

Study Report
on
The Project for Polio Eradication
in
The Islamic Republic of Pakistan

April 1996

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PREFACE

In response to a request from the Government of the Islamic Republic of Pakistan, the Government of Japan decided to conduct a basic design study on the Project for Polio Eradication and entrusted the Japan International Cooperation Agency (JICA) to conduct the study with the assistance of the Japan International Cooperation System (JICS).

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 Islamic Republic of Pakistan for their close cooperation extended to the team.

April 1996

Kimio Fujita
President

Japan International Cooperation Agency

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text notes that without clear documentation, it becomes difficult to track expenses, revenues, and other critical data points.

2. The second section focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions can significantly improve the efficiency and accuracy of data management. The author suggests that organizations should invest in reliable systems to ensure that their records are secure, accessible, and easy to update.

3. The third part of the document addresses the challenges associated with data storage and security. It points out that as the volume of data grows, the risk of data loss or unauthorized access also increases. The text recommends implementing robust security protocols, such as encryption and regular backups, to protect sensitive information.

4. The fourth section discusses the importance of data privacy and compliance with relevant regulations. It notes that organizations must be aware of the legal requirements governing the collection, storage, and use of personal data. The author advises that clear policies and procedures should be established to ensure that all data handling practices are in full compliance with applicable laws.

5. The fifth part of the document explores the benefits of data analysis and reporting. It explains that by regularly reviewing and analyzing their records, organizations can gain valuable insights into their performance and identify areas for improvement. The text suggests that data-driven decision-making can lead to more effective strategies and better overall outcomes.

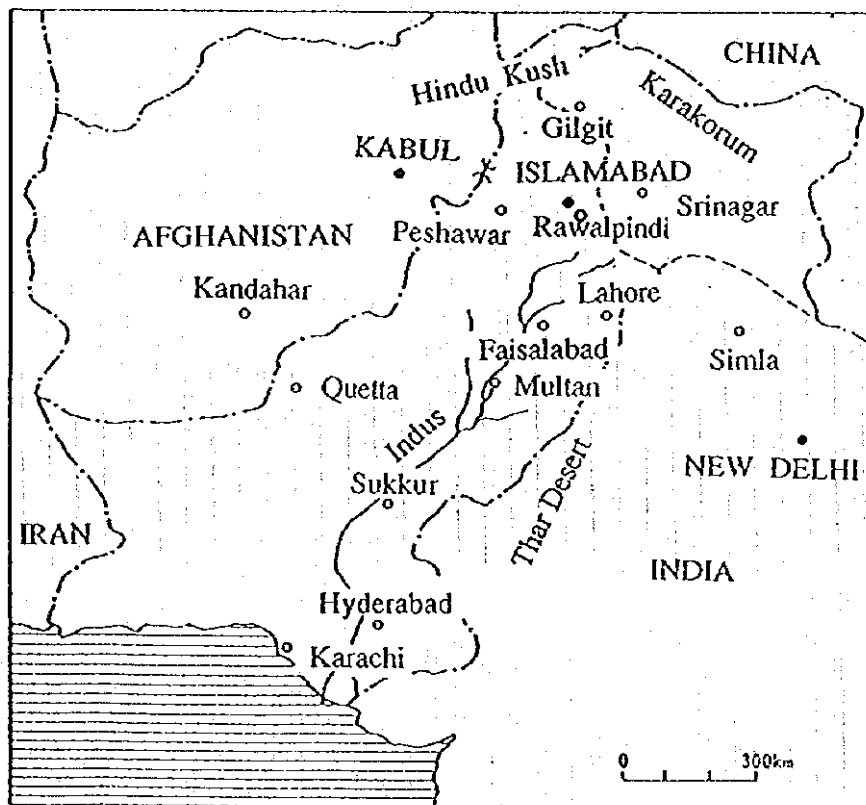
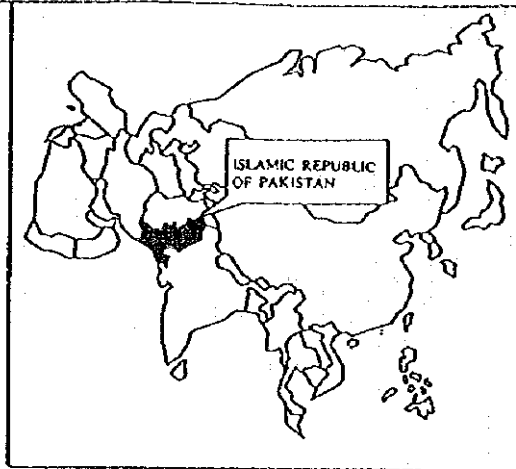
6. The sixth section covers the importance of data backup and recovery. It emphasizes that having a reliable backup strategy is crucial to prevent data loss in the event of a system failure or disaster. The author recommends testing backup procedures regularly to ensure that data can be restored quickly and accurately.

