Salud Infantil en Nicaragua 2000, en lo sucesivo denominado "el Proyecto"), y encargó esta responsabilidad a la Agencia de Cooperación Internacional del Japón (JICA).

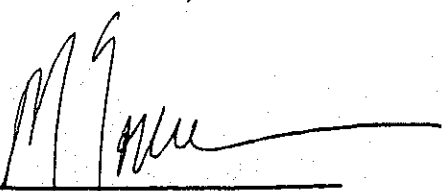
Del 13 de Enero al 22 del mismo mes de 1999, JICA envió a la República de Nicaragua, La Misión de Estudio para el Proyecto de la Salud Infantil (en lo sucesivo denominado "La Misión"), encabezada por el Sr. Toshiyuki Iwama, Director en funciones de la primera sección del departamento de Estudio de Cooperación Financiera No Reembolsable de JICA. La Misión sostuvo una serie de discusiones con el personal responsable de la República de Nicaragua, y a la vez ejecutó estudios del campo en áreas que son objeto del Proyecto.

Como resultado de las discusiones y estudios, ambas partes confirmaron los puntos claves descritos en el documento adjunto.

En fe de lo cual las partes han dispuesto que se firme la presente Minuta de Acuerdo en tres tantos de un mismo tenor, en la Ciudad de Managua, a los veintidos días del mes de enero de mil novecientos noventa y nueve.


Lic. Toshiyuki IWAMA
Jefe de Misión de Estudio
del Proyecto Salud Infantil
JICA


Lic. Mariangeles Arguello
Vice -Ministra
Ministerio de Salud
República de Nicaragua


Dr. Mauricio GÓMEZ L.
Director de Gestión
Secretaría de Cooperación
Externa
República de Nicaragua

DOCUMENTO ADJUNTO

1.- Objetivos del Proyecto

- (1) Garantizar la adquisición de los medicamentos para la atención de la población en general, y particularmente para la atención de los niños.
- (2) Dotar a las unidades de salud de los micronutrientes para la población infantil, que contribuyan a reducir la desnutrición.
- (3) Proveer vacunas y equipos de refrigeración a las unidades de salud, en la lucha contra las enfermedades inmunoprevenibles.
- (4) Dotar a las unidades de salud de nebulizadores para la atención de los pacientes con problemas respiratorios.

A través de éste Proyecto se pretende contribuir a la reconstrucción de Nicaragua a consecuencia de los daños ocasionados por el Huracán Mitch.

2.- Organismo Responsable y Organismo Ejecutor

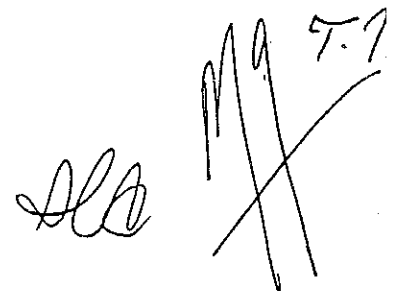
El organismo responsable del Proyecto es el Ministerio de Salud y el ejecutor es la Dirección General de Servicios de Salud (Anexo 1).

3.- Contenido de la Solicitud de la República de Nicaragua

Tras sostener una serie de discusiones con la Misión, se ha revisado y confirmado el contenido de la solicitud de parte de la República de Nicaragua (Anexo 2). Sin embargo, la aprobación final del Proyecto se determinará posterior a un análisis de los resultados del estudio.

4.- Sistema de Cooperación Financiera No Reembolsable del Japón

- (1) El Gobierno de la República de Nicaragua tiene conocimiento del sistema de la Cooperación Financiera No Reembolsable del Japón, en base a las explicaciones ofrecidas por la Misión (Anexo 3).
- (2) El Gobierno de la República de Nicaragua ha acordado tomar medidas necesarias para la ejecución fluida del Proyecto, en caso que se ejecute este Proyecto en el marco de Cooperación Financiera No Reembolsable.

