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**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR PREVENTION AND
CONTROL OF HIV/AIDS TRANSMISSION
IN
THE SOCIALIST REPUBLIC OF VIETNAM**

July 1999

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**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
INTEM CONSULTING,INC. (INTEM)



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PREFACE

In response to a request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct a basic design study on the Project for the Prevention and Control of HIV/AIDS Transmission, and entrusted the study to the Japan International Cooperation Agency(JICA).

JICA sent to Vietnam a study team from 17 March to 27 April, 1999.

The team held discussions with the officials concerned of the Government of Vietnam, and conducted a field survey at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Vietnam in order to discuss a draft basic design, and as this result, the present report was finalized.

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

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

July 1999



Kimio Fijita
President

Japan International Cooperation Agency

July 1999

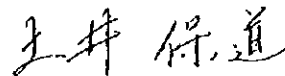
LETTER OF TRANSMITTAL

We are pleased to submit to you the basic design study report on the Project for the Prevention and Control of HIV/AIDS Transmission in the Socialist Republic of Vietnam.

This study was conducted by INTEM Consulting, Inc. under a contract to JICA, during the period from 5 March to 24 August, 1999. In conducting the study, we have examined the feasibility and rationale of the Project with due consideration to the present situation of Vietnam and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the Project.

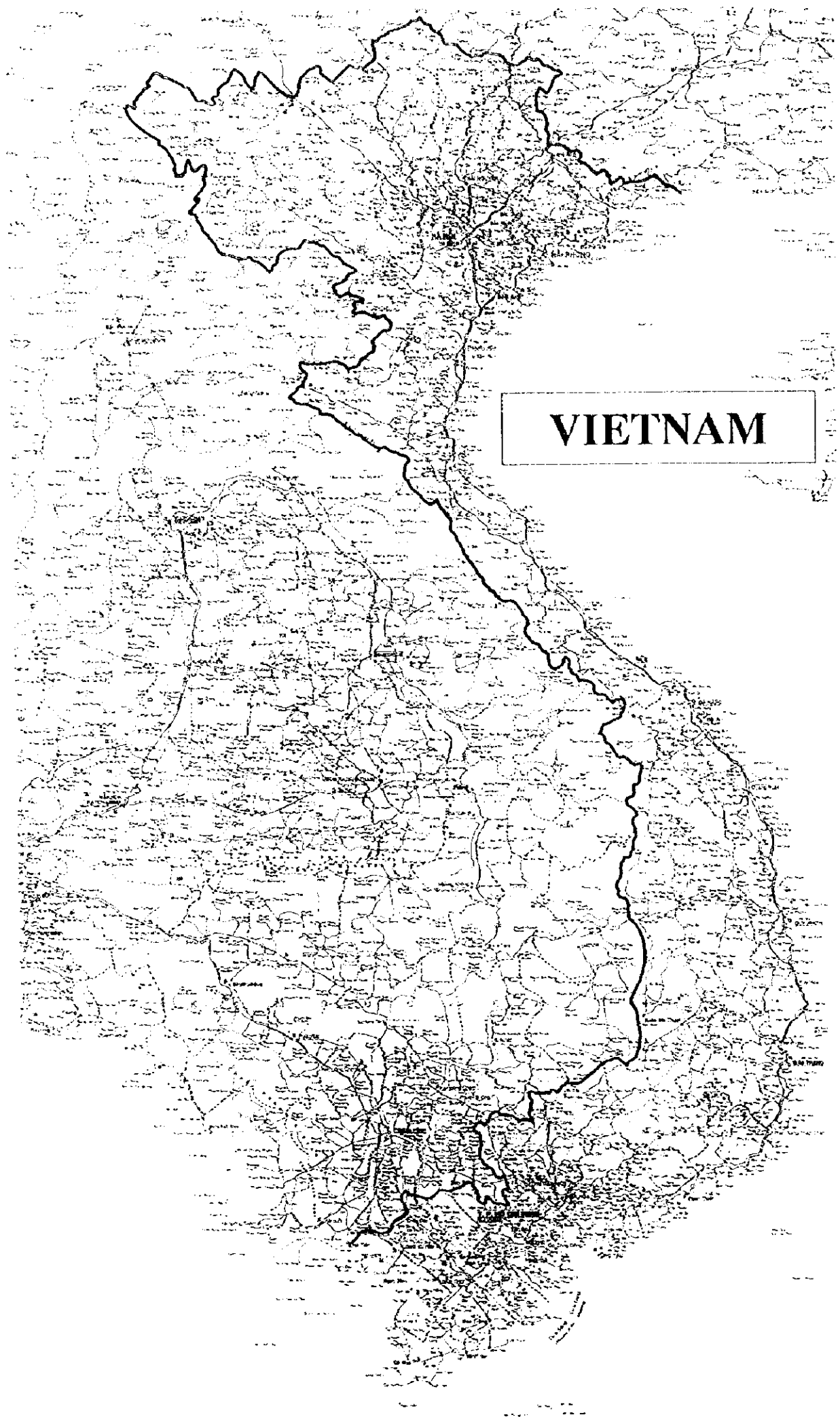
Very truly yours,



Yasumichi Doi
Project Manager
Basic design study team on
The Project for the Prevention and
Control of HIV/AIDS Transmission in
the Socialist Republic of Vietnam
INTEM Consulting, Inc.