7. The seventh part of the document discusses the role of data in strategic planning. It notes that accurate and up-to-date records provide a solid foundation for developing long-term goals and strategies. The text suggests that organizations should use their data to identify trends, anticipate future needs, and make informed decisions about their future direction.

8. The eighth section addresses the importance of data governance. It explains that data governance involves establishing clear roles and responsibilities for data management across the organization. The author suggests that a strong data governance framework is essential for ensuring the quality, integrity, and security of an organization's data assets.

9. The ninth part of the document discusses the importance of data literacy. It notes that as data becomes increasingly central to business operations, it is essential for employees to have a basic understanding of data management and analysis. The text suggests that organizations should invest in training and education to help employees develop the skills needed to work effectively with data.

10. The final section of the document provides a summary of the key points discussed. It reiterates the importance of accurate record-keeping, the use of technology, data security, privacy, analysis, backup, strategic planning, and data governance. The author concludes by encouraging organizations to take a proactive approach to data management to ensure long-term success and growth.

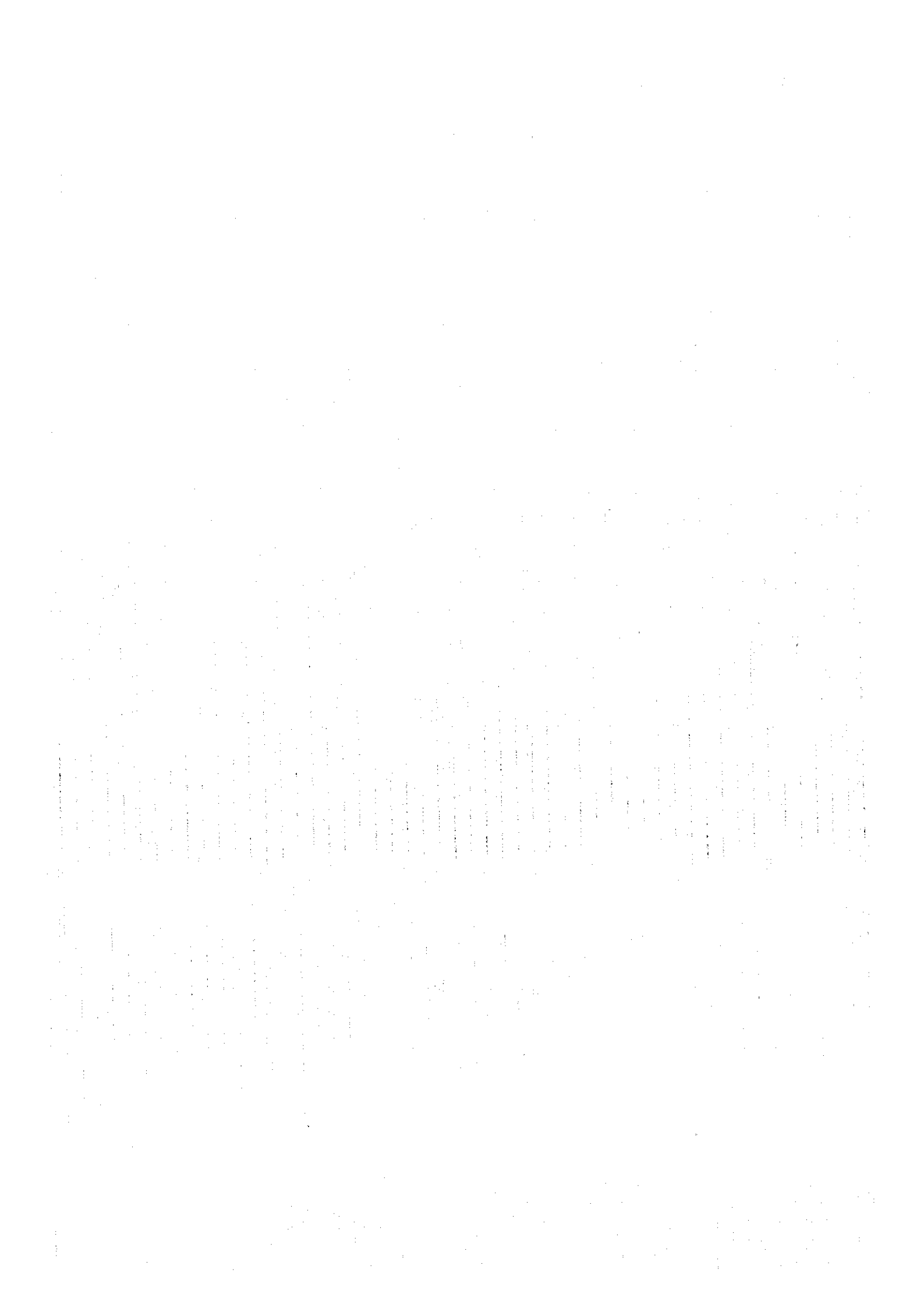


Location Map



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Chapter 1 Background of the Project

The Islamic Republic of Pakistan (hereinafter referred to as Pakistan) is a country with a particularly high incidence of polio, and indeed 22% of all reported cases of polio throughout the world in 1993 occurred in Pakistan. The World Health Organization (WHO), at its general assembly of May 1988, adopted a resolution to eradicate polio from the face of the earth by 2000.

In line with this, the West Pacific Regional Office of WHO adopted a resolution to eradicate polio from the West Pacific region by 1995, and it has been advancing programmes to eliminate polio in the six countries within the said region where this objective has yet to be achieved, namely China, the Philippines, Vietnam, Laos, Cambodia, and Papua New Guinea. The South Asia region including Pakistan has been selected as the next target area and, in recent years, national immunization days (NID) have been planned and implemented within the countries of the said region. In response to the above-mentioned activities, the Government of Pakistan has made the eradication of polio one of its policy aims and it has used 148,6000 schools, mosques and stations, etc. throughout the whole country to implement NID for children and infants of five years and under. The first round of NID were carried out in April and May 1994, the second round in April