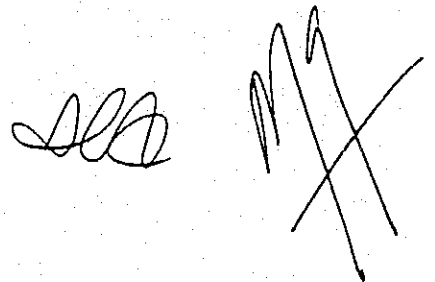
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5.- Otros puntos relevantes

- (1) La Misión está de acuerdo con la propuesta de monitoreo y evaluación del Proyecto presentada por la parte nicaraguense, siendo ésta el envío trimestral a la JICA de un informe de avance a partir del inicio del proyecto. Una vez elaborados, los indicadores propuestos por el Proyecto se enviarán a la JICA para sus comentarios.
- (2) Con respecto a los medicamentos y equipos propuestos en este Proyecto, la parte de Nicaragua ha solicitado la continuidad del financiamiento del Proyecto al Gobierno del Japón, presentando en el futuro aquellos suministros que no estén contemplados a ser financiados por fondos nacionales o externos.

Al respecto, La Misión informó que el Gobierno del Japón decidirá la continuidad del Proyecto en base a solicitud que presente el Ministerio de Salud, por lo menos con dieciocho meses de anticipación antes de finalizar el Proyecto.

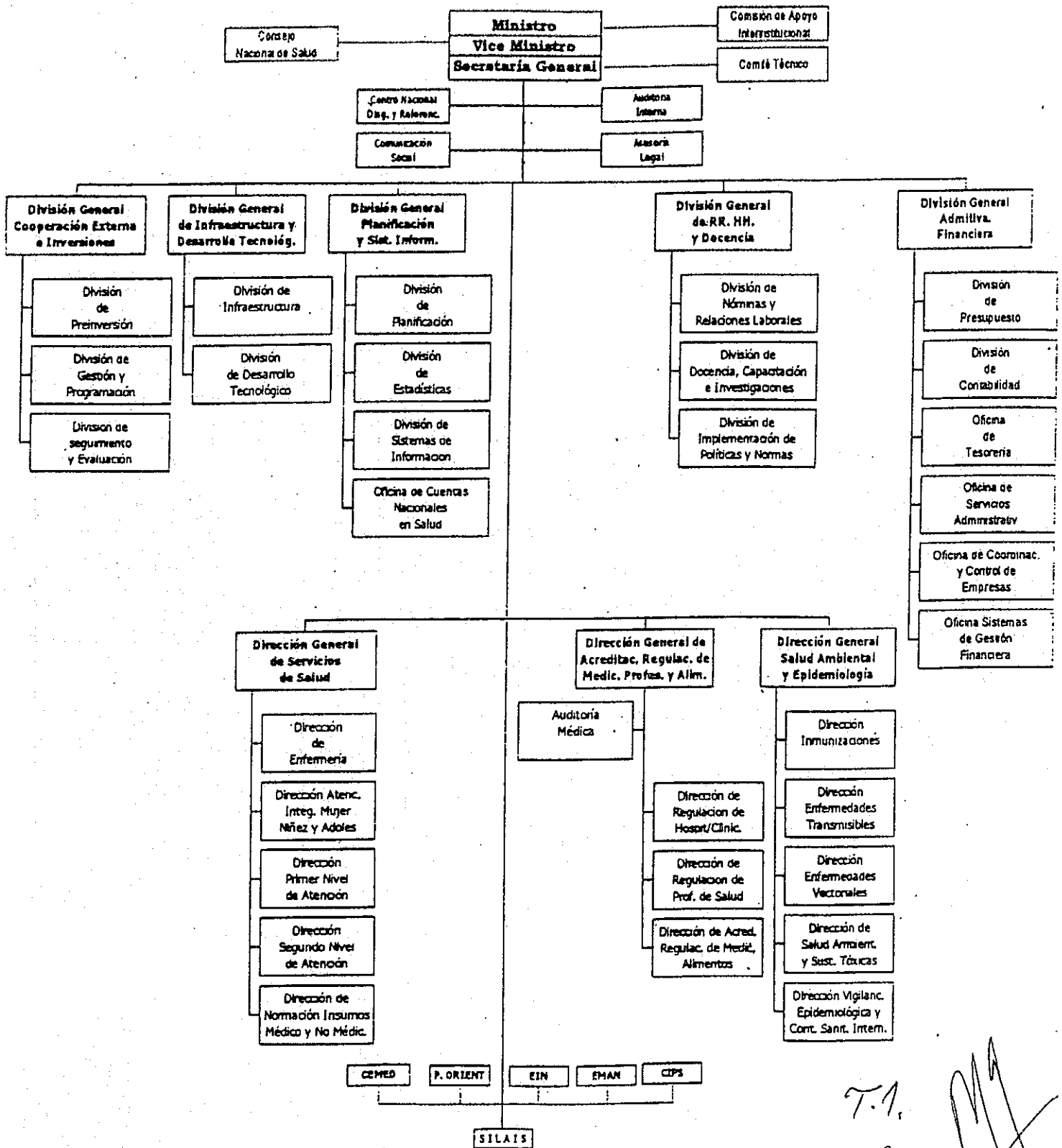
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Ministerio de Salud