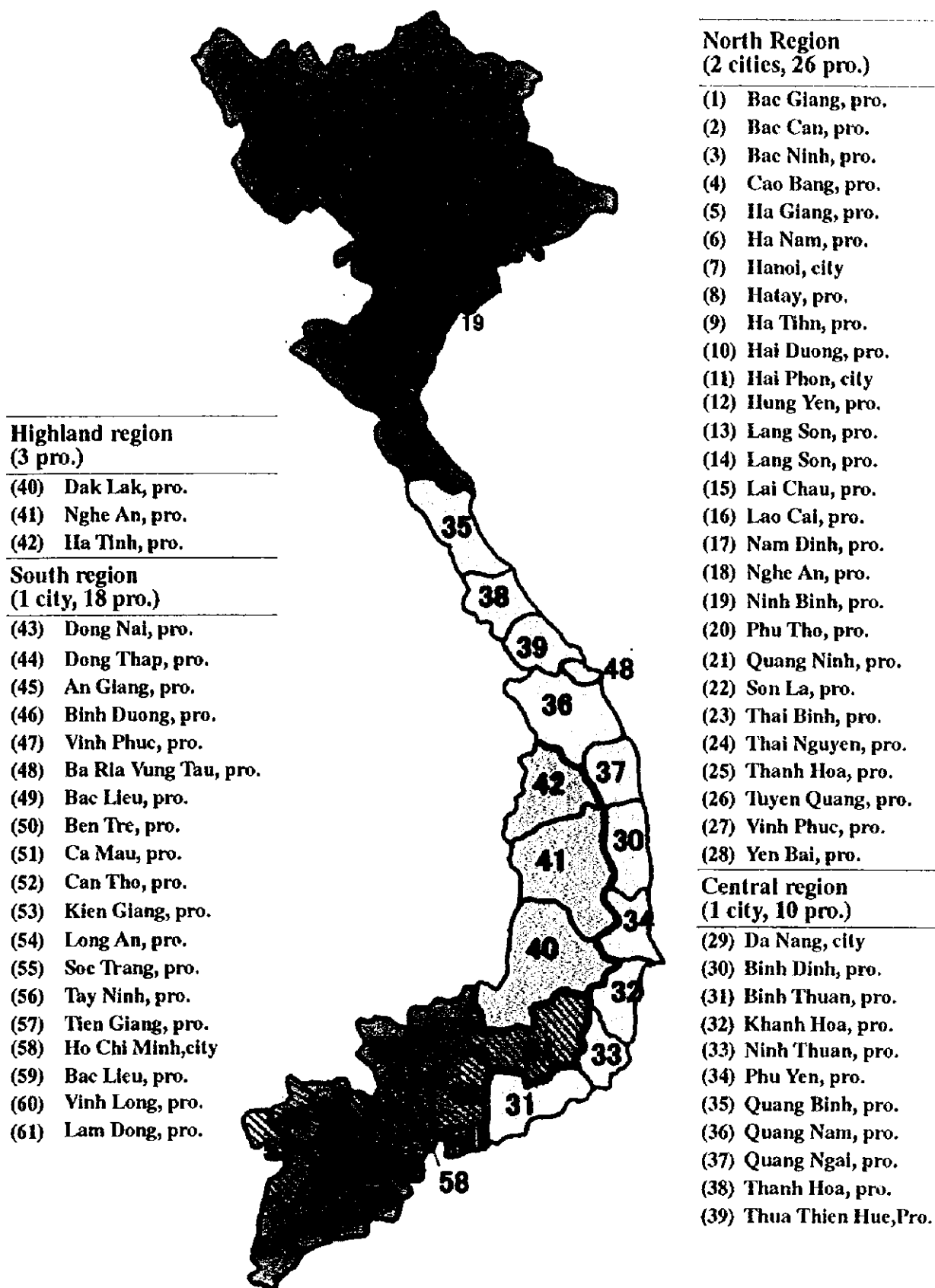


VIETNAM



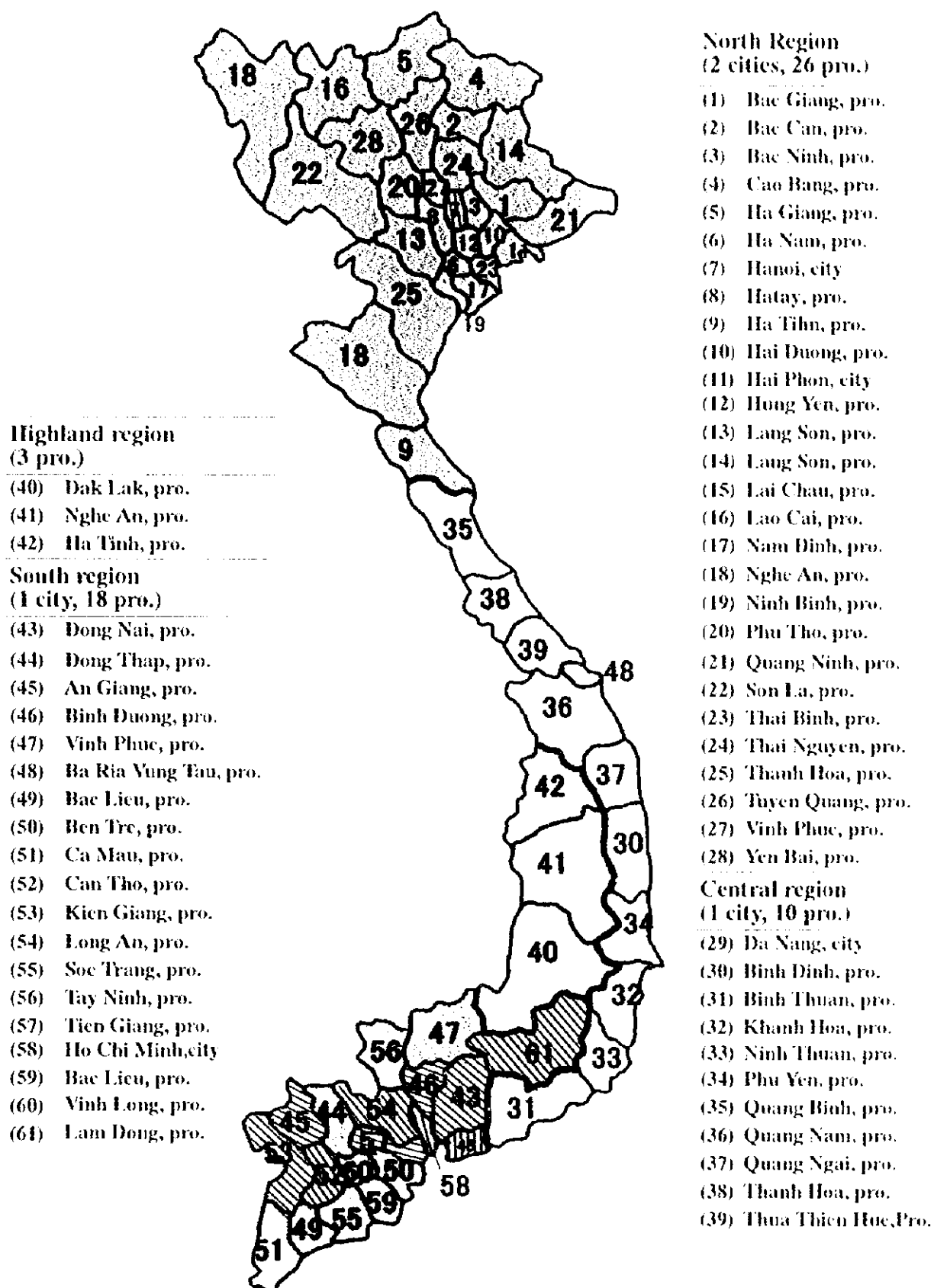
VIETNAM

Divisional Areas governed by the Ministry of Health



The areas screen-toned are the provinces/cities in the Project.

Divisional Areas governed by the Ministry of Health



The areas screen-toned are the provinces cities in the Project.

Abbreviation

AIDS	Acquired Immune Deficiency Syndrome
CSW	Commercial Sex Worker
ELISA	Enzyme Linked Immune Sorbent Assay
HIV	Human Immune Deficiency Virus
IDU	Intravenous Drug User
IEC	Information, Education and Communication
MOH	Ministry of Health
MPI	Ministry of Planning and Investment
NAC	National AIDS Committee
NIHE	National Institute of Hygiene and Epidemiology
NIHBT	National Institute of Hematology and Blood Transfusion
PAC	Provincial AIDS Committee
PA	Particle Agglutination
PCR	Polimerase Chain Reaction
STD	Sexually Transmitted Disease
UNAIDS	United Nations Program on HIV/AIDS
UNDCP	United Nations Drug Control Program
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Preface
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Map of Vietnam
Abbreviation

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Chapter 1 Background of the Project

Chapter 1 Background of the Project

1-1 HIV/AIDS situations in Vietnam

HIV/AIDS is presently one of the most serious social problems in Vietnam. The first HIV patient in Vietnam was discovered in Ho Chi Minh City in 1990. Until 1993, there was no rapid increase of HIV patients. However, after that, the number of HIV patients swiftly increased along with economic development and more active movement of people.

As of February 1999, HIV patients were found in all provinces reaching a count of 12,235 as shown in Table 1-1, per the Ministry of Health. It is forecasted that the number would keep increasing and would reach more than 20,000 by the end of the year 2000. Thus, rapid increase of HIV is a major concern.

Table 1-1 HIV/AIDS patients in provinces/cities (February 1999)

No	Province/City	No. of Patient	No	Province/City	No. of Patient
1	Ho Chi Minh City	2,646	32	Hatay	57
2	Quang Ninh	1,539	33	Ben Tre	57
3	An Giang	659	34	Thua Thien Hue	54
4	Khanh Hoa	578	35	Bac Lieu	49
5	Ha Noi	484	36	Ninh Thuan	43
6	Lang Son	470	37	Phu Yen	42
7	Hai Phong	495	38	Nam Dinh	38
8	Dong Nai	385	39	Kon Tum	35
9	Can Tho	316	40	Soc Trang	34
10	Dak Lak	218	41	Hung Yen	31
11	Kien Giang	198	42	Quang Nam	30
12	Lam Dong	188	43	Hoa Binh	30
13	Bac Ninh	186	44	Binh Phuoc	28
14	Dong Thap	168	45	Cao Bang	33
15	Binh Thuan	164	46	Thai Binh	28
16	Da Nang	165	47	Phu Tho	22
17	Hai Duong	162	48	Ha Nam	18
18	Binh Dinh	155	49	Thanh Hoa	15
19	Nghe An	147	50	Son La	147
20	Vinh Phuc	134	51	Ha Tinh	14
21	Thai Nguyen	126	52	Yen Bai	12
22	Ba Ria Vung Tau	122	53	Ninh Binh	11
23	Bac Giang	141	54	Lao Cai	8
24	Tien Giang	111	55	Quang Ngai	7
25	Ca Mau	111	56	Lai Chau	7
26	Vinh Long	102	57	Quang Binh	6
27	Tay Ninh	85	58	Quang Tri	4
28	Gia Lai	73	59	Tuyen Quang	4
29	Long An	72	60	Ha Giang	2
30	Binh Duong	63	61	Bac Can	2
31	Tra Vinh	62		Others(unknown place)	975
				Total	12,235

*Provinces/cities in gray are the target in the Project

It is commonly said that HIV/AIDS prevails with drugs and prostitution. In fact, according to the result of sentinel survey, 65 % of the patients are drug users and 4% are CSWs.

In particular, majority of the drug users infected with HIV are poor members of the society who cannot afford to buy injection from drug dealers which they share. Thus, the risk of HIV infection becomes higher.

CSWs try to find customers in restaurants and discos. They need to work to be able to help increase the family income. Consequently, the increasing income gap caused by economic development, has indirectly promoted the prevalence of HIV/AIDS.

In addition, there is a trend that HIV/AIDS spreads among people in military service and expectant mothers which simply means that HIV/AIDS spread not only among high risk groups but also among ordinary people. For the young generation, social and cultural changes are bases for their conceptual transition to practice unprotected sexual intercourse and drug use. As a matter of fact, it is reported that more teenagers assent abortion at medical centers and carry drugs in schools.

1-2 Measures for HIV/AIDS prevalling in Vietnam

The Government of Vietnam was seriously engaged in preventing and controlling HIV/AIDS in early times. The National AIDS Protection Committee was established in 1990, when the first HIV patient was discovered in Vietnam. Then, in 1994, the members of Committee established the national medium term plan called "Medium Term Plan For Prevention and Control of HIV/AIDS in Vietnam 1994-1995 and 1996-2000".

The plan included 7 main guidelines shown below. These guidelines have been succeeded up to present.

- (1) Implementation of IEC
- (2) Epidemiological surveillance and HIV screening
- (3) Prevention of sexual transmission
- (4) Prevention of transmission through blood and blood products
- (5) Management and care of HIV cases and AIDS patients
- (6) Program management
- (7) Monitoring and evaluation of the program

In particular, according to “(6) Program management”, a concrete action was taken. The National AIDS Prevention Committee of the Ministry of Health was placed under the Prime Minister’s office the name was changed to National AIDS Committee (NAC). This became the permanent office for the committee and the national system for the prevention of HIV/AIDS.