and May 1995, and the third round in December 1995 and January 1996. The vaccination rates in each round of NID have been reported as 95.7% and 96.7% in the first round, 97.6% and 98.9% in the second round, and 103.8% and 105.0% in the third round. (The reason given for why the vaccination rate exceeded 100% is that the people other than the target population of five years and under also received vaccinations). As a result of these efforts, reported cases of polio fell from more than 1,000 before the NID to 460. Despite these efforts, however, in international terms, the rate of incidence still remains high.

The following factors are considered to lie behind the unsatisfactory results: i) The NID were held during hot periods (NID are normally held in winter when the risk of infection is lower), ii) The quality of vaccines was poor due to inappropriate methods of

cold chain equipment maintenance,iii) Polio patients were not discovered early enough,iv) The surveillance system was not sufficient.The Government of Pakistan estimates that NID will need to be implemented at least another three times in order to wipe out polio, and this view is also held by WHO and UNICEF (United Nations Children's Fund). The fourth round of NID has been set for November and December 1996, and the Pakistan Ministry of Health and WHO estimate that approximately 61,548,000 doses of OPV (oral polio vaccine) will be required. Of these, the necessary budget has been secured for 44,160,000 doses, which means that a shortage of approximately 17,388,000 doses will arise. It is against this background that the Government of Pakistan requested the Government of Japan to provide grant aid for the procurement of the OPV (17,388,000 doses, see Note) it is estimated will be lacking in the fourth round of NID. (Note: One dose is a unit of vaccine inoculation and refers to the amount administered to one person in one immunization.)

Chapter 2 Contents of the Project

2-1 Objectives of the Project

One of the specific targets raised within the Eighth Five Year Plan (starting in April 1993) by the Government of Pakistan is the implementation of complete immunization of mothers and children. The objective of the Project here is to aid the procurement of OPV it is estimated will be lacking in the fourth round of NID which is planned for implementation at the end of 1996 as part of the EPI (Expanded Programme on Immunization), which is being advanced with the ultimate objective of eradicating polio from Pakistan by 2000.

2-2 Basic Concept of the Project

As was mentioned earlier, 61,548,000 doses of vaccine will be required in the fourth round of NID planned for implementation in November and December 1996. It was originally estimated that the target population for immunization would be 22,080,000 people, however, in view of the subsequent rate of population growth and vaccination rates (103.8% and 105% in the previous round of NID), this has been revised to 23,138,000 people.

