No.

Ex-post Evaluation Report on the Projects for Strengthening of National Institute of Health Capabilities for Research and Development on AIDS and Emerging Infectious Diseases

February 2007

JAPAN INTERNATIONAL COOPERATION AGENCY

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07-002

Picture 1: Monument to JICA cooperation of construction of NIH main building

Picture 2: Refrigerators procured for the national repository system of HIV vaccine trials and serum bank

Picture 3: Computer for database of vaccine trials and serum bank

Abbreviation

ADSNet	South East Asian Nations Infectious Diseases Outbreak Surveillance Network
C/P	Counterpart
DAC	Development Assistance Committee
DMSc	Department of Medical Science, Thailand
EID	Emerging Infectious disease
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
JICA	Japan International Cooperation Agency
MoPH	Ministry of Public Health, Thailand
NIH	National Institute of Health
OECD	Organization for Economic Cooperation and Development
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

Table of Contents

タイ国国立衛生研究所
機能向上プロジェクト事後評価　　要　約

1.　案件の概要		
国名：タイ王国		案件名： 国立衛生研究所（NIH）機能強化プロジェクト
分野：保健医療		
所轄部署：医療協力部医療協力第一課		援助形態：プロジェクト方式技術協力
協力期間	（R/D）： 1998 年 12 月 24 日 1999 年 3 月 1 日～2004 年 2 月 28 日 （個別専門家）： （F/U）： 2004 年 5 月 6 日～2005 年 3 月 16 日	協力金額：9 億 800 万円 先方関係機関：保健省国立衛生研究所 日本側協力機関：国立感染症研究所、東京大学、大阪大学他 他の関連協力： 無償資金協力（1984 年度 24 億 5000 万円、1985 年度 14 億 5000 万円）、フォローアップ協力（2001 年度 1 億 3100 万円）

１－１　協力の背景と概要

タイ王国国立衛生研究所（National Institute of Health）は、1984 年から日本政府が無償資金協力によって建物建設、機材供与を実施し（1984 年度 24 億 5000 万円、1985 年度 14 億 5600 万円）、1986 年に完工された研究所である。タイ王国保健省医科学局（DMS c ）に所属し、保健省内における総合的研究施設を備えた唯一の研究機関として、タイ王国（以下、「タイ」と記す）における AIDS・感染症対策の中心的研究機関としての機能を担っている。

同研究所に対し、わが国は、NIH の感染症分野の研究能力の向上を目的とした「国立衛生研究所プロジェクト」（1985～1994 年）を実施した。また、1990 年代初頭からの AIDS の爆発的な流行を受け（AIDS の感染者は約 100 万人：総人口の 1.7%、死者は 22 万人と推定）、NIH を拠点とした「AIDS 予防対策プロジェクト」（1993～1996 年）を実施し、AIDS に関する研究機能及び公衆衛生活動の強化のための支援を実施した。同プロジェクトの終了に際し、タイ政府は AIDS に関する試験分析研究体制の更なる強化に加え、新興・再興感染症の調査研究体制と地方研究所間の連携体制の強化が必要と判断し、NIH の機能向上を目的としたプロジェクト方式技術協力を引き続き我が国に要請した。

更に上記技術協力後には、コホート研究の成果を国際的に評価されるまでに向上させるためのフォローアップとして個別専門家が派遣（2004 年 5 月 6 日～2005 年 3 月 16 日）された。

１－２　協力内容

上記、タイからの要請に基づき、我が国は、国立感染症研究所、東京大学、大阪大学などの協力を得て、NIH における AIDS 及び新興・再興感染症についての研究能力を向上させることを目的として、感染症の診断・検査技術の強化、病原体情報の解析、及び AIDS コホートの設定などの支援を行った。

（１）　上位目標

NIH における医生物学的研究が、タイの感染症対策に一層貢献するようになる。

（２）　プロジェクト目標

NIH における AIDS と新興・再興感染症の研究機能が向上する。

（３）　成果

1)　HIV 感染と AIDS に関する研究環境が整備される。
2)　高度安全実験室での動物を用いたワクチン評価システムが整う。
3)　HIV ワクチン治療及び血清銀行のための国内検体保管システムの施設が整う。
4)　病原体同定のための機能が向上する。
5)　新興・再興感染症動向調査のための研究所間の連携が強化される。

（４）　投入

日本側

長期専門家派遣	7 名	機材供与	1 億 5800 万円
短期専門家派遣	43 名	ローカルコスト負担	1 億 2300 万円
研修員受け入れ	15 名		

タイ側

カウンターパート配置	22 名
ローカルコスト負担	現地通貨 558 万 9000 バーツ
土地・施設提供	

2.　評価調査団の概要

調査者	保健衛生／AIDS　（団長）	加藤　智弘
		国際航業（タイランド）株式会社
	アシスタント調査員	タニャトーン・シングルアン
		国際航業（タイランド）株式会社
	技術サポート	スチーワン・ヨイルロッブ
		国際航業（タイランド）株式会社

調査期間	評価種類
2006 年 10 月 1 日～2007 年 1 月 25 日	事後評価

3.　評価結果の概要

3-1 評価結果の要約

(1) インパクト

(a) HIV/AIDS （コホート研究）

コホート登録者数の増加やコホート研究成果の専門誌への出版数等により、コホート研究に関して NIH とランパン病院は、プロジェクト終了後も一貫して研究の質を維持・発展させてきたことが確認できた。その研究成果は、タイ国内での HIV/AIDS ワクチン開発に大きく貢献した。それに加え、作業マニュアル（サンプリング、保存、配送方法等）の整備・活用や安定的な研究費獲得が背景となり研究成果の質が向上していることが出版数からも分かる。これは、NIH がプロジェクト目標である“NIH における AIDS と新興・再興感染症の研究機能が向上する。”を将来も継続的に成し得る可能性を示している。

終了時評価にて提言されている品質管理基準である GLP（Good Laboratory Practice）の導入は完了していないことが本調査にて確認できた。

(b) 新興・再興感染症

プロジェクトにより移転された感染症診断技術は、質量共に適当であった為、現在 NIH の日常業務として定着しいる。そして、タイ国各地の政府系病院やその他の医療機関より日々送付される多くの検体を診断することに大きく貢献している。また、作業マニュアルや診断・分析機器の維持管理等も良好であり、プロジェクト終了後もレファレンスラボラトリーとして診断の精度や信頼性も十分確保している。

プロジェクト実施により NIH とセンチネルサイトの新興・再興感染症研究施設としての地位向上が達成されたことにより、現在多くの国際機関や研究機関が NIH のリソースを活用しながら共同研究を行うようになった。

(c) 研究結果の専門誌への掲載

2000 年～2005 年の NIH 研究者の専門誌への掲載数は、増加していることが判明した。プロジェクト実施中である 2003 年までは、日本人専門家が主な著者であることが多かったが、プロジェクト終了後はタイ人研究者が主著者となり日本人専門家が共著となる場合が増え、研究者として成長している状況が確認できた。

(d) 他機関との共同研究

現在、NIH は 6 つの MoU を他の大学や研究機関と結び、共同研究や技術協力を行っている。6 つの MoU の内 4 つの MoU がプロジェクト実施に参加した日本の大学と締結されており、プロジェクトを核として交流が継続・発展されている。

また、MoU の範囲は、共同研究だけではなく奨学金等の NIH 人材育成プログラムも含まれており、総合的に NIH のキャパシティー向上に貢献していると結論付けられる。

(2) 自立発展性

(a) カウンターパートの現況

プロジェクトに参加した主なカウンターパートは、プロジェクト終了後も NIH で以前と同様の研究領域で活動を行っている。そして、プロジェクト終了後も様々な分野で日本人専門家と共同研究を行っていることが確認できた。

(b) 組織及び政策状況

保健省（MoPH）の下部組織としての NIH の位置付けは、プロジェクト終了後も変わりが無い。しかし、NIH が東南アジア諸国連合感染症ネットワーク (ADSNet)等の多国間ネットワークにタイのレファレンスラボラトリ

ーとして参加していることからNIHの相対的な位置付けは向上していると判断できる。

(c) 財政状況

NIH の活動予算状況を示す統計資料は今回の調査では入手できなかった。そこで、上位組織である MoPH と DMSc の活動予算状況（2002 年から 2005 年の予算上昇率 MoPH：7.8%、DMSc：19.6%）から判断すると、NIH の予算は、プロジェクト終了後の活動予算は現状維持以上であると推察できる。