NAC promoted activities according to the medium term plan. However, the Ministry of Health played the center role in HIV/AIDS prevention/control activities, except IEC, since the activities basically belong to health and medication matter. Recently, the AIDS Division was established by the Ministry of Health, to take the place of NAC which is going to be the center for HIV/AIDS prevention and control activities. In fact, in the project proposal to the Japanese government, this AIDS Division is mentioned as an implementing organization.

HIV/AIDS prevention and control activities which the Government of Vietnam has done are as follows:

(1) IEC activities

Enlightenment and education for HIV/AIDS have been prioritized by the government. The Ministry of Health and the Ministry of Culture and Information, broadcast public advertisement and enlightenment program for HIV/AIDS prevention through mass-media like national & local television and national and local radio networks.

Schools lectures and seminars for HIV/AIDS prevention are held for local people by the province/city health departments and information departments. Materials, pamphlets, and information magazines are also prepared for the lectures and seminars.

Local government in each province/city is also keen to promote IEC activities. The government respectively has AIDS committee to implement seminars and enlightenment & education activities by itself.

The methods, targets, and contents in IEC activities are varied in Vietnam. Those activities have been positively done. In fact, the effect of IEC is coming to light. According to the survey in 1995, it was reported that 95% of people answered they have some knowledge regarding HIV/AIDS prevention.

(2) Sentinel surveillance and Screening

As a method to collect HIV infection data, the following could be considered.

- Clinical testing
- Voluntary testing
- Sentinel surveillance testing

Among the testing methods mentioned above, sentinel surveillance is the most appropriate in analyzing HIV/AIDS prevailing over the country. This is because clinical testing is done only for patients who have some disease symptoms while voluntary testing is subject to personal intention, therefore it is difficult to obtain general data using such methods.

Since 1994, the sentinel surveillance was conducted in 6 provinces/cities as test cases. Then, the surveillance was extensively done in 20 provinces/cities. In 1999, 10 provinces/cities are added. It will soon be conducted in 30 provinces/cities out of 61 provinces/cities in the whole country. In the near future, it is planned that the surveillance will be done in all provinces/cities.

The target group for the sentinel surveillance are drug users, CSWs, venereal disease patients, tuberculosis patients, expectant mothers, and newly employed military people. The surveillance is regularly (twice in a year) done for these groups.

In addition, even in provinces/cities where the sentinel surveillance is not regularly done, testing institutions and trained staff are placed and the setup for clinical, volunteer test and screening test for blood transfusion is established.

Data collected from the sentinel surveillance and other tests are systematically reported to the Ministry of Health through subordinate organizations in provinces/cities.

PA is presently the most common testing method in Vietnam, and ELISA, RAPID, and Westernblot were already introduced in some provinces/cities. It is regulated by the guidelines of the Ministry of Health that final judgment for HIV infection (+/-) need to be made by testing 3 times using various testing methods. Therefore, procuring ELISA system is becoming more important for center testing institutions in provinces/cities.

Table 1-2 Target provinces/cities for Sentinel Surveillance

No.	Area	Province/city	1990	1998(add)	1999(add)
1	North	Hanoi	○		
2		Hai Phong	○		
3		Lang Son		○	
4		Lai Chau			○
5		Lao Cai		○	
6		Thai Nguyen		○	
7		Quang Ninh			○
8		Thai Binh			○
9		Nam Dinh		○	
10	Mid	Da Nang	○		
11		Thanh Hoa		○	
12		Nghe An			○
13		Ha Tinh		○	
14		Thua Thien Hue		○	
15		Binh Dinh		○	
16		Khanh Hoa	○		
17		Dak Lak		○	
18	South	Ho Chi Minh City	○		
19		Lam Dong			○
20		Binh Duong		○	
21		Binh Thuan			○
22		Tay Ninh			○
23		Dong Nai		○	
24		Long An			○
25		An Giang	○		
26		Tien Giang			○
27		Can Tho		○	
28		Kien Giang		○	
29		Ca Mau			○
30		Ba Ria Vung Tau		○	

Province/city in gray are targets in the Project

Quote : the Ministry of Health

(3) Prevention of sexual transmission

STD patients likely have internal injuries at mucous membrane of genitals, therefore transmission of sperm and mucus through blood easily happens. As a result, it is said that HIV/AIDS infection rate for STD patients are 8 to 30 times higher than ordinary people. Cure for STD is a cheap and effective method for HIV/AIDS prevention. In this regard, detecting STD in early stage is considered as an important measure for HIV/AIDS prevention, and the skin and venereal disease center equipped with testing facilities, is being developed in each province/city. In the centers, STD patients are cured, testing for HIV/AIDS is done, and condom is provided. Moreover, education & enlightenment seminars are held for HIV/AIDS prevention.

(4) Prevention of transmission through blood and blood products

It is required by the guideline of the Ministry of Health that the blood for transfusion needs to be screened and checked for 5 infectious diseases, HIV, viral hepatitis type A, viral hepatitis type B, malaria, and syphilis. In Vietnam, there are blood transfusion centers in all provinces/cities and they are supposed to have all screening tests. However, because of lack of testing chemicals, equipment, and poor skills of staff, the screening process is not fully executed. In order to ensure safety of blood in these centers, the Ministry of Health has made lots of efforts to develop facilities & equipment, training technical staff, and ensuring financial budget to support activities.

(5) Management and care of HIV cases and AIDS patients

Because cure or treatment of HIV/AIDS is not yet discovered, it is likely that HIV/AIDS patients are discriminated in Vietnam, as well as in other countries.

The Government of Vietnam has strengthened the structure to protect HIV/AIDS patients by providing counseling and education/enlightenment to the patients, families of the patients, and people around the patients.

The AIDS division of the Health Department in Provinces/cities, Preventive Medicine Center, Dermatology and Venereal Disease Center, and other public groups, including NGOS, are supposed to be the ones to implement activities for management and care of HIV cases and AIDS patients. The government gave them instructions regarding developing their structures and systems. In fact, in some provinces/cities, 24 hour-telephone counseling and other counseling counters were already established. They also promote their activities through mass communication, such as newspapers.

As mentioned, since complete cure and treatment for HIV/AIDS are not found and some medicines for treatment are very expensive, there is no medical institution which specializes only in AIDS cure/treatment. However, clinical treatment/cure for HIV/AIDS patients is so important that the clinical treatment/cure has been started on trial at center medical institutions such as National Tropical Disease Research Center in Hanoi, Tropical Disease Center, and Cho Ray Hospital in Ho Chi Minh City.

At the provincial and city levels, HIV/AIDS patients are hospitalized at some General Hospitals and Dermatology and Venereal Disease Center. However,

availability of medicine is less and cure/treatment is only for general infectious diseases.

(6) Program management

Measures for HIV/AIDS include not only medical matters, but also social matters such as prostitution, drug, and improvement of people's perception about HIV/AIDS. Therefore, cooperation among the Ministry of Health, other government organizations, and private organizations, is important in order to set up HIV/AIDS prevention and control. In this regard, it is understandable that National AIDS Committee(NAC) which used to be under the Ministry of Health came to be under the control of the Prime Minister's Office.

Furthermore, in order to disseminate policies and information all over the country, the Provincial AIDS Committee(PAC) has been established. The PAC also consists of members of Health department and other social departments. Regarding policies and finance distribution, NAC distributes implementing organizations through PAC. However, the chairman and other main members of PAC are generally from the Health department since the Health department is in charge of most of the activities for HIV/AIDS prevention and control. In fact, the staff related to HIV/AIDS prevention and control belongs to the AIDS division of the Health department and PAC.

(7) Monitoring and evaluation of the program

As mentioned above, there are activities presently going on all over the country, and it is required that province/city report submits to NAC through Health department or PAC, for monitoring and evaluation. Collected data are put together and summarized on a report paper which is issued every 6 months.

- HIV infection rate
- IEC Activity implementation
- Implementation of blood testing and its results
- Training regarding HIV/AIDS prevention and control

1-3 Details of the request for the Project and Involvement of the Government of Japan

International organizations and other donors consider a great deal of positive undertakings for HIV/AIDS prevention in Vietnam. Such activities are also financially and technically supported by the Government of Vietnam. In particular, UNAIDS and WHO, largely helped the government in establishing national policies and in coordinating activities provided by other donors.

Last February 1999, a donor workshop was held in Phu Yen, wherein 9 Action plans requiring foreign assistance were drawn up in agreement with the participants.

The Government of Japan dispatched the mission for Project Formation in July 1997. Since the Government of Vietnam initially requested the Government of Japan to provide assistance in ensuring safety blood and promoting IEC, they discussed about the cooperation plan in establishing safe blood processing centers. The process includes blood collection, screening, blood separation analysis, preservation of blood, and blood transfusion. After the discussion, NAC submitted a new proposal (target 5 provinces and 1 city in southern areas), based on the contents of the discussion, to the Government of Japan.

On the other hand, blood screening over the country, strengthening HIV/AIDS surveillance, strengthening IEC for HIV/AIDS prevention, are included in the Japanese Aid scheme. Blood screening was the most prioritized activity among those mentioned earlier.