	Target Population (million people)	Vaccination Frequency	Quantity of Vaccine	Loss Ratio	Total Vaccine Use (million doses)
Current request	23.138	2	46.277	1.33	61.549

Although the Government of Pakistan has secured enough funds to purchase 44,160,000 doses of the required vaccine, it has not been able to secure the budget needed to purchase the remaining doses. For this reason, the Government of Japan will provide grant aid for procurement of the remaining 17,388,000 necessary doses.

NO.	Equipment	Quantity	Rate (yen)	Total Cost (yen)
1	Polio vaccine	17,388,000	225.3/20 doses	195,875,820

2-3 Basic Design

2-3-1 Design Concept

As was mentioned previously, satisfactory results were not achieved in the first three rounds of NID for the following reasons:

- i) The NID were held during hot periods (NID are normally held in winter when the risk of infection is lower),
- ii) The quality of vaccines was poor due to inappropriate methods of cold chain equipment maintenance,
- iii) Polio patients were not discovered early enough,
- iv) The surveillance system was not sufficient.

Currently, however, the implementation setup is being strengthened with the help of CDC (Center for Disease Control) in America and WHO and, in accordance with a recommendation made by WHO, the implementation period has been moved to the cooler months of November and December. Because it appears that the fourth round of NID will be implemented using methods that learn from the experience of the previous three rounds, it is thought that no particular problems should occur during the implementation.

Regarding the purchase price of OPV, it costs 239 yen per dose if procured in Japan, however, if it is procured through UNICEF, because it is purchased by international tender, the price is cheap at 0.75 US \$ per dose. Moreover, because the amount required is so large, it would be physically impossible to procure it all in Japan, where vaccine manufacturing volumes are low. Furthermore, in cases where private trading companies directly purchase vaccine from vaccine makers in Europe and America, the price balloons to 10 times the UNICEF price. In view of these circumstances, the vaccine shall be purchased via UNICEF, as was also the case in past Polio Eradication Programmes conducted by the Government of Japan in China and the three countries of Indochina.

2-3-2 Basic Design

(1) Overall Plan

Implementation of the NID has been set for November and December 1996. The OPV needs to be brought in to the National Institute of

Health in Islamabad one month before the start of the NID, and it must be delivered for storage to every district stores throughout the country one week before the start. Because the total quantity will be huge at 17,388,000 doses and this must be stored by refrigeration or freezing, close cooperation will have to be maintained with both the Government of Pakistan and UNICEF.

(2) Equipment Plan

Design considerations regarding the Project equipment are as described below.

OPV: Oral Polio Vaccine

0.05 ml of the liquid vaccine is taken orally at a time. Compared to injected vaccine, OPV has the advantage that the antibody is maintained semi-permanently and, even if wild poliovirus should enter the intestines, its infection and reproduction will be prevented. This method of vaccination is adopted as normal in almost all countries. In the frozen state (-20°C or less), the vaccine can be preserved for approximately two years, while in the refrigerated state ($4\sim 12^{\circ}\text{C}$), it can be stored for approximately 30 days.

Chapter 3 Implementation Plan

3-1 Implementation Schedule

Following Cabinet approval of the Project by the Government of Japan, Japan and Pakistan will conclude the Exchange of Notes (E/N), and the Project will then enter the implementation stage.

3-1-1 Implementation Schedule

Overall period (from E/N to handing over)	: 5 months
From E/N to binding of contractor contracts	: 0 months
Delivery period (from contractor contracts to handing over)	: 4 months

The implementation schedule of the Project can be roughly divided into the detailed design, procurement and delivery (transportation of vaccines), and handing over. Four months will be required for the procurement, delivery and handing over.

The main work areas involved in each stage of the implementation schedule are described below.

1) Detailed Design Work

Following the conclusion of the E/N, the consultant and UNICEF will carry out the procurement work, acting for the Government of Pakistan.

2) Equipment Transportation

The contract equipment supplier of UNICEF will air transport the vaccines from the UNICEF equipment procurement division in Copenhagen, Denmark to Pakistan.

3) Equipment Handing Over

After the vaccines have been transported over land by the Government of Pakistan to the central collection point, the UNICEF equipment supplier will inspect the quality and quantity of the vaccines and then hand them over.

3-1-2 Obligations of Recipient Country

- 1) To ensure the prompt unloading and passage through customs of the procured equipment in Pakistan, and to bear any expenses that arise from this work.
- 2) Following unloading of the equipment at the airport in Pakistan, to transport it over land and bear the costs that arise from this.
- 3) To ensure that the vaccine is stored in good condition at a suitable site.
- 4) To secure a sufficient budget and the staff necessary to properly utilize and maintain the equipment.