3-2 プロジェクトの促進要因

レファレンスラボラトリーである NIH は、HIV/AIDS 研究や感染症診断を主とする研究活動の質を維持・向上させることで、インパクト（波及効果）を発現させ、同時に自立発展性を確保してきた。NIH の研究活動は、学術的な側面より実質的な感染症予防や防止により強く関係しており、研究活動の質向上が上位目標；“タイの感染症対策に一層貢献するようになる。”の達成に貢献したことは明白である。その達成条件として以下の要因を挙げる。

(1) インパクト発現を促進した要因

- NIH 内部で研修・博士号取得奨励等による研究者の能力向上に積極的であった。（研究能力向上）
- 他の研究機関との共同研究が盛んに行われた。（新技術の導入、研究費安定）
- 研究成果が専門誌に多く掲載されるようになった。（感染症対策への直接的な応用が可能、共同研究促進）

(2) 自立発展性強化を促進した要因

- プロジェクト終了後も人的流出が無い。（人材確保）
- 移転された知識及び技術が現在の研究活動に対しても有効である。（技術確保）
- NIH の相対的位置付けの維持・向上している。（組織的優位性確保）
- 財政状況が安定しており研究活動に障害を与えていない。（財政的安定性確保）

(3) その他の促進要因

- 鳥インフルエンザ等の感染症が猛威を振るった。（感染症対策・政策への緊急性が認識された）
- 多国間感染症対策ネットワークの必要性が広く認知された。（リファレンスラボラトリーとしての相対的位置付け向上）
- 感染症対策への国際協力の必要性が認知された。（同上）

3-3 プロジェクトの阻害要因

特に該当なし

3-4 予想外に発現したインパクト

(a) 検体提供者情報を含む血清データベース

終了時評価の段階で検体提供者の社会的背景と関連付けられた 48,000 以上の血清が収集され、そのデータベースが構築された。これらの情報は、将来の NIH の貴重な研究資源と見込まれる。

(b) DNA シーケンス解析

2004 年 9 月より NIH とマヒドン大学で DNA シーケンス解析のプロジェクトが開始された。NIH は、プロジェ

クトで移転された技術を利用しながら解析作業を行い、膨大な研究成果を産出した。

3-5 フォローアップ状況

2004年5月6日～2005年3月16日迄､1名の日本人長期専門家がNIHに派遣された｡主な指導分野は､HIV/AIDSを中心とする感染症診断技術であった。技術的な指導成果の他にコホート研究を協力終了後もタイ側のみで運営できるようNIH及びランパン病院の体制を確立したことは、フォローアップ活動の大きな成果である。

3-6 結論

プロジェクト実施にて発現したインパクトは、プロジェクト終了後もNIH、ランパン病院、指定病院の日常業務となり十分維持されている。また、各研究者の自助努力により検査・診断機能が以前より発達していることが確認できた。この背景には、NIH及び地方病院の組織的及び予算的な安定が国家保健政策に沿った第9次国家保健医療改革計画（2001～2006）にて確保されたこと、また鳥インフルエンザやデング熱等の感染症流行が国境を越え流行したこと等で感染症予防・対策への重要度が増していることがある。

上記の結果を総合的に判断するとNIHの役割である“リファレンスラボラトリー”としての機能は現在、プロジェクト上位目標である「タイの感染症対策に一層貢献する。」を十分果たしており、この機能は今後も維持・拡張され、ボーダーレスな保健医療分野でのタイ王国を代表する研究所として東南アジア地域のみならず国際的な役割も果たしていくことになると考えられる。

3-7 提言

上位目標を高いレベルで達成するために以下の提言を行う。

(1)品質管理基準の導入

今後国際的な協力や共同研究等の必要性が高まることを考慮してNIHの各研究室（特に動物センター）に品質管理基準であるGLP（Good Laboratory Practice）を導入することを再度、提言する。品質管理基準導入により、HIVワクチン開発成果の信頼性が高まることが特に期待できる。

(2) NIHデータベースの活用

感染症のコントロールは、経済活動の拡張により迅速さが求められるようになっている。また、国家保健政策でもe-Heathの実現を目指していることから、これまで蓄積してきた研究・試験結果をITネットワーク上で地方病院、その他の研究所と共有しながら感染症コントロールを実施する体制を構築する。

3-8 教訓

- プロジェクト終了後も、専門家とカウンターパートが継続した関係を維持することは、研究技術レベルの発展的な向上に貢献する。研究能力強化プロジェクトにおいては、協力期間中に関係研究者間の継続的なネットワーク作りを行っておくことが有益と思われる。
- 研究能力向上にかかる協力においては、カウンターパート個人及び組織の現状の能力、レベルと達成目標を十分に踏まえ、日常業務内で無理のない機材選定、アドバイスを行うことが重要である。

1. Outline of the Project

Country： Kingdom of Thailand		Project Title： The project for strengthening of National Institute of Health capabilities for research and development on AIDS and emerging infectious diseases
Issue/ Sector： Public Health		
Division in Charge： 1st Medical Section, Medical Cooperation Division		Cooperation Scheme： Technical Cooperation
Period of Cooperation	（R/D）： 24th Dec, 1998 1st March, 1999～28th Feb, 2004 (Expert) : (F/U）： 6th May, 2004～16th March, 2005	Total Cost：980 million JP yen
		Partner Country's Implementing Organization： National Institute of Health, Department of Medical Science, Ministry of Public Health
		Supporting Organization in Japan： National Institute of Infectious Disease, University of Tokyo, Osaka University, etc
		Related Cooperation： R/D: 2.45 billion JP yen (1984) 1.46 billion JP yen(1986) 131 million JP yen (2001)

1-1 Background of the Project

The National Institute of Health (hereinafter NIH) was officially established in 1986 by the Japanese Grant Scheme, which procured buildings and facilities worth 2.45 billion JP yen (1984) and 1.46 billion JP yen (1986). NIH, belonging to the Department of Medical Sciences (hereinafter DMSc), Ministry of Public Health (hereinafter MoPH), is responsible for research and development (science and technology) to prevent and control diseases. NIH also serves as the national reference laboratory for various etiologic agents.

The Ministry of Public Health, given the serious infectious diseases and HIV/AIDS situation in Thailand, cooperated with JICA under the project of 「NIH project」(1994～1986) and 「Prevention and Control on AIDS」(1993～1996). All of the activities were successfully completed as the basis for further steps to be taken and for more collaboration between the Thai and Japanese Governments in AIDS project. The subsequent project proposal from NIH was submitted to JICA focusing on AIDS vaccine development and the increasing importance of other emerging infectious diseases.

In addition, a follow-up project (2004～2005) was additionally implemented after all the mentioned activities were completed.

1-2 Cooperation Overview

（1） Overall Goal

NIH conducts biomedical studies contributing further to the control of infectious disease in Thailand NIH.

（2） Project Purpose

NIH improves its capabilities for research on HIV/AIDS and emerging and re-emerging infectious diseases.

（3） Project Outputs

1) Conditions facilitating studies of HIV infection and AIDS are strengthened.
2) HIV-1 vaccine evaluation system using animals in the containment laboratory is established.
3) Facilities for the national repository system for HIV vaccine trials and the serum bank are established.
4) Capabilities of identifying etiologic agents are improved.
5) Laboratory network for surveillance is established.

（4） Project Inputs

Japanese side

Long term expert	7 persons	Equipment supply	158 million JP yen
Short term expert	43 persons	Local cost	123 million JP yen
No. of trainees Received in Japan	15 persons		

Thai side

Counterparts	22 persons
Local cost	5 million 589 Thousand baht
In kind	

2. Evaluation Team and Period

Members	Community Health/AIDS (Team Leader)	Tomohiro Kato Kokusai Kogyo (Thailand) Co., Ltd.
	Assistant Researcher	Thanyatorn Singrueng Kokusai Kogyo (Thailand) Co., Ltd.
	Technical Support	Sucheewan Yoyrurob Kokusai Kogyo (Thailand) Co., Ltd

Period of Evaluation	Type of Evaluation
1st/October/2006～30th/January/2007	Ex-post Evaluation

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Impact

(a) HIV/AIDS (Cohort Study)

It could be concluded based on the facts such as the number of registered patients and the publication of the cohort study that the cohort study associated with NIH and Lampang Hospital maintains and improves the quality of its output and performance contributing to the development of HIV/AIDS vaccines ever since the termination of the project. In addition,

facts and findings which are discussed in Chapter 3.3; “Sustainability” such as availability of manuals, financial support, etc (Annex; Questionnaire, Interview and Field visit survey) could ensure the expansion of this outputs, promising the achievement of the project objective as “NIH improves its capabilities for HIV/AIDS“ at a higher level in future. Although there is no end to the control of infectious diseases, improvement of NIH research capacities ultimately contributes to a healthy life for the citizens of Thailand and their neighbors.