In November 1998, the mission for preliminary study was dispatched to Vietnam. Before that, the request submitted to the Government of Japan, included 3 components mentioned above. In that request, some major changes were made in terms of targeted facilities and contents of the request. The mission studied the suitability of the requested contents with considering present situations in HIV/AIDS prevention, rather than to investigate the reason of the modification which was considered to be political.

The first trial case only targeted the southern areas as project sites under the Japanese Grant Aid scheme. There was intention that the Project would be set up in small scale. Provinces and cities in the south are targeted because HIV infectious rates were comparatively higher in southern provinces, and rapid increase of HIV/AIDS patients was assumed due to accelerated economic activities in the south. It had been better to select province based on HIV infectious rates of all provinces.

However, since there was less reliable and rigid data about HIV in all provinces, it was impossible to objectively select the provinces.

Even though International organizations and other donors take NAC as the partner for the cooperation, the Ministry of Health is the counterpart in the Project. Because it was expected that the Ministry is the most forceful to control implementation activities for HIV/AIDS prevention and able to operate and manage equipment, basic design study was proceeded with the Ministry of Health as requested. However, the Basic design study team considered the importance of cooperation with NAC, therefore the team coordinated with NAC in the field study as much as possible.

Chapter 2

Contents of the Project

Chapter 2 Content of the Project

2-1 Objective of the Project

According to available statistical data, HIV infection and AIDS transmission in Vietnam is still at its early stage and is seemingly less apparent and less serious compared with its neighboring countries such as Thailand and Cambodia. However, it has been presumed that HIV/AIDS is rapidly spreading in Vietnam with the movement of people, caused by remarkable development of the entertainment industry and services, international joint ventures, rapid urbanization, etc.

Based on the result of various studies, the Government of Vietnam has set forth conceivable countermeasures for the prevention and control of this epidemic transmission. The government has established the "National Strategic Plan on AIDS 1994 - 2000" in 1993, when the first AIDS patient was found in the country.

Their serious and earnest enthusiasms toward this fatal epidemic and its prevention were highly appreciated by international organizations and other foreign governments. The first donor workshop was held in 1998 sponsored by UNAIDS, with the specific aim of aid coordination and management planning.

"Integrated Plan for Action for the Vietnam 1998-1999" was established in the workshop. In accordance with the Integrated Plan, UNAIDS suggested 9 initiatives for action, which is called "The UNAIDS Plan of Action in Vietnam 1998-1999". The objectives of the 9 initiatives are shown below. Based on this commitment, a request was raised to the Government of Japan concerning 4 objectives out of 9 objectives mentioned below.

- ① To strengthen the capabilities of National AIDS Committee (NAC) to manage and coordinate activities related to AIDS/HIV.
- ② To improve counseling system, support, and care skills for HIV carriers and AIDS patients.
- ③ To improve harm reduction programs targeted for IUDs and CSWs with new approach methods.
- ④ To develop and establish the partnership with private sectors.
- ⑤ To enlighten the general public about AIDS problems and promote behavior change.
- ⑥ To promote condom use and improve its distribution.
- ⑦ To improve protection and control systems for STD.
- ⑧ To supply better quality blood for transfusion by delivering and installing suitable separation equipment.

- ⑨ To strengthen the quality of HIV/AIDS surveillance and HIV testing by providing equipment for provincial hospitals and preventive medicine centers and its derived institutions.

The project equipment mainly contains testing equipment, equipment for blood component separation, and condom/IEC equipment to realize 4 objectives (⑤,⑥,⑧,⑨)

2-2 Basic Concept of the Project

As mentioned in 2-1, Objective of the Project, the Basic Concept of the Project is to supply the necessary equipment to proposed project facilities in 9 southern provinces, Ho Chi Min City, and Hanoi City, in order to support the following activities in preventing the rapid prevalence of HIV/AIDS.

- ① To conduct sentinel surveillance
- ② To control venereal
- ③ To ensure safe blood
- ④ To promote HIV/AIDS IEC

The request and study results are summarized as follows:

2-2-1 Summary of the request

(1) Target areas

Local administration is divided into 4 cities and 57 provinces and they are grouped into 3 regions (North/Central/South).

North region	: 2 cities, 27 provinces
Central region	: 1 city, 10 provinces
Highland region	: 3 provinces
South region	: 1 city, 18 provinces

As the target areas, 1 city and 10 provinces in the south region and Hanoi are chosen.

(2) Project facilities

Ministries in Hanoi control the local administrative organizations and institutions in each province and city. Therefore, all the project facilities are under the authority of the Ministry of Health and they are shown in the next page. Two national institutions in Hanoi are chosen to cover national and regional organizations because they function to cover north regions at the same time.

Table 2-1 Target Facilities

Province / City	National	Region	Province/City
Ho Chi Minh City		Pasteur Research Institute	AIDS Division of the Health Center Preventive Medicine Center Blood Transfusion Center Dermatology and Venereal Disease Center Tropical Disease Center
Dong Nai			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Ba Ria Vung Tau			AIDS Division of the Health Center Preventive Medicine Center General Hospital
An Giang			AIDS Division of the Health Center Preventive Medicine Center General Hospital Chau Doc Hospital
Lam Dong			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Long An			AIDS Division of the Health Center Preventive Medicine Center General Hospital
Kien Giang			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Can Tho			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Tien Giang			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Binh Duong			AIDS Division of the Health Center Preventive Medicine Center General Hospital Dermatology and Venereal Disease Center
Hanoi	AIDS Division of the Ministry of Health National Blood Transfusion Research Center NIHE		

(3) Requested equipment

The requested equipment was confirmed through the field survey, as follows.

Table 2-2 Requested Equipment List

No	Requested Equipment		
1	ELISA System	17	Printing machine
2	Autoclave	18	Photocopy machine
3	Hot air sterilizer	19	FAX
4	Refrigerated centrifuge	20	OHP
5	Centrifuge	21	Slide projector
6	PCR System	22	Personal computer
7	Bio safety cabinet	23	Incubator
8	Digital micro pipette	24	Electric balance
9	Agitator	25	Binocular microscope
10	Deep freezer	26	Medical refrigerator
11	Blood collecting vehicle	27	35mm Camera
12	Condom	28	Injection needle breaking device
13	Mobile Information Unit	29	Ultrasonic cleaner
14	VTR Camera	30	Distilled water manufacturer
15	Video editing system	31	Multimedia projector set
16	VTR/TV Set		

2-2-2 Result of the study

(1) Justification of the target areas

The areas are shown in 1-2-1 (1). Ten southern province/city are the primary target areas. Further, Hanoi city is added as the administrating and supervising organ in the northern areas.

Since statistical data in Vietnam does not contain sufficient sample numbers, the results for HIV/AIDS prevailing often fluctuate widely. Therefore, it may not reflect the precise actual HIV situation. It becomes very difficult to justify the targets area quantitatively based on available statistical data.

Nevertheless, these areas are more populated, facing neighboring countries, and having sight-seeing spots for tourists. Those factors have made HIV/AIDS risk higher with rapid mobilization of people within the regions. The characteristics of each province/city are shown in Table 2-3. In 11 areas targeted in the Project, it is very important to prevent spread of HIV/AIDS because they cover 20% of the national population.

Table2-3 Characteristic of Target Area

Targeted Area	Characteristics
Ho Chi Minh City, City	: Since it is the center city on the south, and the window for economic activities, a number of foreigners come in and out. There are many CSWs and drug addicts who are regarded as high-risk groups.
Dong Nai, Province	: Located next to Ho Chi Minh City, it has industrial areas. HIV infection started to spread over among young laborers who work in that industrial areas.
Ba Ria Vung Tau, Province	: Many tourists visit to swim in this area through all seasons. HIV infection spread over the entertainment areas.
An Giang, Province	: High-risk people, such as CSWs and drug addicts, often stay, since this province has the boarder with Cambodia.
Lam Dong, Province	: Many tourists visit highlands areas in this province through all seasons. HIV infection spread over the areas.
Long An, Province	: It is important traffic point for people to head for south areas. It faces HCMC and Cambodia.
Kien Giang, Province	: It faces East China Ocean, and a number of fisher men come in and out. HIV infection is spread out by them.
Can Tho, Province	: It has been developed as the center city of Mekong Delta area. That accelerates the expansion of HIV infection.
Tien Giang, Province	: It has a similar situation HIV infection spreads out with long distance track drivers with Long An.
Binh Duong, Province	: It has one of the biggest industrial areas, HIV infection is spreading over young labors.
Hanoi , City	: It is the capital city in Viet Nam. The center organization to control target facilities in the Project is located.

(2) Justification of the project facilities

In Vietnam, the national government has strong influence on local governments, and there are similar organizations and facilities under the local governments. The national government's policies and functions are directly extended to the local governments. Thus, uniformed quality of the administration service are provided all over the country.

Functions of each project facility is summarized as follows:

1) Policy making organization for HIV/AIDS prevention

National level	:	AIDS Division of the Ministry of Health
Province/city level	:	AIDS Division of the Health Service

They are responsible for policy making as to HIV/AIDS. They are to be understood as a steering committee rather than an implementing organization. They consist of selected staff from MOH, Division Health office, and other institutions. Resident officers are responsible to implement the decision, but they rarely do actual implementation. Other relevant institutes undertake the implementation. IEC activities for the implementing institutes and local people is also a main function of this organization.