Organigrama 99

ANEXO 1



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TABLA 1-1
MEDICAMENTOS PARA ATENCION INTEGRAL AL NIÑO

| <i>Descripción del producto</i> | <i>U.M.</i> | TOTAL MEDICAMENTOS |
|--|-------------|-------------------------------|
| Penicilina Cristalina 1 mill. UI | FAM | 251,700 |
| P. G. Procaínica 800000 UI | FAM | 1,531,600 |
| P.G. Benzatínica 1.2 mill. UI | FAM | 287,400 |
| Amoxicilina 250 mg/ 5 ml | FCO | 16,900 |
| Cloranfenicol succinato Sódico 1 gr. | FAM | 20,200 |
| Gentamicina sulfato 20 mg/ 2 ml | AMP | 102,700 |
| Trimetoprim Sulfametoxazol 40+200 MG /5 ML | FCO | 408,100 |
| Trimetoprim Sulfametoxazol 80+400 MG | TAB | 3,856,700 |
| Nistatina 100,000 UI/ 1 ml | FCO | 64,500 |
| Albendazol 100 mg/ 5 ml Susp. | FCO | 165,700 |
| Sales de Rehidratación Oral | SBE | 2,524,500 |
| Salbutamol Sulf. 2 mg/ 5 ml Jbe. | FCO | 271,500 |
| Salbutamol Sulfato 5 mg/ 1 ml (0,5%) soluc. para nebulizar | FCO | 10,800 |
| Hartman Soluc. 1000 ml | FCO | 79,100 |
| Ritodrina clorhidrato 10 mg/1 ml soluc. | AMP | 4,700 |
| Paracetamol 100 mg / ml | FCO | 632,900 |
| Dexametasona Fosfato sódico 4 mg/ 2 ml | AMP | 34,400 |

T. J.

TABLA 1-2

MEDICAMENTOS PARA ATENCION A PACIENTES EN GENERAL

| Descripción del medicamento | U/M | Cantidad medicamentos a solíc. Gob. Japon |
|--|-----|---|
| Penicilina G procainica 800.000 UI | FAM | 1,600,000 |
| Penicilina G benzatinica 1.200.000 UI | FAM | 120,000 |
| Dicloxacilina 125 mg x 5 ml Susp. | FCO | 35,000 |
| Etilsucc.de Eritromicina 250 mg x 5 ml | FCO | 25,000 |
| Doxiciclina 100 mg | CAP | 485,000 |
| Trimetoprim Sulfametoxazol 80+400 mg | TAB | 2,600,000 |
| Trimetoprim Sulfametoxazol 40+200 mg | FCO | 150,000 |
| Ac. Benzoico + ac. Salicilico 6%+3% | TBO | 320,000 |
| Cloroquina fosfato 250 mg | TAB | 1,600,000 |
| Albendazol 200 mg | TAB | 536,500 |
| Salbutamol Sulf. 2 mg/5 ml Jarabe | FCO | 120,000 |
| Sol. Hartman 1.000 ml | FCO | 110,000 |
| Solución Salina Normal 0.9% 1,000 ml | FCO | 40,000 |
| Agua destilada 5 ml | AMP | 1,000,000 |
| Sales de Rehidratación Oral | SBE | 650,000 |
| Oxitetraciclina oftálmica | TBO | 300,000 |
| Paracetamol (Acetaminofen) 100 mg/ml | FCO | 197,000 |
| Paracetamol (Acetaminofen) 500 mg | TAB | 1,000,000 |

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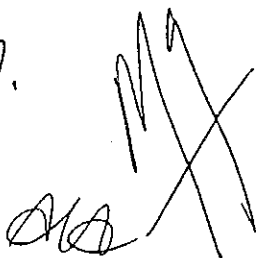