The installation of GLP (Good Laboratory Practice) has not yet been completed although it was recommended in the terminal evaluation report.

(b) Emerging and Re-emerging Infectious Diseases

As the result of the interview and questionnaire surveys, it was confirmed that many different diagnoses, of which particular knowledge and techniques were principally transferred by the project, of collected samples have become a part of NIH daily works by following routine procedures. This has been realized rather smoothly because of the appropriate input both qualitatively and quantitatively. In fact a lot of samples are delivered from mainly provincial hospitals to NIH for identification of pathogens. No statistical data how many samples are diagnosed is obtained during the study but this fact shows that NIH provides technical services to the local public health units for the control of infectious diseases in Thailand.

Moreover, according to the result of interview survey to Ms. Krongkaew of EID project manager, currently many international organizations have been collaboratively conducting EID surveillance in Thailand by utilizing present resources such as facilities and human resources strengthened in the project. This could have been initiated that the achievement of the project attracted many organizations willingly collaborating with NIH and sentinel laboratories.

(c) Publication

According to the statistical feature of NIH publication, the number of publications from 2000 to 2005 is increasing. Moreover, the number of Thai authors as main authors, after the termination of the project, is bigger than that before the termination. This proves that NIH researchers improved their capacity as researchers satisfactorily to be eligible for their research reports to be published in qualified journals and magazines.

(d) Collaboration with Other Institutes

NIH has currently six MoU with other institutes. Four out of six institutions are Japanese universities, which have been notably involved in the implementation of the project. By analyzing the field of collaboration, these Japanese universities seek for the academic research base in Thailand rather than opportunities for international development cooperation.

In addition to the collaboration works, there were opportunities for C/P personnel to receive financial support from external organizations/ agencies for their academic or institutional capacity building.

(2) Sustainability

(a) Current Situation of Counterpart Personnel

All counterpart personnel have not been transferred to other offices. They are mostly working for the same or similar field of work. This has been enhancing the collaborative research activities currently between Japanese experts and NIH.

(b) Organizational and Policy Aspect

There is no particular change to NIH`s position among organizations under MoPH. However, the participation of NIH in South East Asian Nations Infectious Diseases Outbreak Surveillance Network (hereinafter ADSNet) could prove that related positions of NIH as the Thai national reference laboratory is rising. Furthermore, it is expected that the presence of NIH as a referral information resource in the Health Information System would become indispensable.

According to the results of the questionnaire and interview survey, it is understood that the perceptible change or effect due to the decentralization is not still available in NIH, Lampang hospital and sentinel laboratories.

Based on the facts and findings, it could be concluded that sustainability of the project in organizational aspect would be ensured if universal health care policy and decentralization act do not become a big burden.

(c) Financial Aspect

According to the tendency of budget transition of both MoPH and DMSc (the increment % of their budgets between 2002 and 2005 is respectively 7.8% and 19.6%), the amount of NIH budget might have also the same or a similar figure. The fact that the outlay of central government for the health sector is increasing may indirectly support the relevance of this hypothesis.

Moreover, the number of collaborating activities has significantly increased since the termination of the project. This could surely strengthen the financial stability of NIH.

3-2 Analysis of Factors of Impact and Sustainability

Considering the nature of NIH as a national reference laboratory, it is the quality of performance on research activities that have potentially affected the achievement of the project's overall goal. In order to fulfill the academic or institutional reputation, there would be the following key factors.

(1) Impact Factors

- Capacity Building of researchers and facilities by the internal training program and the attainment of doctoral degree (Technical Capacity)
- Broad collaboration with other institutes/ organization (Technical Capacity and Financial Stability)
- Publication of research results (Direct benefit on the control of infectious diseases and creation of new research project)

(2) Sustainability Factors

- No outflow of C/P personnel participated in the project is identical after the termination of the project (Human Resource).
- Knowledge and techniques are still relevant to research activities (Techniques).
- The relative position of NIH in MoPH is kept the same or has enhanced since the termination of the project (Organization).
- The financial condition of NIH is stable or more capable since the termination of the project (Finance)

(3) Other Factor

- Outbreak of infectious diseases in the region (Need for emergency measures on infectious diseases)
- Need of network for the control of infectious diseases (Institutional Framework)
- International cooperation (International Relation)

3-3 Factors hindering/ limiting the project achievement

The study team identified no particular problems which may disturb the impact and sustainability of the project.

3-4 Impact Not Anticipated After Project Completion

(1) Establishment of Database

The basic information corresponding to clinical symptoms, diagnosis results, social backgrounds and marital sexual

relationship of registered individuals was securely input into NIH host computer. The samples associated with the social backgrounds of specimen donors and more than 48,000 serums could be nothing but a surprising result of activity continuation from the project.

(2) Completion of DNA Sequence Analysis

The collaborative research activity between NIH and Mahidol University of Thailand on DNA sequence analysis has been successfully completed. The serum samples used in this research were provided from the Cohort Study. Mahidol University played the role of a laboratory to perform the sequence of samples, whereas NIH conducted molecular epidemiological analysis of the sequence data, including subtype distribution, new recombinant forms frequency and characteristics of drug resistance mutations (Report of Follow-up, JICA, 2005).

3-5 Follow-up Situation

One Japanese long term expert was dispatched to NIH after the termination of the project.

3-6 Conclusion

Impacts of the project have already been incorporated into the NIH basic function and work since the termination of the project. Moreover, the respectful self efforts of NIH researchers have enhanced NIH diagnostic and analytical capabilities. This will attract more institutes/ agencies for collaboration in the fields of HIV/AIDS and EID.

Behind this significant achievement, it should be noted that stable financial background, coincidently the recent rapid economic recovery of Thailand, of NIH and other related organizations and the 9th National Health Development Plan (2001-2006) along with the Health Policy in Thailand provided break-though for further development of NIH. Moreover, due to the recent cross-border outbreak of deadly infectious diseases like avian influenza (so called bird flue) reminded the Thai government and people of the importance of infectious disease control and prevention, which is currently controlled by NIH with a satisfactory level (this proves that the achievement of overall goal of the project is attained) and might be projected on the future direction of National Policy on Health.

3-7 Recommendation

In order to achieve the project overall goal with higher level, the following issues are considerably recommended.

(1)Introduction of Laboratory Standards

As mentioned in the terminal evaluation report, NIH, especially the Animal Center, should install GLP standards in order to ensure the generation of high quality and reliable test data of HIV vaccine candidates for clinical tests.

(2) Utilization of NIH Database

The control of infectious diseases requires quicker response as economic activity of Thailand inflates more around the region and the national policy on health promotes the integrated information system empowered by internet technology. NIH should establish a more enhanced information system which may potentially integrate the national information system and provide useful information to provincial hospital and laboratories in future. This will strongly support the effective control and prevention of cross-border diseases and eventually the achievement of the national health policy.

3-8 Lesson Learned

During the study the following issues were confirmed as for a positive lesson.

- Regular communication between Japanese experts and C/P personnel, even after the project, have enhanced the technical capacity of NIH and generated the research opportunities. Therefore, the encouragement of the researcher's network will benefit the continuous expansion of the project impact and enhance the sustainability of the project achievement, especially like this type of technical cooperation.
- Knowledge and techniques transferred by the project are still relevant and useful in NIH, which has produced enormous result of research activities. From this outcome, the reasonable project inputs designed based on the institutional capacity analysis and the project purpose are considerably important.