3-1-3 Special Note

Past Polio Eradication Programmes (in China and the three countries of Indochina) that have been conducted with grant aid have been implemented in close cooperation with UNICEF in consideration of the price advantage and procurement capacity offered by the said organization. In recent times, however, concern has come to be raised that UNICEF may suffer losses due to the rapid depreciation of the yen. Thus, in order to avert this exchange rate risk, UNICEF and the Ministry of Foreign Affairs have agreed in discussions to bind a contract whereby an extra 25% is added on to the equipment price and, when it comes to the time of payment, to abide by the effective price that exists at that time. Thus, for the purposes of the Project, 25% has been added to all rates (FOB).

3-2 Operation and Maintenance Plan

The procured polio vaccine is being provided to make up for the shortage that is expected to occur in the implementation of the fourth round of NID to be held in November and December 1996 and, because it appears that the experiences of the previous three rounds of NID will be put to use on this occasion, it is considered that no particular problems will occur.

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

1) Validation of Appropriateness

In confirming the appropriateness of the Project, the following areas were validated.

Item	Results of Validation
Compatibility with Superior Programmes	As part of the drive to improve mother and child health services, which is one of the targets raised within the Eighth Five Year Plan, the EPI aims to eradicate polio (the incidence rate of which is particularly high in Pakistan) by 2000, and the Project here is in line with this objective.
EPI Implementation Conditions	Polio NID have been implemented three times in the past and, in order to raise the effects of this even more, the fourth round of NID is to be implemented in November and December 1996.
Appropriateness of Requested Equipment	Polio vaccine: the NID are a major undertaking involving the simultaneous administration of polio vaccines throughout the whole country, however, the fiscal circumstances of the Government of Pakistan do not allow it to secure all the vaccine that is required, and this is why it has requested the Government of Japan to provide the lacking portion. Because the effectiveness of the NID would seriously decline if all the target population were not immunized at the same time, it is absolutely essential that the necessary amount of vaccine be secured.

2) Beneficial Effect

Pakistan has been conducting NID with polio vaccine since 1994 and, as a result, the reported number of polio cases was more than halved from more than 1,000 before implementation to 460 in fiscal 1995. It is envisaged that Project implementation will contribute to a further dramatic fall in the incidence of polio in Pakistan, and it is thought that the continued implementation of the NID will make the eradication of polio (a national target) a much more realistic possibility. Moreover, it is anticipated that the Pakistan side will incorporate the recommendations for improvement from WHO and UNICEF and the lessons it learned in the previous three rounds of NID in

making the fullest use of the Project equipment.

In consideration of the above points, it is believed that aid of the Polio Eradication Programme by the Government of Japan will greatly contribute to improving the public health situation in Pakistan.

4-2 Recommendation

In view of the fact that the Project can be expected to greatly benefit EPI activities in Pakistan and thus make a huge contribution to widely promoting the health of the citizens of the said country, it is considered appropriate that the Project be implemented through grant aid. Moreover, with respect to the operation and management of the Project, the Pakistan side possesses ample staff and funds and no problems can be foreseen. Having said that, implementation of the Project could be made smoother and more effective if the following points were improved and acted upon.

1) Because multiple ministries and departments in Pakistan are responsible for the collection of information relating to medical and health conditions, the Ministry of Health does not possess a unified body of information, and the federal government is hardly able to grasp the actual state of progress of the NID on the provincial level. To ensure the effective implementation of NID, the implementing agency needs to have central control over necessary information, and a setup for distributing the vaccines and equipment needs to be established.

2) When distributing vaccines to the various parts of the country, rapid transportation and proper temperature control are necessary. Therefore, in addition to transportation vehicles, strengthening needs to be carried out with respect to refrigerators for long-term storage and cold boxes for short-term storage.