TABLA 2
MICRONUTRIENTES PARA POBLACION INFANTIL

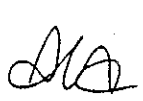

| Descripción del Producto | UM | Cantidades |
|-------------------------------|-----|------------|
| Vitamina A 25,000 UI/ gota | FCO | 17,100 |
| Sulfato ferroso 15 mg/ 0.6 ml | FCO | 3,157,000 |

TABLA 3
INSUMOS Y EQUIPOS PARA INMUNIZACION

| Nombre del producto | Cantidades |
|--|------------|
| Vacuna MMR (unidosis) | 700,000 |
| Vacuna Haemophilus influenzae (unidosis) | 600,000 |
| Jeringas de 0.5 ccx23 Gx 1 (autodestructibles) | 1,300,000 |
| Cajas para destrucción de jeringas | 13,000 |
| Refrigeradoras solares | 30 |

TABLA 4
**NEBULIZADORES PARA ATENCION DE PACIENTES CON
PROBLEMAS RESPIRATORIOS**

| Descripción del producto | U.M. | EQUIPOS |
|-----------------------------------|------|---------|
| Nebulizadores modelo Pronex Turbo | | 42 |

7-9.



SISTEMA DE LA COOPERACION FINANCIERA NO REEMBOLSABLE DEL JAPON

1. Procedimiento de la Cooperación Financiera No Reembolsable del Japón

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

1) 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.

7.7. 

- b) examen de la viabilidad técnica y socio-económica.
- c) confirmación del concepto básico del Plan Optimo 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, y tomando en cuenta que no hay tiempo suficiente para seleccionar la compañía consultora nuevamente, 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 (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.

T. J.
ALA



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 Aprobación

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.

77.

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

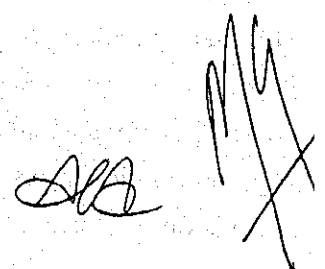
Los productos adquiridos bajo la Cooperación Financiera No Reembolsable no deberán ser reexportados del país receptor.

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 autorizado para el cambio de moneda extranjera 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 (A/P) expedida por el Gobierno del país receptor o la autoridad designada por él.

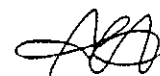
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Medidas necesarias que debe tomar el Gobierno de la República de Nicaragua

El Gobierno de la República de Nicaragua debe tomar las medidas necesarias siguientes, a condición de que la Cooperación Financiera No Reembolsable del Japón sea destinada para el Proyecto.

1. Efectuar el pago de comisiones al banco japonés por sus servicios bancarios basados en el Arreglo Bancario (A/B), en concepto de la Comisión de Aviso de Autorización de Pago (A/P) y la Comisión de Pago.
2. Asegurar el pronto desembarque, exención de impuestos, pronto despacho aduanero en el puerto de desembarque en la República de Nicaragua y pronto transporte interno de materiales u equipos adquiridos bajo la Cooperación Financiera No Reembolsable para el Proyecto.
3. Eximir a nacionales japoneses jurídicos y físicos relacionados con la Cooperación Financiera No Reembolsable, de impuestos internos y otras cargas fiscales que se impongan en Nicaragua con respecto al suministro de los productos y los servicios bajo los contratos verificados.
4. Otorgar a nacionales japoneses, cuyos servicios sean requeridos en conexión con el suministro de los productos y los servicios bajo los contratos verificados, ingreso y estadía en Nicaragua para el desempeño de sus funciones.
5. Proveer de permisos necesarios, licencias y otras autorizaciones para la implementación de la Cooperación Financiera No Reembolsable, según necesidad.
6. Asignar el presupuesto apropiado y capacitar al personal administrativo para la operación y el mantenimiento adecuado y efectivo de los equipos adquiridos bajo la Cooperación Financiera No Reembolsable.
7. Mantener y usar apropiada y efectivamente los equipos adquiridos bajo la Cooperación Financiera No Reembolsable.
8. Sufragar otros gastos necesarios, a excepción de aquellos gastos a ser cubiertos por la Cooperación Financiera No Reembolsable dentro del alcance del Proyecto.



7.7.


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