1 The Outline of the Ex-post Evaluation

1.1 Background and the Purpose of the Project

The Japan International Cooperation Agency (JICA) Thailand Office programmed and conducted an ex-post evaluation of selected projects which were completed three years ago. In this study two projects were evaluated in accordance with the JICA Guideline for Evaluation (JICA, 2004).

The result of this Study will contribute to better informed decision-making and will be shared by the counterpart organizations of each project. The main purposes of the evaluation study are as follows.

1. To evaluate and confirm the impact and sustainability of the projects after a certain period has passed since the completion of the projects.
2. To derive lessons and recommendations for the improvement of JICA country Programs and for the planning and implementation of more effective and efficient projects.
3. To ensure accountability to tax payers through producing reports in both electronic and printed forms.

1.2 Evaluation Team and the Study Period

1.2.1 Evaluation Team

Table 1-1: Member List of Study Team

No.	Name	Department / Organization
1	Mr. Tomohiro Kato	Team Leader (Community Health / AIDS) Kokusai Kogyo (Thailand) Co., Ltd.
2	Ms. Thanyatorn Singrueng	Assistant Researcher Kokusai Kogyo (Thailand) Co., Ltd.
3	Ms. Sucheewan Yoyrurob	Technical Support Kokusai Kogyo (Thailand) Co., Ltd.

1.2.2 Study Period

Table 1-2: Study Period

No.	Period	Activities
1	～1st of October, 2006	Preparation of evaluation grid and questionnaire
2	2nd of October ～ 15th November, 2006	First implementation including distribution of questionnaire, interview and field trip
3	16th November ～ 20th December, 2006	Reporting of draft evaluation and draft final report
4	15th January ～ 30th January, 2007	Second implementation including supplementary survey
5	1st of February ～ 15th February, 2007	Reporting of final report

1.3 Outline of the Project

The outline of the Project for Strengthening of National Institute of Health Capabilities for Research and Development on AIDS and Emerging Infectious Disease (hereinafter referred to as the "NIH Project") is summarized in the tables shown below.

Table 1-3: Outline of NIH Project

Country	The Kingdom of Thailand		
Project Title	Project for Strengthening of National Institute of Health Capabilities for Research and Development on AIDS and Emerging Infectious Disease		
Project Overall Goal	NIH conducts biomedical studies contributing further to the control of infectious diseases in Thailand.		
Project Objective	NIH improves its capabilities for research on HIV/AIDS and emerging and re-emerging infectious diseases.		
Project Outputs	• Conditions facilitating studies of HIV infection and AIDS are strengthened. • HIV-1 vaccines evaluation system is established using animals in the containment laboratories (BSL3 laboratory). • Facilities are established for the national repository system for HIV vaccine trials and the serum bank. • Capabilities are improved for identifying etiologic agents. • Laboratory network is strengthened for surveillance is strengthened.		
Issue/ Sector	Public Health		
Cooperation Scheme	Technical Cooperation		
JICA Division in Charge	Medical Cooperation 1, Div. Medical Cooperation		
Implementing Organization in Thailand	National Institute of Health, Department of Medical Science, Ministry of Public Health		
Supporting Organization in Japan	National Institute of Infectious Diseases, University of Tokyo, Osaka University, etc		
Period of Cooperation	R/D 24th Dec 1998 1st March 1999	～	28th Feb 2004
	F/U 6th May 2004	～	16th March 2005

2 Study Methods

2.1 Stakeholders and Information/ Data Collected

The stakeholders of the project are identified as in the table below as well as information/ data expected from them.

Stakeholders	Information/ data collected
- National Institute of Health (NIH) - Cohort Study Team, Lampang Hospital - Sentinel Laboratories	- Document/ material related to the project - Questionnaire - Interview

2.2 Study Methods

The purposes of this evaluation study mentioned in the previous chapter were examined mainly by the methods respectively to literature review, questionnaire survey, interview survey, and field visit.

The Study team initially started its survey from the collection of materials related to the Project. The collection for the Project's overall goal and purpose was based upon a material review related to the Project. After confirming those through the collected materials, the Study team went on to the works for the preparation of questionnaires to be distributed to counterpart personnel as listed in the table in Chapter 3.3.1; "Current status of counterpart personnel", while focusing especially on the impact and sustainability of the five evaluation criteria described below.

The five evaluation criteria are part of a basic evaluation method set by the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) to evaluating the project achievements. All of the JICA projects are presently evaluated by this evaluation method.

In terms of the Study, it focuses mainly on two of the five evaluation criteria: which are "*impact*" – which is expected to appear a certain period of time after the end of the project, and "*sustainability*"- where evaluators look at whether the effect is continually produced after the end of the project. Up to the Project terminal evaluation, these criteria were always examined on the basis of their prospects, but in the ex-post evaluation, they are examined on the basis of performance.

Table 2-1: Main Checkpoints of Ex-post Evaluation

Impact	The impact of the Project is assessed by measuring either positive or negative influences made by the Project, which are not originally expected in the Project plan.
Sustainability	The sustainability of the Project is assessed by organizational, technical and financial aspects by the extent to which the achievements of the Project are sustained or expanded after the Project is completed.

The Study team eventually produced the Study results through the methods above, and released recommendations and lessons learned to contribute to JICA's future efforts on technical cooperation projects.

3 Study Results

3.1 Impact of the Project

The impact of the project after project termination was evaluated comprehensively by individually assessing the following subjects, which were evaluated in the terminal evaluation study.

- HIV/AIDS (Cohort Study)
- Emerging and Re-emerging Infectious Diseases
- Publication
- Collaboration with Other Institutes

The important point of this evaluation is emphasized as the extent to which the project overall goal has been achieved since project termination strengthening/ improving the functions of NIH. Therefore, the impact, actually substantiated during the project, should be summarized based on the terminal evaluation result in order to make sure the starting point of this evaluation. The summary of the terminal evaluation results of "Impact" are shown below.

Table 3-1: Summary of impacts at the end of the project

HIV/AIDS (Cohort Study)

The project has largely improved NIH's capability for HIV/AIDS studies and has succeeded in expanding the capacity and scope of research subject by means of combined NIH laboratory and the Lampang couple cohort. For instance, the activities under cohort study enabled them to make easy diagnosis of HIV infection and to measure viral load for infants in Lampang hospital where such diagnosis has not been feasible before.

Emerging and Re-emerging Infectious Diseases

The capacity for EID has been strengthened in terms of identifying pathogenic agents and a surveillance laboratory system including collecting samples, analyzing samples and feeding back the necessary information of EID in border areas of Thailand.

Publication

Some researches have been already recognized as having published papers, compiled reports or guidelines. These works are associated with benefit of people living with HIV/AIDS or people at the risk from emerging and re-emerging infectious diseases.

Collaboration with Other Institutes

Improved capacity of NIH in terms of facilities, staff and quality of work will attract other collaborations to participate in research.

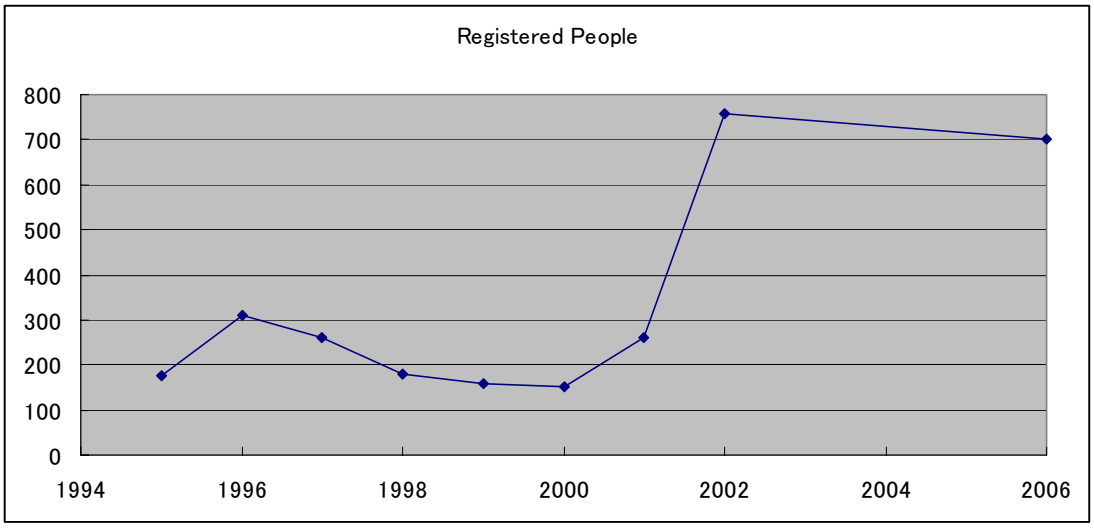
(Source: Terminal Evaluation, JICA, 2003)