2) Implementing organization for epidemic disease prevention

National level	:	NIHE
Regional level	:	Pasteur Research Institute (PRI) (This institute is one of the project facilities)
Province/city level	:	Preventive Medicine Center

Sentinel surveillance and IEC are the main functions of these organizations. They are responsible in preventing epidemic diseases. They have carefully studied the disease, implemented vaccination, and gave instructions to hotel and restaurant personnel. In addition to epidemic prevention, IEC is also their responsibility.

NIHE, and PRI have played important roles. One of the roles is to evaluate the examination abilities of local preventive medical centers. NIHE and PRI send some blood samples to the local center and let the local centers examine the samples and report the results to them. By evaluating the results reported by the local centers, they know the examination ability that local centers have.

3) Blood bank

National level	:	National Institute for Hematology and Blood Transfusion
Regional level	:	Blood Transfusion Center (Blood Transfusion Center in HCMC is selected one of the project facility)
Province/city level	:	General Hospital.

They are responsible to supply blood for transfusion. In the case of province/city, the blood transfusion center is located in general hospitals which are regarded as a top-referral clinic organization.

4) Cure and prevention for Venereal Disease.

National level	:	National Dermatology and Venereal Disease Research Institute (not selected as the project facility)
Province/city level	:	Dermatology and Venereal Disease Hospital. (This hospital in HCMC is selected as the project facility) Dermatology and Venereal Disease Center

Venereal disease prevention is regarded in Vietnam as one of the important strategy to control and lower HIV/AIDS risk. The government has strengthened the function of each center by supplying the necessary equipment.

Their origins are not the same. Some were derived from isolated facility of leprosy patient and the others were derived from PMC or general hospital. Such different origins have caused different status of equipment supply and personnel line up.

5) HIV/AIDS prevention and treatment

National level	:	Tropical Disease Clinical Research Institute
Regional level	:	Tropical Disease Center (That of HCMC: one of the project facilities)
Province/city level	:	General Hospitals or Dermatology center

Effective cure for this disease has not been established throughout the world. Nevertheless, a number of patients who need proper cure and treatment is sure to exist. In Vietnam, there are some institutions for HIV/AIDS cure and treatment. However, the cure and treatment has not been systematically developed over the country, unlike other organizations.

Activities provided by the said institutions are mentioned below.

Table 2-4 Activity of the Project Facilities

	Targeted Facilities	HIV Blood Test	Venereal Disease Treatment	Trans fusion Blood	IEC
National	AIDS Division of the Ministry of Health	-	-	-	○
Local	AIDS Division of the Health Service	-	-	-	◎
National	NIHE	◎	-	-	○
Regional	Pasteur Research Institute	◎	-	-	○
Local	Preventive Medicine Center	◎	-	-	○
National	National Blood Transfusion Research Institute	-	-	◎	○
Regional	Blood Transfusion Center	-	-	◎	○
Local	General Hospital	○	△	◎	○
Regional	Dermatology and Venereal Disease Hospital	○	◎	-	○
Local	Dermatology and Venereal Disease Center	○	◎	-	○
Regional	Tropical Disease Center	◎	-	-	○

◎ Primary activity, ○ One of the main activity, △ Supplemental activity, - No Activity

The blood testing for HIV includes surveillance, test of venereal disease patient, ordinary people, hotel and restaurant employee, and physical exams for Vietnamese going abroad by international marriage.

Thus, methods and purposes of blood test for HIV, widely varies and many other institutes have strenuously worked for it. Attention should be paid to determine HIV (+) because a final determination test with high

credibility is not yet established in Vietnam. Only a few institutes are presently authorized for such determination in Vietnam.

The MOH strategy targets the final determination test for HIV to be done in local provinces and cities, in near future. The Project will greatly contribute to the future plan of MOH.

Initial test	:	Local clinic or district hospital/PMC
Second test	:	Preventive medicine center
Final determination test	:	Pasteur research institute (HCMC, and Da Nang) NIHE/PMC

Based on the survey results, all activities are shown in Table 2-5, 2-6, 2-7, 2-8. Details of each facility and its activities are mentioned below.

[HIV testing] (Refer Table 2-5)

Each facility has different purposes for the HIV test. Because preventive medicine centers in the provinces/cities function as the second test place, more HIV tests are conducted compared with other institutions. Moreover, the numbers of the test depend on area. For example, in HCMC tests are done for 83 times per day, on the contrary, 6 times are done in Long An. Provinces where the test is not often done are Long An, Lam Dong, and Tien Giang. This is because these provinces had not been target for sentinel surveillance up to 1998. Since the surveillance is started in these provinces, more HIV tests will be done.

General hospitals mainly conduct HIV tests to screen the blood for transfusion blood, therefore the numbers of tests depends on the quantities of supplied transfusion blood. Less tests have been done at the general hospital in Ba Ria Vung Tau. This is because the hospital is located far from Vung Tau which is the center of the province, and there is another hospital called Leroi in Vung Tau. However, the general hospital is the only provincial hospital, and it has made more effort in developing facilities and planning to have Transfusion blood center in it. Given the fact the hospital has been engaged, it is expected that more tests will be conducted in the hospital.

Compared with other institutes, less tests are conducted at Dermatology and venereal disease centers, since tests are done only to venereal disease patients who come to the center. Most of the center have become recently independent from other medical institutions, and they are not yet well established in terms of systems and facilities, therefore, very few tests has been done at some centers in Binh Duong, and Can Tho, and the center in Dong Nai does not provide tests to patients. Although there is the plan that HIV tests will be often done in future, the centers in Binh Duong, Can Tho, and Dong Nai were removed from target facilities in the Project due to unclear implementing system.

[Blood Bank Service] (Refer Table 2-6)

Blood bank services have been provided by general hospitals in provinces, and independent medical institutions in Hanoi and HCMC. The quantities of treated blood depend on the institutions and areas. Chau Dotch hospital ,which treats the lest units, has been treating 6 units everyday in An Gian (1 unit is 200 ml or 250ml). For security of blood, it would be proper to provide Chau Dotch hospital with a centrifuge for blood separation. However, since Chau Dotch hospital was not included in the initial request to the Government of Japan, the hospital is not a target in the Project.

[Condom Delivery] (Refer Table 2-7)

The numbers shown on Table 2-7 were achieved by the Ministry of Health. The condoms were delivered to each province/city under the purpose to prevent HIV prevailing. Then, the condoms provided by NGO or provided on loans for family planning, were not added the numbers on Table 2-7. Sufficient numbers of condoms were not delivered, because the Ministry has lacked in the finance to purchase enough condoms which is usually regarded as consumables. Therefore, it is not right to think of low capabilities to deliver and less necessities for condom by looking at the numbers of condoms delivered so far by the Ministry. During the survey in Vietnam, opinions that indicated high necessities but low availability of the condom were raised in many provinces and cities. In provinces and cities, the condom is delivered from AIDS division of health departments to health canters or health posts in districts and villages, then it is directly

handed out to local people. Therefore, the numbers of health posts in province could be a good parameter to show capabilities to deliver condoms.

[IEC activities] (Refer Table 2-8)

The results on Table 2-8 were obtained with answering sheets of questionnaires. Since the activities are so various that the table does not exactly describe how activities have been implemented. However, it was confirmed that all facilities are very keen for IEC activities.

In some provinces, AIDS Division and preventive medicine center share equipment for IEC activities. In those provinces, the equipment planning was more carefully drawn up in order to avoid overlapping equipment.

Table 2-5 Blood Test of Each Facility

Site	(times/week)		
	HIV	HCV	HBV
Hanoi			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	500	-	-
Blood Transfusion Center	2000	2000	3000
Dermatology and Venereal Disease Center	50	50	400
Tropical Disease Center	500	-	-
Pasteur Research Institute	875	60	800
Dong Nai			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	194	-	-
General Hospital	60	25	100
Dermatology and Venereal Disease Center	-	-	-
Ba Ria Vung Tau			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	165	-	-
General Hospital	24	18	18
An Giang			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	160	-	-
General Hospital	100	100	100
Choudoc Hospital	40	-	50
Lam Dong			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	90	-	-
General Hospital	90	90	90
Dermatology and Venereal Disease Center	60	-	-
Long An			
AIDS Division of the Health Center	-	-	55
Preventive Medicine Center	40	42	54
General Hospital	45	-	-
Kien Giang			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	196	10	6
General Hospital	253	103	130
Dermatology and Venereal Disease Center	60	-	-
Can Tho			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	448	-	200
General Hospital	208	115	110
Dermatology and Venereal Disease Center	10	-	-
Tien Giang			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	88	-	8
General Hospital	88	80	112
Dermatology and Venereal Disease Center	40	-	-
Binh Duong			
AIDS Division of the Health Center	-	-	-
Preventive Medicine Center	118	-	38
General Hospital	90	50	100
Social Disease Center	10	-	-
Hanoi			
AIDS Division of the Ministry of Health	-	-	-
NIHE	1225	-	-
National Blood Transfusion Research Center	500	500	500