The Government of Pakistan has requested that grant aid be provided to procure cold chain equipment, citing the following reasons:

i) Much of the existing cold chain equipment has exceeded its useful

life and is in need of replacement,

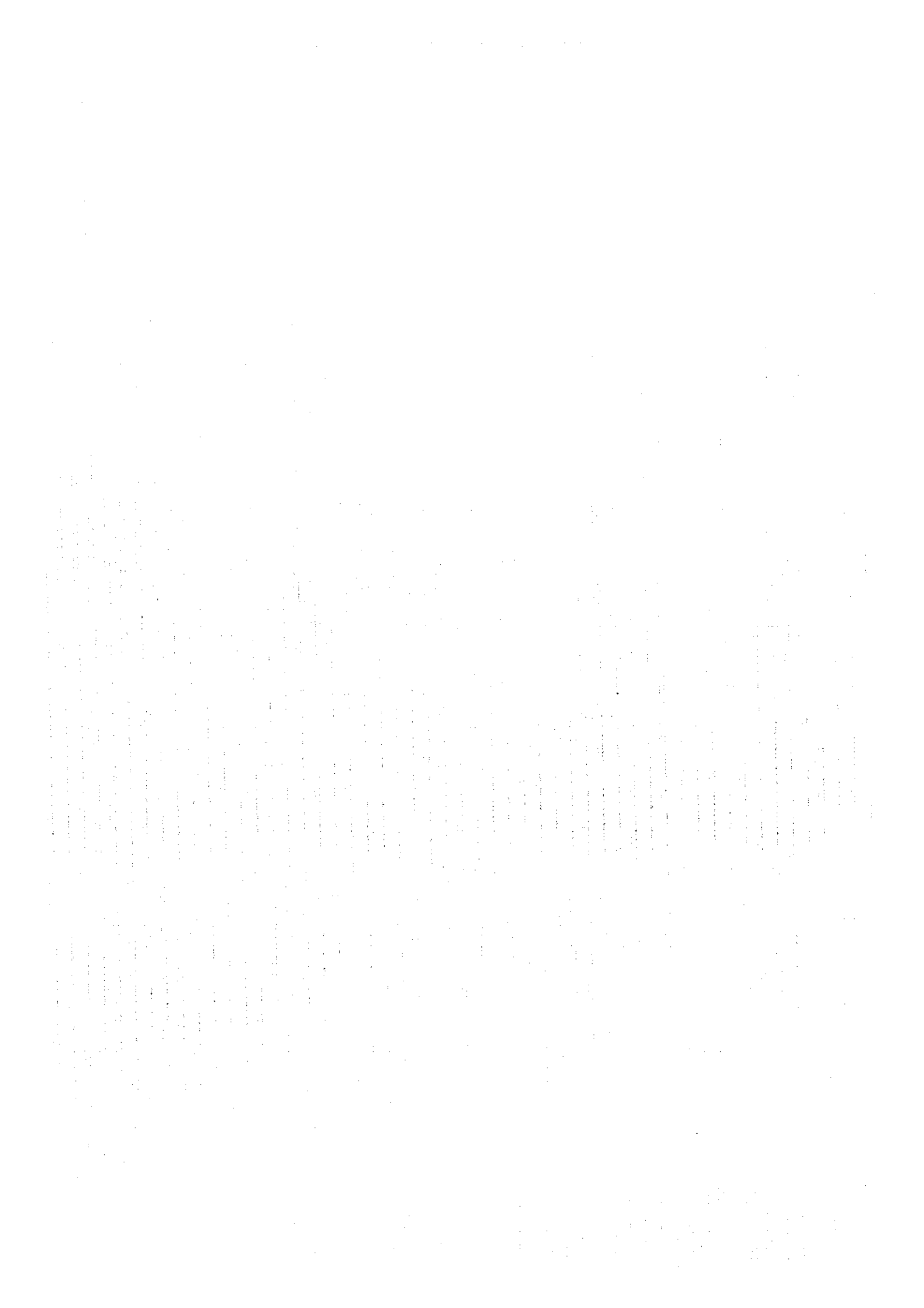
ii) More than 20% of equipment in some districts (Punjab Province) suffered damage caused by flooding in 1995,

iii) At the grass roots level, especially during the winter, ice is not available and general public is requested to provide ice voluntarily from their domestic freezers. At the same time, domestic coolers being used at homes are also acquired on loan from the general public,

iv) Establishment of a reverse cold chain for delivering samples to diagnostic laboratories is essential, in order to strengthen surveillance.

However, during the Project Formation Survey that was conducted in March 1996, because it was found that there are sufficient quantities of cold chain equipment in inventories and that equipment is scheduled to be procured from other donors, it is judged that the existing cold chain equipment will be able to comfortably cope with the NID planned for the end of 1996. Regarding the matter of the future strengthening and expansion of the cold chain, it is thought that the Government of Pakistan will first need to accurately understand the conditions surrounding existing equipment, carry out inventory management, and make necessary improvements on a timely basis.





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