3.1.1 HIV/AIDS (Cohort Study)

The cohort study has been conducted between Day Care Center of Lampang Hospital and NIH since the early state of the previous project (Mid-term Evaluation, Terminal Evaluation and Report of Follow-up, JICA). In this study, HIV-infected individuals and HIV sero-negative spouses of HIV-infected individuals are recruited for the cohorts. Samples for this study are collected from these registered individuals and utilized for several HIV vaccine studies.

a. Number of Registration

The number of registered patients and their spouses has been changing according to the degree of effort made by the implementing agency. The figure below shows the number of registrations from 1995 to 2006. The number of registrations from 1995 to 2002 is inferred from the Report of Mid-term Evaluation while the figures from 2003 to 2006 are illustrated based on the results of the interview survey as "*The number of registered individuals has been gradually decreasing since 2002 but is remaining around seven hundred for the time being.*"



(Source; Report of Mid-term evaluation, JICA, 2002 & Interview result)

Figure 3-1: Number of registration in cohort study

The number of newly registered patients at the Day Care Center of Lampang Hospital started to decline after the peak in 1996, then "owing to the dedicated work by the cohort team, new patient registration increased in 2001 and 2002."(Terminal Evaluation Report, JICA, 2003).

According to the HIV/AIDS report prepared by WHO, the number of newly infected HIV/AIDS patients in Thailand is not increasing while the number of deaths of infected patients is increasing. Thailand is one of the rarest countries in Asia, which successfully prevented new HIV infections (HIV/AIDS Thailand Profile UNAIDS; http://www.unaids.org/en/Regions_Countries/Countries/thailand.asp). Under this situation, the number of registrations is kept at almost the same level even after the project was terminated, which could be recognized that the cohort study is still active and popularized around the region.

b. Follow-up Activity in Cohort Study

In the project the following activities (hereinafter Phase I) were executed from 1999 to 2003 with expected quality performance (Terminal Evaluation, JICA, 2003).

- Introduce relevant techniques for immunological, virological, molecular studies of HIV-1 infection and AIDS.
- Establish P2/3 laboratories for radioisotope experiments.

- Develop cohorts to study HIV-1 infection and AIDS pathogenesis.
- Establish field stations for cohorts.

According to the report of a JICA expert, Dr Ariyoshi K. (2004-2005), the performance of these activities was maintained by his follow up activities. From July 2000 to September 2004, the number of participants in the cohort study reached 1,540 people in whom 1,385 were HIV-infected individuals, 155 sero-negative spouses of HIV-infected individuals were included. Both spouses of 185 concordant and 74 discordant couples were enrolled. 534 HIV-infected individuals have started the study (Report of Follow-up, JICA, 2005).

He provided extensive technical training not only to C/P personnel, but also nurses, data operators, technical staff and social workers in focus of the operation and management of the cohort study. Remarkably, during his period, the proposal of cohort study (hereinafter Phase II) was prepared by the cohort study team of Lampang Hospital with the support of Dr. Ariyoshi and submitted to the ethical committee of National Health in 2004. This proposal was approved by the ethical committee of National Heath and its approval enables NIH and Lampang Hospital to conduct the cohort study by 2010. The newly approved cohort study has a five years program with the following activities.

- Follow-up of the study participants
- Host genetic polymorphisms studies
- Immunology studies
- Sequencing of virus genes
- Opportunistic infections and other co-infections

It is quite obvious that the focus of Phase I activities could be abridged as nothing but the establishment/ set-up of the study system whereas Phase II is programmed to apply its system on formulating HIV/AIDS vaccines. This clearly proves that the capacity of the cohort study team associated with NIH and Lamapang Hospital reaches a higher level compared with the level at the time of the terminal evaluation.

c. Research Publication and Contribution to Policy Making

Besides, the fact that the number of publications on international journals or magazine (Annex; List of Publication) regarding HIV/AIDS study has increased recently may support the improvement of research capacities in cohort study team for HIV/AIDS.

Five studies on HIV/AIDS were presented by the cohort team at the 15th International AIDS Society held in Bangkok in July 2004 as the achievement of the cohort study borne remarkable results in this sphere (Report of Follow-up, JICA, 2005).

The clinical trials of an anti-HIV generic drug developed in Thailand were conducted on 543 patients registered in the cohort study. The result of trials was employed to stipulate the policy on HIV treatment by committees of MoPH (Report of Follow-up, JICA, 2005).

d. Conclusion

Based on the findings and facts described above, eventually it could be concluded that the cohort study associated with NIH and Lampang Hospital maintains and improves the quality of its output and performance contributing to the development of HIV/AIDS vaccines ever since the termination of the project. In addition, facts and findings which are discussed in Chapter 3.3; "Sustainability" such as availability of manuals, financial support, etc (Annex; Questionnaire, Interview and Field visit survey) could ensure the expansion of this outputs, promising the achievement of the project objective as "NIH improves its capabilities for HIV/AIDS" at a higher level in future. Although there is no end to the control of infectious diseases, improvement of NIH research capacities ultimately contributes to a healthy life for the citizens of Thailand and their neighbors.

This evaluation result is strongly supported by the results of the questionnaire survey targeting C/P personnel involved in the cohort study. According to it, respondents rated the degree of the project overall achievement after termination of JICA technical cooperation high or very high (Annex; Questionnaire survey). Moreover, the comments from selected C/P personnel in the interview survey illustrate self confidence as a researcher and further vision for the cohort study (Annex; Comments of Questionnaire survey).

3.1.2 Emerging and Re-Emerging Infectious Diseases

Thai Ministry of Public Health (MoPH) initiated a national project for surveillance of emerging and re-emerging infectious diseases (EID) in 1999. The target diseases under the EID surveillance were categorized into nine groups comprised of 11 diseases and more than 30 pathogens in total. The EID project designated four provincial hospitals as the sentinel sites to provide laboratory findings together with patient information.

The objective of this project encompasses the following aspects

- Establishment of various manuals for sampling, treatment and delivery from sentinel sites to NIH with specific log sheets in both English and Thai
- Strengthening the capacity of diagnosis in NIH as the National Reference Laboratory

At the time of terminal evaluation, it was concluded that the surveillance laboratory system including the aspects above and the capacity of NIH in terms of identifying pathogenic agents have been strengthened (Terminal Evaluation, JICA, 2003).

a. Sampling and Delivery

According to the result of the interview survey, it was confirmed that manuals specialized for each different disease/ pathogen have been prepared to collect samples of infectious diseases from patients and prescribes the storage method depending on the nature of the target pathogen. These manuals have been prepared since project implementation and periodically updated/ modified based on the latest diagnostic procedures.

Mainly these manuals are used by the staff of sentinel sites, who actually collect and pack samples for delivery to NIH. Therefore, it will be principle to maintain the quality of EID surveillance so that they adequately follow the procedures for sampling and packing. From this point of view, NIH researchers, especially members of EID surveillance, conduct

inspection of sentinel sites and provide technical trainings if necessary.

The availability and proper utilization of facilities such as equipment, chemicals, manuals, etc. for handling sample collection are very important factors which ensure the quality of outputs from the diagnosis and analysis of collected samples. From this aspect, it could be evaluated that manuals originally prepared by the project still keep the existing impact alive circuitously.

Besides, background data associated with infected individuals is also sent on a paper basis to NIH from sentinel sites. All data is compiled and input into a NIH EID surveillance database, which possesses an EXCEL interface. This procedure has been stipulated since project implementation and not changed/ upgraded according to the results of interview survey.

b. Diagnosis at NIH

The most indispensable factors which will guarantee the reliability and accuracy of the result in the diagnosis of infectious diseases are both specific equipment and skills for particular infectious diseases.