Table 2-6 Transfusion at The Project Facility

(Unit/ year : 1 unit = 200 ml or 250ml)

Site	Transfusion blood amount
Ho Chi Minh City, City	
Blood, Transfusion Center	60,000
Dong Nai, Province	
General Hospital	7,200
Ba Ria Vung Tau, Province	
General Hospital	4,800
An Giang, Province	
General Hospital	4,400
Choudoc Hospital	1,770
Lam Dong, Province	
General Hospital	3,400
Long An, Province	
General Hospital	6,000
Kien Giang, Province	
General Hospital	3,200
Can Tho, Province	
General Hospital	4,100
Tien Giang, Province	
General Hospital	4,800
Binh Duong, Province	
General Hospital	2,400
Hanoi , City	
National Blood Transfusion Research Center	12,000

Table 2-7 Condom Distribution and its Past Result

Site	Distributed amount
Ho Chi Minh City, City	200,000
Dong Nai, Province	50,000
Ba Ria Vung Tau, Province	100,000
An Giang, Province	750,000
Lam Dong, Province	50,000
Long An, Province	30,000
Kien Giang, Province	100,000
Can Tho, Province	968,000
Tien Giang, Province	50,000
Binh Duong, Province	100,000

Table 2-8 IEC Activity and its Present Status

Site	TV IEC PR	TV IEC program	News paper PR	Printed matter	Lecture	Exhibit ion	PA by bulletin board
Hanoi							
AIDS Division of the Health Center	60	720		80,000	96		18,000
Preventive Medicine Center	24	180		200,000	48		
Blood Transfusion Center							
Dermatology and Venereal Disease Center	2			30,000			
Tropical Disease Center							
Pasteur Research Institute							
Dong Nai							
AIDS Division of the Health Center	36	120		700,000	4		
Preventive Medicine Center	144		36	570,224	220	4	19
General Hospital				24	20		
Dermatology and Venereal Disease Center				12			
Ba Ria Vung Tau							
AIDS Division of the Health Center	1,872		432		12		1200
Preventive Medicine Center					7		
General Hospital							
An Giang							
AIDS Division of the Health Center	96	1,092		84,788	12		
Preventive Medicine Center							
General Hospital		48	1		72		200
Chau Doc Hospital					60		30
Lam Dong							
AIDS Division of the Health Center	48	60	60	7,200	24	84	128
Preventive Medicine Center	120	24	36	84,000	48		
General Hospital		192			48		permanent
Dermatology and Venereal Disease Center		25		279,500	60	1,454	permanent
Long An							
AIDS Division of the Health Center	326	42	31	146,924	184	84	27
Preventive Medicine Center	116	15	31	147,920	136	11	16
General Hospital							
Kien Giang							
AIDS Division of the Health Center	48	504		2,935	240		12,000
Preventive Medicine Center	12	6		700	24		300
General Hospital	12	24	1	200	48		20
Dermatology and Venereal Disease Center	24			200	60		40
Can Tho							
AIDS Division of the Health Center	96	260	52	450,000	240		25,000
Preventive Medicine Center	48	312	12	51,000	48		500
General Hospital				2,040	144		300
Dermatology and Venereal Disease Center	12				2		
Tien Giang							
AIDS Division of the Health Center	24	84		132,100	7,200		90
Preventive Medicine Center	24	48	1	26	24		12
General Hospital					48		
Dermatology and Venereal Disease Center	24	24			60		
Binh Duong							
AIDS Division of the Health Center	72	240	3	1,600	60	14	1,000
Preventive Medicine Center	48	48	2	5,500	36	14	twice
General Hospital	48		1		12		20
Social Disease Center		24		6,000	24		3,000
Hanoi							
AIDS Division of the Ministry of Health	48		48	1,500,000	84		500,000
NIHE							
National Blood Transfusion Research Center							

(3) Requested equipment justification

The justification should be made by considering two aspects, as follows:

- Relevance of each equipment with the objectives of the Project.
- Suitability of each equipment with present conditions of each facility.

1) Relevance of each equipment with the objectives of the Project

All the requested equipment was carefully examined according to the project objectives in detail. The following equipment are excluded.

- | | |
|----|----------------------------------|
| 14 | VTR camera |
| 15 | Video editing system |
| 23 | Incubator |
| 24 | Electrical balance |
| 25 | Binocular microscope |
| 27 | 35 mm Camera |
| 28 | Injection needle breaking device |
| 29 | Ultra-sonic cleaner |

Considerations for equipment are respectively mentioned in the following section (Section 2-3 Basic Design).

Table 2-9 Usage of the Requested Equipment

No.	Requested Equipment	Sentinel surveillance	Venereal Disease/ treatment	Safety blood	IEC
1	ELISA System	◎	-	◎	-
2	Autoclave	○	◎	○	-
3	Hot air sterilizer	○	◎	○	-
4	Refrigerated centrifuge	-	-	◎	-
5	Centrifuge	◎	-	◎	-
6	PCR	◎	-	◎	-
7	Bio safety cabinet	○	◎	○	-
8	Digital micro pipette	◎	◎	◎	-
9	Agitator	◎	◎	◎	-
10	Deep freezer	○	○	○	-
11	Blood collecting vehicle	◎	-	-	-
12	Condom	-	◎	-	○
13	Mobile Information Unit	-	-	-	◎
14	VTR Camera	-	-	-	○
15	Video editing system	-	-	-	○
16	VTR/TV Set	-	-	-	◎
17	Printing machine	-	-	-	◎
18	Photocopy machine	-	-	-	◎
19	FAX	◎	-	-	◎
20	OHP	-	-	-	◎
21	Slide projector	-	-	-	◎
22	Personal computer	◎	-	-	◎
23	Incubator	-	◎	-	-
24	Electric balance	-	○	-	-
25	Binocular microscope	-	◎	◎	-
26	Medical refrigerator	◎	◎	◎	-
27	35mm Camera	-	-	-	○
28	Injection needle breaking device	○	○	○	-
29	Ultrasonic cleaner	○	○	○	-
30	Distilled water manufacture	◎	◎	◎	-
31	Multimedia projector set	-	-	-	○

◎ Absolutely necessary, ○ Useful and effective, - No relation

2) Suitability of each equipment with present conditions of each facility

Each facility has its various activity, scale and existing equipment. Therefore, each facility needs particular equipment design.

Extensive discussion was made with MOH concerning the justification of each equipment from the view of evaluation points and criteria. The outcome was attached to the Minutes of Discussion and hereby referred.

Evaluation Points

- ① Fundamental and necessary equipment for the specific project aim
- ② Necessary to each project facility
- ③ Equipped with sufficient maintenance staff for each equipment
- ④ Installation place is well arranged for space utility and so forth.

Evaluation Criteria

- ⊙ Absolutely necessary
- Useful and effective
- Careful consideration is necessary.

Careful examination was further made to give detailed analysis of all the collected data after the field survey, and then the decision is made and shown in 2-3.

2-3 Basic Design

2-3-1 Design Concept

The following criteria are carefully considered to establish equipment design based on the results of the field survey. The result of the survey includes HIV/AIDS prevention and control policy of the Government of Vietnam, its implementing capability and scale, its equipment maintenance ability and other relevant conditions such as the local climate.

- (1) Each project facility must be carefully reviewed in terms of the present activity, and the equipment which is inevitable to conduct targeted activities are selected.

Target facilities in the Project are expected to partly have the same functions. MOH standardizes the activities for the institutions in the facilities and requires them to put the activities into practice. However, actual situation of each facility differs and its equipment availability is totally different. Therefore, equipment must be selected by carefully viewing these relevant conditions.

- (2) Quantity and specification of each equipment must be determined by considering the scales of activities each facility conduct.

Even when the activities are the same, the scales and levels of the activities often differs due to local situations. Therefore, in view of activities, it is not effective to implement uniform equipment design to all facilities. Quantity and specification of each equipment are determined by considering the scales and levels of activities each facility conducts. However, in view of easy maintenance and operation, it could be effective to standardize the design. Accordingly, it is important to consider the equipment design from both views.

- (3) In order to determine the quantities and specifications of the equipment, it is important to consider the maintenance system and the costs that each target facility has.

All the existing staff can manage to use all the requested equipment without any additional training, but it is still not certain whether they can financially and technically maintain all these equipment in good and workable conditions. It is important to consider maintenance system and costs that each target facility has before determining the quantities and specifications of the equipment.

- (4) It is important to consider existing equipment and cooperation among project facilities to implement better activities.

Some project facilities were recently separated from other facilities. Executives of some facilities are in charge of several facilities. The same equipment can be shared when its utilization program is made. In fact, it was found out that some existing equipment has been shared among several facilities. The equipment to be provided in the Project could also be shared by the facilities, but duplications of the equipment must be avoided.

- (5) Availability of consumables and spare parts must be carefully considered.

Through the field survey, it was found out that several local dealers can provide some equipment requested for the project facilities. Local dealers are important to supply consumables and spare parts after installation and during project implementation. Therefore, it is necessary to make the equipment design, which enables local dealers to provide.

- (6) Local climate must be carefully considered.

Analytical equipment is largely composed of minute and fragile components and rubber. The high humid climate of the tropical rain forest in Vietnam could cause the deterioration of the equipment. Such local climate must be carefully considered and each facility needs to have air conditioning, for analytical equipment and maintenance equipment.