Regarding equipment, advanced equipment for a recent trend of diagnosis was installed in NIH and various training was provided for their operation and maintenance through the equipment procurement program of the project (Mid-term Evaluation, Terminal Evaluation, JICA). Furthermore, the achievement at the time of terminal evaluation describes that technical transfer from Japanese experts to NIH C/P personnel on EID has been successfully completed (Terminal evaluation, JICA, 2003). When the study team visited NIH for the interview survey, the condition of the procured equipment (around ten items) and frequency of operation were directly observed with operation log books recorded by researchers. In addition, the tracing survey of procured equipment shows that they are utilized and maintained frequently (Annex; List of JICA procured equipment, NIH).

Presently the availability of sophisticated equipment directly connects analytical ability for particular target pathogens. Consequently, it could be concluded that the availability of procured equipment is still giving great impact to the control of infectious diseases and the research performance in NIH.

Moreover, NIH researchers have much experience of technical training courses, which were organized in various countries, regarding the recent diagnostic manners of infectious diseases (Annex; Summary of Conference and Training, NIH). This could surely contribute, to a certain extent, to the update of technical knowledge and skills. Substantially, the results of the questionnaire are pointing out that the significant outputs from the project after its termination are knowledge and techniques. This was clarified more though the interview survey. According to comments from NIH researchers, they came to have appropriate sufficient knowledge and technical background (skill, facilities, etc) through the project to participate in the international society.

As it was recommended in the terminal evaluation report, Good Laboratory Practice (hereinafter GLP[1]) was not installed in NIH yet. According to the comment from a director of NIH on this matter, the program of this installation has been discussed for time being.

[1] GLP; A system of management controls for laboratories and research organizations to ensure the consistency and reliability of results as outlined in the OECD Principles of GLP and national regulations.

c. Feedback

The results of diagnosis of infectious diseases should be utilized for the following activities.

- Data/ information disclosure to the public
- Data/ information exchange internationally
- Epidemiological survey and capacity building of researchers
- Decision making on infectious disease prevention

(Main Functions of Infectious Disease Surveillance Center of Japan; http://www.nih.go.jp/niid/index.html)

As was mentioned above, the EID surveillance team manages the database of EID in Thailand. It, however, limits accessibility only among NIH researchers. According to the result of the interview survey, some researchers of NIH described the EID surveillance network as a "*Network between NIH and sentinel laboratories still exists but its form is just one way. It means that sentinel laboratories would send the information collected on paper basis to NIH and NIH will input this information into the data base (Excel base). Basically this data base is not accessible for eternal users or researchers. During the project period, the data base was created as a web access basis and after the project period this web page was closed.*" Therefore, the database is not currently open to the public after all.

Regarding data/ information exchange internationally, it could be done though publication and individual contact because the accessibility of the EID database through internet is limited among NIH researchers.

The EID database is fully utilized for epidemiological survey and capacity building of researchers, which is indirectly evaluated from the number of publications and other related performances such as collaborative research, conference/ workshops, etc.

NIH is one of the implementing agencies as a national reference laboratory which is supposed to provide necessary information to decision makers. In this aspect, the Bureau of Policy and Strategy is the core agency in formulating the National Health Development Plan and MoPH plan (Health Policy in Thailand 2006, MoPH, 2006).

d. Conclusion

In principal impacts derived from the implementation of the project are still alive in terms of knowledge, techniques and systems and bring the capacity of NIH for research to a more advanced level, which is evaluated based on the findings and facts discussed in the previous section of this chapter. This could satisfy the project objective.

It, however, should be evaluated to which extent the project overall goal has been achieved since the termination of the project. As Avian Influenza is representing the recent unavoidable outbreak of infectious diseases in Southeast Asia, the importance of reference laboratories, where certain diagnosis processes are stipulated enough to generate reliable and accurate results with international standard, is regarded more indispensable.

As the result of the interview and questionnaire surveys, it was confirmed that many different diagnoses, of which particular knowledge and techniques were principally transferred by the project, of collected samples have become a part of NIH daily works by following routine procedures. In fact a lot of samples are delivered from mainly provincial

hospitals to NIH for identification of pathogens. No statistical data how many samples are diagnosed is obtained during the study but this fact shows that NIH provides technical services to the local public health units for the control of infectious diseases in Thailand.

Moreover, according to the result of interview survey to Ms. Krongkaew of EID project manager, currently many international organizations have been collaboratively conducting EID surveillance in Thailand by utilizing present resources such as facilities and human resources strengthened in the project. This could have been initiated that the achievement of the project attracted many organizations willingly collaborating with NIH and sentinel laboratories.

3.1.3 Publication

The list of publications from NIH researchers is attached in Annex (Annex; List of Publication, NIH). It is summarized based on the information provided from the foreign affair section of NIH.

Table 3-2: Number of Publications from NIH

Year		2000	2001	2002	2003	2004	2005
No. of Publication	Total	1	3	4	5	8	6
	Non-Thai	1	3	0	3	3	1
	Thai	0	0	4	2	5	5
Content	HIV/AIDS	0	2	0	0	1	2
	EID	1	1	4	5	6	4

(Source; Information provided from NIH)

According to the table, the number of publications from 2000 to 2005 is increasing. Moreover, the number of Thai authors as main authors, after the termination of the project, is bigger than that before the termination. This proves that NIH researchers improved their capacity as researchers satisfactorily to be eligible for their research reports to be published in qualified journals and magazines.

The number of publications only cannot be a factor to evaluate the performance of NIH as a national reference laboratory. Nonetheless, the continuation of publications even after the termination of the project should be taken into account for evaluation. In the same way as it was evaluated in the terminal report, works like reports, guidelines are associated with the direct benefit of people living with HIV/AIDS and/ or people at risk from emerging and re-emerging infectious diseases.

3.1.4 Collaboration with Other Institutes

According to the information provided by NIH, the current collaboration activities are summarized in the table below.

Table 3-3: Summary of Collaboration

Name of Collaborator	Period	Field
Cuba Joint Commission for Economic and Technical Cooperation	Feb 2002	- Develop and produce tetravalent vaccine DPT-HB, using DPT and HB from the Gov Pharmaceutical Org of Thailand and CIBG/Herber Biotec S.A. respectively.

Name of Collaborator	Period	Field
		- Enhance trade relations between Cuba and Thai related to biotechnology products - Strengthen closer scientific and technological cooperation - Exchange of information on R&D on Vaccine and Diagnostic Kits for Avian Influenza Virus - Exchange of short course visits
Research Institute for Microbial Diseases, Osaka University, Japan	5 years (Aug 2003 – Aug 2008)	
Graduate school of veterinary medicine, Hokkaido University, Japan	4 years (Jan 2004 – Dec 2007)	- Exchange of information - Establishment of networks for global surveillance of zoonosis - Provide training courses - Establishment of international collaboration centers for zoonosis control
Osaka University, Japan	5 years (Aug 2005 – Aug 2010)	- Exchange of researchers, lectures, students, symposia
Nagasaki University, Japan	5 years (Mar 2006 – Mar 2011)	- Exchange of information, researchers, lectures, symposia
Individual	5 years (Mar 2006 – Apr 2011)	- Exchange of technical information including experimental and test data, techniques, methods, processes, know-how, and inventions

Four out of six institutions are Japanese universities, which have been notably involved in the implementation of the project. By analyzing the field of collaboration, these Japanese universities seek for the academic research base in Thailand rather than opportunities for international development cooperation.

In addition to the collaboration works above, there were opportunities for C/P personnel to receive financial support from external organizations/ agencies for their academic or institutional capacity building (Report of follow-up, JICA, 2005). The donors and fields of assistant are summarized as shown in the table below.

Table 3-4: Scholarship and Sponsorship

Name of Donors	Field of Assistant	Remarks
Japanese Foundation for AIDS Prevention	Sponsorship for international research	Contract research scheme
Japan Health Science Foundation	Sponsorship for international research	Grant research scheme
Japan Society for the Promotion of Science	Scholarship for doctoral program	2 NIH staff received scholarship for their doctoral program.
International Medical Center of Japan	Sponsorship for international research	Contract research on international medical cooperation

The opportunity for these assistants could have been prearranged by the Japanese experts. Therefore, this could be evaluated as an impact indirectly generated by the project.

As summarizing the findings above, the impact derived from the assistants and current collaboration works between NIH and other organizations would contribute mainly to improvement of institutional research capabilities including researchers and facilities. This will be undoubtedly a strong boost of NIH enhancement as a national reference laboratory.

3.2 Impact not anticipated after Project Completion

3.2.1 Establishment of Database

The number of specimen collected from registered individuals reached 6,119 at the time of February 2005. Furthermore, more than 48,000 serum samples refined from collected specimens are safely refrigerated under super low temperature. The basic information corresponding to clinical symptoms, diagnosis results, social backgrounds and marital sexual relationship of registered individuals was securely input into NIH host computer. This will provide an important resource for future researches on HIV/AIDS (Report of Follow-up, JICA, 2005).

The project facilitated the collection of samples in order to strengthen the capacity of HIV/AIDS research. The samples associated with the social backgrounds of specimen donors and more than 48,000 serums could be nothing but a surprising result of activity continuation from the project. Eventually this accumulation of each step is followed by the various types of research at present.

3.2.2 Completion of DNA Sequence Analysis

The collaborative research activity between NIH and Mahidol University of Thailand on DNA sequence analysis has been successfully completed. The serum samples used in this research were provided from the Cohort Study. Mahidol University played the role of a laboratory to perform the sequence of samples, whereas NIH conducted molecular epidemiological analysis of the sequence data, including subtype distribution, new recombinant forms frequency and characteristics of drug resistance mutations (Report of Follow-up, JICA, 2005).

Obviously it could be understood that NIH took the lead in executing this research. This capacity for data management work is not directly strengthened by the project but as the result of a ripple effect of project achievement. This, yet, will contribute consequently to the development of an HIV/AIDS vaccine.

3.2.3 Conclusion

According to the results of the interview survey, many respondents described that the knowledge and techniques transferred from the project were more useful and valuable beyond their expectation. These positive unexpected impacts may have been realized because of the following factors.

- Appropriate input both technically and quantitatively (List of Procured Equipments)
- Good relationship between Japanese experts and the Thai C/P (Interview survey & Existing document Survey)

- Sincerity of the Thai C/P for the control of infectious diseases (Interview survey)

As the result of synergy with these factors, consequently NIH has enhanced its capacity generating several opportunities to conduct collaborative researches with other institutes/ organizations introduced above. This definitely contributes the technical and administrative impacts to the strengthening of NIH research capabilities.

3.3 Sustainability

3.3.1 Current Situation of Counterpart Personnel

The names of the counterparts are listed in the table below. This table includes the role and responsibility of the counterpart personnel in the project period and current position and section. During the study the study team communicated with them for either questionnaire survey or interview survey.

Table 3-5: List of Counterpart Personnel

Name	Role and Responsibility in the project	Present position	Section
Dr. Pathom Sawanpanyalert	Cohort Studies	Director of NIH	Director of NIH
Dr. Panita Patipwanitch		Head of General Medicine Section, Lamphang Hospital	General Medicine of Lamphang Hospital
Mrs. Pimjai Naigowit	National repository system for HIV-1 vaccines and Serum Bank	Senior Medical scientist	Medical Sciences Technical Office
Mrs Areerat Sa-ngarsang	Emerging & re-emerging diseases	Medical technologist	Arbovirus
Ms Atchareeya A-nuegoonpipat		Medical technologist	Arbovirus
Dr. Wimol Petkanchanapong		Medical technologist	Clinical Immunology
Mrs Sanit Kumperasart		Medical scientist	Neural and Circulatory
Ms Aree Thattiyaphong		Medical technologist	Enteric Bacteria
Dr. Raywadee Butraporn	Evaluation system for vaccines with animals in P2/P3 laboratories	Veterinarian (Head of the Center)	Laboratory Animal Center
Mr. Virat Sumateewatanakul		Veterinarian	Laboratory Animal Center
Mr. Wattanapong Wootta	Laboratory Network for surveillance	Medical scientist	Parasitology & Animal reservoir host
Ms. Krongkaew Supawat		Principle Medical Scientist	EID office

All counterpart personnel have not been transferred to other offices. They are mostly working for the same or similar field of work.

3.3.2 Organizational and Policy Aspects

a. Organizational Structure of NIH among MoPH

The Ministry of Public Health (MoPH) is the principle agency responsible for promoting, supporting, controlling, and coordinating all health services activities for the well-being of the Thai nation. There are three clusters and the Office of Permanent Secretary as shown in the organization chart attached in Annex (Organizational Chart). NIH belongs to Department of Medical Science.

As it is shown in the organization chart, NIH comprises of three main functional sections: the administrative section, Laboratory section, and Supporting section. The most important

function as a national reference laboratory is owned by the Laboratory section, where HIV/AIDS vaccine trials and EID surveillance have been conducted. The organizational position of NIH has not changed since the termination of the project.

b. NIH in the region

NIH participates in ASEAN Disease Surveillance Network (ADSNet[2]). The number of cooperating organizations/ institutes of Thailand is ten. Out of ten, there are only two institutes which have general laboratory facilities: namely NIH and Mahidol University.

c. Manuals/ Guidelines

As it was mentioned in Chapter 3.1.2a, manuals prescribing the standard procedures of analysis and diagnosis have been established since the implementation of the project. These manuals are now the source of reliability.

In addition, as the result of the questionnaire survey, it is confirmed that the knowledge and techniques are still relevant to manuals.

d. Status of Procured Equipment/ Facilities

The condition of the procured equipment and facilities, which the study team could observe in the visit to NIH, was good (Picture; Procured Equipments). According to their log books, maintenance and repair are provided regularly. The fact that NIH researchers have been utilizing this equipment continuously could associate with the generation of certain research outputs supportively contributing to technical stability for NIH research on HIV/AIDS and infectious diseases. A particular comment from the interview result may describe the significant impact generated from the procured equipment; “The research activities of basic and applied research have been much improved by using advanced techniques, e.g., PCR, nucleotide sequencing etc.”

The list of equipment and facilities is attached in Annex (Annex; List of Procured Equipments). Their conditions are evaluated by the C/P personnel of the project. Their evaluation also shows good condition of equipment and facilities.

e. Related Issues of National Health Policy to NIH

The 9th National Health Development Plan (2001-2006) formulated along with Health Policy in Thailand is the current roadmap aiming at well being and entire health system development. The vision of this plan focuses on health security and universal health care coverage for every person in the Thai society through the people participation process.

The issues related to NIH activities are discussed in the following subsections.

e.1 Health Information System (e-health)

The 9th plan aims at the development of an electronic health information system to link the

[2] The purpose of ADSNet is to facilitate ASEAN regional cooperation to improve infectious disease outbreak detection and response capabilities.

three systems: namely health care providers, health insurance funds, and medical records in order to improve their quality and more efficient use of resources. This information system will finally link the individual records through a 13 digits I.D.

According to the flowchart of this information system, NIH will be identified as a part of MoPH and designated to provide referral information of infectious diseases.

e.2 Universal Health Care Policy (30-Baht Policy)

This policy targets to improve the health insurance coverage of the Thai population. Basically any health care service provided in the governmental hospital will be charged at 30 Baht only. Therefore, people with a low income level could also receive a qualified health care service and the quality of their life could be improved.

This policy, however, requires enormous capital resources from governmental subsidies for health care service. There is a concern that in future that this could affect the financial stability of NIH as part of the health sector.

e.3 Decentralization

As part of health system reform, which was approved on May 2000, the decentralization of health sector has been programmed in order to provide more effective and financially capable health care service to the Thai nation. In Thailand Health Profile (2001-2004), it is stated that in order to meet the goal of decentralization, the MoPH can simply transfer the various health services facilities and manpower as well as available budget to the local administration. In addition to this, 80% of the annual budget of the MoPH and 90% of its staff would be shifted to the local administration units.

In the event that the decentralization act is put into effect as it is planned, the capacity of NIH may deteriorate significantly in terms of human resources and financial status. It, however, seems that the decentralization plan is not and/ or will not be executed as planned. It is because the budgetary transition of MoPH between 2002 and 2005 had the tendency to increase, which indirectly implies that the manpower of MoPH has also not yet been transferred to the local administration. Besides, the director of NIH mentioned that there was presently no activity of decentralization in NIH and no related plans in future in the interview survey.

The future trend of the decentralization act will be influenced by the newly elected government’s approaches on this matter since the former government and the constitution of Thailand were dissolved together with all related policies by the event of a military coup.

f. Conclusion

There is no particular change to NIH`s position among organizations under MoPH. However, the participation of NIH in ADSNet could prove that related positions of NIH as the Thai national reference laboratory is rising. Furthermore, it is expected that the presence of NIH as a referral information resource in the Health Information System would become indispensable.