2-3-2 Basic Design

- (1) Overall design

The requested equipment can be separated into three categories. They are blood testing, blood component separation and IEC equipment. Present situations of facilities where the equipment will be installed are shown below.

- 1) Blood testing equipment and its installation

Most of the equipment is to be installed in the testing laboratories. Enough space, suitable circumstance and sufficient utility were already assured in the testing laboratories through the field survey.

2) Equipment for Blood component separation and its installation

This equipment is to be installed in existing blood collecting or transfusion facilities. Availability of space, and utility were confirmed in the facilities.

3) IEC equipment and its installation

IEC equipment is to be installed in patient's waiting room, counseling office, auditorium, IEC exhibition booth, etc. They were confirmed to be suitable for installation in terms of space, environment, and utility.

4) Vehicles and its storage space

Vehicles must be kept in a garage with a roof. Every facility is expected to be kept in proper location.

(2) Equipment design

1) Justification of each equipment

Each equipment is closely examined in terms of suitability with the objectives of the Project.

1. ELISA system

The following testing methods are generally accepted ones and they are combined with each other for practical use.

- ① PA (Celodia) method
- ② Rapid method
- ③ Western blot method
- ④ PCR system method
- ⑤ ELISA system method

Comparing ELISA system, each method has its own advantage and disadvantage as follows.

① PA (Celodia) method

Disadvantage

- It costs relatively high
- Reagent supply is limited to one source, thus, its supply cost is very high.

- Only MOH is authorized to purchase the reagent and each facility is not allowed, therefore increased demand cannot be accommodated.

Advantage

- Every facility has sufficient testing result and its technicians are well trained for it.

② Rapid method

Disadvantage

- Its cost is enormously high.

Advantage

- Results can be obtained quickly.

③ Western blot method

Disadvantage

- Cost is relatively high.
- Any concrete testing results are not confirmed and accumulated in Vietnam.

Advantage

- Testing method is simple

④ PCR system method

Disadvantage

- Its cost is exceedingly high.
- It is very sensitive to small contamination and therefore its result fluctuates widely depending upon the circumstance and handling conditions.

Advantage

- Direct virus detection has made it possible to get final determination even during windows period.
- It is possible to determine definitely when \pm testing sample by other method.

Viewing all these advantages and disadvantages carefully, ELISA system method would be the best suited blood-testing method for the Project. Since this system will be used the most in the detecting HIV infections, this system will be provided to all project facilities, except some facilities which will have less blood samples.

2. Autoclave

Attention should be paid to the treatment of testing sample because of HIV virus in the sample. Treating equipment should be taken care of well in view of safety of testing personal. Disposal usage is recently becoming more common, but still some equipment and device are subjected to recycling. Vietnam has suffered from severe shortage of necessary fund for testing. Then, all of the project facilities have to recycle blood collecting tube and other glass-wear devices. Therefore, those tubes and devices must be treated in the autoclave for sterilization. This equipment will be provided to all project facilities except Dermatology and Venereal Center in Tien Giang, which already possesses the same equipment.

3. Hot air sterilizer

It is widely used to sterilize testing devices after cleaning. It is one of the most essential equipment for blood testing. Strong necessity for this equipment was confirmed after looking into existing equipment in the field survey. This equipment will be provided to all project facilities which came up with a request.

4. Refrigerated centrifuge

Safe blood should be secured as one of the main pillars for HIV prevention. Blood Transfusion shall have to be absolutely safe, but considering the window period, blood test does not assure perfect guarantee of its safety against HIV. The requested equipment is aimed to separate components and enable to separate white blood cells which are easily infected by HIV virus. Then, separated components come to have relatively higher safety level. Component Transfusion has made it possible to use the same blood for some patient at the same time. This equipment is useful to secure shortage of blood for transfusion to a certain extent.

This equipment will be provided to all targeted general hospitals. Regarding the request for this equipment to Preventive Medicine Center in HCMC, first of all, the center requested a centrifuge (not refrigerated) only to separate the blood samples. However, the

center changed its request to have this refrigerated centrifuge for more general usage when the Study Team was conducting the field survey. This request was regarded as reasonable and accepted.

5. Centrifuge

It is usually serum to be exposed to HIV blood testing and this equipment is necessary for such serum separation from whole blood. This equipment will be provided to all project facilities except Ba Ria Vung Tau, which already possesses the same equipment.

6. PCR system

It is an antibody to be tested and found by the ordinary HIV blood test, but this PCR system can detect the HIV virus itself. This system requires exceedingly high cost for reagent, therefore it is not justified for ordinary blood screening purpose. It is justified only for top referral testing institutions in the country. The number of the sample over the country, will not be so large that this equipment does not need to be provided to 4 requested facilities because of maintenance and effective usage. Therefore, this equipment will be installed in Hanoi city and HCMC. The actual installation places will be NIHE and PRI, which are the top-referral organization for sentinel surveillance.

7. Bio safety cabinet

Securing absolute safety to all testing personnel is strongly required. It is important to keep away from any exposure with the virus. Any testing work to generate any aerosol shall have to be avoided. To avoid aerosol generation, this equipment is effective. The physical examination for TB and syphilis patients must be done using this equipment. In terms of safety of testing personnel, the importance of the equipment is regarded as very high. The equipment will be installed in facilities which have enough spaces, since the equipment comparatively has large volume.

8. Digital micro pipette
9. Agitator (for Syphilis)
10. Agitator (for Micro-plate cure)
11. Deep freezer

They are basically required as testing equipment. The equipment will be provided to the facility which came with a request.

12. Blood collecting vehicle

One of the main activities of PMC is sentinel surveillance, which requires blood sample collection of high-risk people. In that case, it is urgently required to frequently visit local areas for sample collection. Public transportation system is less developed in Vietnam and most existing roads are unpaved and very rough. All of the facilities are not properly equipped with such vehicle, therefore they have to rely on motor cycle or available transportation device.

Collecting work usually requires 2-3 day stay which sometimes causes sample deterioration due to tropical climate. Therefore it often happens that collected samples go bad and have to be discarded. Accordingly the importance of this equipment is high.

The request for this equipment from the general hospital in Long An was deleted, because it was difficult to use it effectively. Besides, Health division in Hanoi requested this equipment for the purpose of rent it out to north provinces. Since the north provinces are beyond the scope of the Project, the request was not accepted.

13. Condom

Sexual intercourse is generally regarded as one of the main causes of HIV prevalence in Vietnam. Condom is considered to be useful in preventing HIV. IEC activity using condom is meaningful and regarded as the main pillar in realizing project objectives. It is reasonably concluded as important. Condom is distributed under the purpose of family planning programs. The program are usually grant

or loan. Therefore, the condom to be procured in the Project will be distributed with IEC activities.

Populations, the numbers of health centers, and past delivery experiences in provinces/cities are the parameters to determine the numbers of condom.

14. Mobile Information Unit

IEC using audiovisual material is effective particularly to local people. This equipment is requested for the extensive use of IEC for local people in each province.

It is planned to set a temporary stage to show play or singing performance. Because it was found out that not many people have TV in local areas thus IEC activities on TV is not so effective.

This equipment is one of the most important equipment in order to achieve the objectives of the Project. It will be provided to all project facilities except Hanoi City. This is because renting the equipment to north provinces by the city can not be considered proper in the Project.

15. Video camera

16. Video editing system

Audiovisual materials are very useful for IEC. This equipment is necessary to produce the materials. However, most of the facilities are under MOH and health care institutions, and it is not certain that they are provided with capable staff to run the programs properly.

Japanese government considers that it is too early to produce the audiovisual materials. This equipment was finally deleted from the Project.

17. TV/VTR set

IEC through video tape showing is useful and effective. In Vietnam, some video tapes are available for HIV/AIDS prevention purposes. The video tapes have been produced mainly by MOH, and the

Ministry of Information. Showing the video to ordinary people closely matches with the specific purpose of the project. The equipment will be provided to all project facilities except some facilities where IEC has not been actively done.

18. Printing machine

Printed materials are widely made and distributed in great amount in Vietnam for IEC purpose. They are originally drafted and prepared by MOH or relevant institutions in Hanoi. Then the prepared materials are distributed to the center of each province/city. After that, the materials are copied by private printing companies. But due to severe budget shortage, each province/city can not make enough copies or print in required number. When this equipment is provided, the province/city can print materials by itself. The necessity of this machine is considered high.

However, because it is not effective and economical to provide several sets of this equipment to one province or city, 1 set of it will be provided to each province /city.

It will be installed in the best facility for total evaluation, or the facility with more activities.

19. Photocopy machine

Necessary information is delivered from top to bottom in Vietnam. Under this top-down structure, lots of efforts were made to train and educate staff on HIV/AIDS information campaign. These were done through various symposia and seminars using printed matters. It is becoming more important and useful for each province/city to copy the printed matters and other information provided by other sources. This equipment is assigned high priority.

The equipment can be shared with neighboring facilities. Then, each AIDS division in the province/city which badly needs the equipment, will be provided with 1 set of this equipment. Regarding HCMC, and Ba Ria Vung Tau, which include farther facilities, an additional set will be provided.

20. FAX

All the project facilities have closely networked under the direction of MOH for HIV protection. Information, order, instruction and announcement are delivered through this network using this device. Therefore, this device is very important. Similar to the photocopying machine, each AIDS Division in the province/city will be provided with 1 set of this equipment.

21. OHP

22. Slide projector

It is regarded as a general purpose equipment for IEC. The target facilities have been making lots of efforts for IEC activities. Priority of said equipment is high.

2 sets of this equipment will be provided to each province/city. The facility which has the most priority to get this equipment is the city/province most active in IEC activities. An additional set will be given to HCMC, Ba Ria Vung Tau, and An Giang, since the facilities are located far one another in those province and city.

23. Personal computer

Extensive sentinel surveillance has been implemented in 30 provinces and HIV (+) data is collected and computed in MOH every week. EPI Info., is used with well established system. EPI Info., which was invented in John Hopkins University in U.S.A, is well known as HIV data form. EPI Info., is arranged in Vietnamese.

However, some facilities presently make their hand-writing reports for EPI Info., and send them to MOH. Then, Staff of MOH encode the sent data into the system. Encoding and Managing information about HIV/AIDS are included in the objectives of the Project, and the equipment provide opportunities to access latest information on HIV/AIDS through the Internet. Therefore, this equipment is important in order that objectives of the Project are achieved. In general, 2 sets of the equipment will be provided to each province/city. The first priority to install the equipment is put on AIDS division and

Preventive Medicine Center, where data processing is more important. Regarding HCMC, because AIDS division has already the same set of the equipment, 1 new set will be installed in Blood Transfusion Center. In addition, an additional set of the equipment will be provided to An Giang, since the facilities are located far from one another.

24. Incubator

25. Electrical balance

26. Binocular microscope

The request for this equipment was made when the field study was conducted. It was deleted because it was found not urgent in consideration with existing equipment in the project facilities.

27. Medical Refrigerator

This equipment is an additional request from 3 facilities. Reagent for HIV test either Celodia or ELISA should be kept in a medical refrigerator, therefore, it is concluded as necessary. The equipment will be provided to all project facilities, since the existing old equipment is found to be needing a replacement.

28. 35 mm Camera

29. Injection needle breaking device

30. Ultrasonic cleaner

The request for this equipment was made when the field study was conducted. It was deleted because it was found not urgently needed in consideration with existing equipment in the project facilities.

31. Distilled Water Manufacturer

Washing Micro-plate is an important process for ELISA system blood test. Excellent quality of water supply holds the key to secure high performance of ELISA system. The request for this equipment was additionally made when the field survey was conducted. Since

the equipment is indispensable for ELISA system, it will be provided to the facility with a request.

32. Multimedia projector set

This equipment was requested by MOH. The equipment extensively projects computer data on a screen. This equipment effectively works for various seminars and presentation of HIV/AIDS information, since the statistical information and data was processed by computer. OHP projection in the most ordinary but direct data projection from computer is more effective and versatile. In addition, the data can be often updated. The other weak point of OHP is the costly processing of OHP materials. Since MOH itself requested this equipment, its need is considered high and proper for the project.

2) Designed equipment

Table 2-10 shows the content of the equipment and their rough specifications as shown in Table 2-11. The design was made with the consideration mentioned above.

3) Procurement plan

Following equipment is to be procured with careful considerations.

- Condom :

Two manufactures exist in Vietnam and the products of both are qualified as International Standard Organization (ISO). In addition they are capable to supply enough quantity with required quality and within limited period. Local procurement for condom is thus concluded necessary with the consideration of usage in the future.

- Printing Machine and photo copy machine:

Regular check and maintenance are required, therefore, they are subjected to local procurement.

- Fax :

Local procurement is desirable, since data transmission device often has domestic standards.

Table 1-10 Designed Equipment List

	Ho Chi Minh City						Dong Nai, Province			Ba Ria, Vung Tau, Province			An Giang, Province			Lam Dong, Province			Long An, Province			Kien Giang, Province			Can Tho, Province			Tien Giang, Province			Binh Duong, Province			Hanoi, City			
	AIDS Division	Preventive Medicine Center	Blood Transfusion Center	DVDH	Tropical Disease Center	Pasteur Research Institute	AIDS Division	General Hospital	DVDC	AIDS Division	Preventive Medicine Center	General Hospital	Choudoc Hospital	AIDS Division	Preventive Medicine Center	General Hospital	DVDC	AIDS Division	Preventive Medicine Center	General Hospital	DVDC	AIDS Division	Preventive Medicine Center	General Hospital	DVDC	AIDS Division	Preventive Medicine Center	General Hospital	DVDC	AIDS Division	Preventive Medicine Center	General Hospital	Social Disease Center	NIHE	NBTRI		
L-1	ELISA System	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24		
L-2	Autoclave	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	28		
L-3	Hot air sterilizer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27		
L-4	Refrigerated centrifuge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
L-5	Centrifuge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26		
L-6	PCR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2			
L-7	Bio safety cabinet	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20		
L-8	Digital micro pipette	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	29		
L-9	RPR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16		
L-10	TPHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18		
L-11	Deep freezer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
L-12	Blood collecting vehicle	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10		
L-13	Medical refrigerator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3		
L-14	Distilled water manufacture	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B-1	Refrigerated centrifuge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11		
I-1	Condom	2,000,000						1,000,000						700,000						1,000,000						500,000						5,800,000					
I-2	Mobile Information Unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10		
I-3	VTR/TV Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26		
I-4	Printing machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11		
I-5	Photocopy machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13		
I-6	FAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11		
I-7	OHP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24		
I-8	Slide projector	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23		
I-9	PC set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	22		
I-10	Multi-media projector	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Table 1-11 Equipment, Usage, and Specifications

No.	Equipment	Usage	Specification
L-1	ELISA System	Examination of HIV infection	HIV test Open system comprising incubator, washer, reader
L-2	Autoclave	Sterilization of equipment and devices	Sterilization of disposal and recycled equipment and material Operating temp. 105~123°C vertical type Volume, 50 liter
L-3	Hot air sterilizer	Drying and Sterilization of equipment and devices	Sterilization, dry up of recycled equipment Operating temp. 40~250°C Air: Natural circulation Volume, 70 liter
L-4	Refrigerated centrifuge	Centrifugal separation of test blood	Component separation, Floor installation type, Capacity 1000ml x 6, Revolution Max. 13,000 rpm, Recording temp -20~40°C
L-5	Centrifuge	Centrifugal separation of test blood	Blood separation Desk top, Capacity, 15 μ l x 48, Revolution Max. 6000 rpm
L-6	PCR	Precise examination of HIV infection	Final determination of HIV (+) Clean chamber, Thermal cycler, HS micro-centrifuge
L-7	Bio safety cabinet	Safety for doctors or examiners in testing disease infection	Security of testing from contamination Negative pressure inside, Width 1,200 mm, Material SUS304
L-8	Digital micro pipette	Deposition of a certain amount of solution	Necessary for automatic pipetting, Digital, Capacity 10~100 μ l, 2~20 μ l, 100~1000 μ l
L-9	RPR	Microplate mixing in HIV infection testing	Micro-plate rotation, Capacity 6-10 holes, Revolution 20~120 rpm
L-10	TPHA	Glassplate mixing in HIV infection testing	Syphilis examination, Capacity 2 holes, Variable speed adjustment
L-11	Deep freezer	Conservation of testing materials	Testing sample storage, Volume, 200 litre, Temperature -85°C
L-12	Blood collecting vehicle	Testing blood in local areas	Blood sample collection, 4WD Station Wagon, Equipment: Cooling box
L-13	Medical refrigerator	Conservation of medical materials for HIV testing	Reagent storage, Volume 340 liter, Temp. 2~14°C
L-14	Distilled water manufacture	Produce distilled water for ELISA system	Distilled water, Production, 1.8 l/n, Filter + dissolution
B-1	Refrigerated centrifuge	Centrifugal separation of, test blood	Max 6,000 rpm, Temp -20 ~40°C, capacity 1000ml x 6
I-1	Condom	Teaching materials to promote usage of condom	Lutex, Size M, ISO 4074/1990
I-2	Mobile Information Unit	Activities of IEC	IEC activity of remote area, 4WD Station Wagon, Equipment VTR, Video projector etc
I-3	VTR/TV Set	Showing video soft for HIV protection	For IEC, 29 inch TV, Video recorder with cabinet
I-4	Printing machine	Printing matters for HIV Protection	Printing Digital scan, Speed: 120 sheet/min, Resolution 400 dpi
I-5	Photocopy machine	Photocopy of materials made with IEC activities, and training.	Copying Desktop, Speed 15 sheet/min
I-6	FAX	Data transmissions of sentinel surveillance	Data forwarding Desktop, Paper size A4, Compatibility ITU (CCITT)
I-7	OHP	Projection of materials in IEC for HIV infection	Data projection, Portable, Lamp Halogen
I-8	Slide projector	Projection of materials in IEC for HIV infection	Data projection, Portable, Lamp Halogen
I-9	PC set	Data management of sentinel surveillance	Data processing, PC with printer, Desktop, RAM 64MB
I-10	Multi-media projector	Projection of materials in IEC for HIV infection	Data projection Video projector