According to the results of the questionnaire and interview survey, it is understood that the perceptible change or effect due to the decentralization is not still available in NIH, Lampang hospital and sentinel laboratories.

Based on the facts and findings mentioned above, it could be concluded that sustainability of the project in organizational aspect would be ensured if universal health care policy and decentralization act do not become a big burden.

3.3.3 Financial Aspects

a. Budgetary Transition of MoPH and DMSc

During this evaluation study, the study team could not obtain the information regarding the consolidated financial report of the C/P organizations. Therefore, the sustainability of the project regarding the financial aspect will be discussed indirectly.

According to the statistical data of consolidated budgets in both MoPH and DMSc shown in the table below, their total amount of consolidated budget is gradually increasing from 2002 to 2005. Moreover, it is rather apparent that the increment between 2003 and 2004 in DMSc excesses more than 20%.

Table 3-6: Consolidated Budget of MoPH and DMSc

Year	MoPH	DMSc
2002	41,501	782.3
2003	41,995	747.3
2004	45,148	927.2
2005	45,014	973.1

(Unit: Million Baht, Source: Ministry of Public Health)

b. Budget for National Health Service

The table below shows the outlay of central government for the health sector. This includes various sub categories such as outpatient, hospital operation, public health promotion, research and development, etc. According to the explanation given by the Ministry of Finance, the budgets for MoPH and DMSc are included in this outlay for the health sector.

Table 3-7: Outlay of Central Government for the Health Sector

Year	2005	2004	2003	2002	2001
Budget	97,288.5*	102,061.7	97,124.9	88,370.2	66,038.2

(Unit: Million Baht, Source: Ministry of Finance)

*; Not consolidated

c. Assistance from other institutes/ organizations

The assistance from other institutes/ organization that signed the agreement of collaboration with NIH should not be neglected when the financial stability of NIH is evaluated.

The means of assistance contributed from collaborating institutes/ organizations are not monetary basis but procurement in kind. This will reduce the financial burden of NIH to a certain extent, especially purchasing equipment and consumable items such as chemicals and spare parts.

According to the number of collaborations between NIH and other institutes/ organizations, NIH may receive a certain amount of procurement/ supporting materials.

d. Conclusion

According to the tendency of budget transition of both MoPH and DMSc, the amount of NIH budget might have also the same or a similar figure. The fact that the outlay of central government for the health sector is increasing may indirectly support the relevance of this hypothesis.

Moreover, the number of collaborating activities has significantly increased since the termination of the project. This could surely strengthen the financial stability of NIH.

3.3.4 Sustainability of Project Effects

Regarding the sustainability of project effect, the most important facts and findings identified in the study are summarized below.

1. No outflow of C/P personnel participated in the project is identical after the termination of the project (Human Resource).
2. Knowledge and techniques are still relevant to research activities (Techniques).
3. The relative position of NIH in MoPH is kept the same or has enhanced since the termination of the project (Organization).
4. The financial condition of NIH is stable or more capable since the termination of the project (Finance)

The items listed above meet the satisfactory level on the sustainability of the project effect although partially there might be malfunctions or deficiency of resources, projected from comments given from respondents. In addition, the policy issues do not limit the research activities of NIH for the time being.

From this point of view, the sustainability of the project effect could be maintained at the same satisfactory level or higher unless obstructive factors have an effect on it.

3.4 Analysis of Factors of Impact and Sustainability

3.4.1 Internal Factors

Considering the nature of NIH as a national reference laboratory, it is the quality of performance on research activities that have potentially affected the achievement of the project`s overall goal. In order to fulfill the academic or institutional reputation, there would be three key factors including; namely 1): Capacity Building of researchers and facilities, 2): Broad collaboration with other institutes/ organization, and 3): Publication of research results. These key factors could generate apparent impacts, creating various opportunities for further development of NIH. Subsequently, further impacts have been realized because these opportunities were properly utilized by NIH.

In addition to these key factors, there could be local inhibitors which control the cyclic development such as the financial and organizational status of NIH stipulated in the national policy on health.

3.4.2 External Factors

Moreover, some external factors were identified through the evaluation study. They are 1): Outbreak of infectious diseases in the region, 2): Need of network for the control of infectious diseases, 3): International cooperation respectively.

a. Outbreak of Infectious Diseases

The recent cross border outbreaks of various infectious diseases came to affect the national policy of prevention and control of infectious diseases. In fact, several activities were programmed and implemented under the National HIV/AIDS prevention act in response to the outbreak and spread of HIV/AIDS in Thailand during the early 1990's.

NIH diagnosis capability became more important than ever in order to provide the referral resources of infectious diseases to decision makers.

This factor created other demand for the control of infectious diseases.

b. Need of Network of reference laboratories

It is more effective if the information and data of infectious diseases are shared by at least regional counties, preferably counties in the world. Thus, a regional network like ADSNet (Chapter 3.3.2b) has been established for the prevention and control of infectious diseases.

The participation of NIH in such a regional or international network could create more opportunity for the partnership or sponsorship of research, which ensured the sustainability of budgets and institutes.

c. International Cooperation

Countries and institutes participating in ADSNet have different levels of research capacities. In order to achieve the prevention and control of infectious diseases in the region, NIH, which possesses integrated facilities enabling various diagnosis and analysis, has provided technical training using their facilities. This could strengthen the excellence of NIH across the region.

3.5 Issues, Problems

The study team identified no particular problems which may disturb the impact and sustainability of the project.

On the contrary, NIH researchers keep close communication with Japanese experts. Their relationship is not of a formal manner but constructive as that of researchers working for the same goal.

3.6 Follow-up Situation

One Japanese long term expert was dispatched to NIH after the termination of the project. The outline of this follow-up activity is summarized in the table below.

Table 3-8: Summary of Follow-up Activity

Name of Expert	Dr. Ariyoshi K.		
Original Institute	National Institute of Infectious Disease, Japan		
Project Title	Follow-up cooperation for Strengthening of National Institute of Health Capabilities for Research and Development on AIDS and Emerging Infectious Disease		
Issue/ Sector	Public Health (HIV/AIDS, EID)		
Cooperation Scheme	Technical Cooperation		
C/P Organization	NIH and Lampang Hospital		
Period of Cooperation	6th May, 2004	～	16th March, 2005
Procurement of Equipment/ Facilities	• Nothing particular		
Objectives	• Follow-up for the cohort study in Lampang Hospital • Provide guidance on research activities utilizing samples collected in the cohort study • Follow-up for EID surveillance and arrange better communication among Thai local organizations		

The effectiveness of this follow-up is evaluated as the same high level as that of the project. Especially the acceptance of the cohort study proposal for the next five years by the National Ethical Committee of Health promises the financial stability of the cohort study, and helps the impact of this study widely and continuously spread over provinces.

3.7 Conclusion

The conclusion respectively to the impact and sustainability has been discussed in the previous chapters. Herewith, the achievement of overall goal of the project and the future prospect of NIH will be considered.

Impacts of the project have already been incorporated into the NIH basic function and work since the termination of the project. Moreover, the respectful self efforts of NIH researchers have enhanced NIH diagnostic and analytical capabilities. This will attract more institutes/ agencies for collaboration in the fields of HIV/AIDS and EID.

Behind this significant achievement, it should be noted that stable financial background, coincidently the recent rapid economic recovery of Thailand, of NIH and other related organizations and the 9th National Health Development Plan (2001-2006) along with the Health Policy in Thailand provided break-though for further development of NIH. Moreover, due to the recent cross-border outbreak of deadly infectious diseases like avian influenza (so called bird flue) reminded the Thai government and people of the importance of infectious disease control and prevention, which is currently controlled by NIH to a satisfactory level (the achievement of overall goal of the project) and might be projected on the future direction of National Policy on Health.

4 Recommendations and Lesson Learned

4.1 Recommendations

As the result of excellent collaboration between Japanese experts and Thai C/P personnel, NIH and related organization could have persuaded the project objective with the satisfactory level. This contributes to the control of infectious diseases in Thailand to a certain extent. Nevertheless, there should be regular efforts to improve NIH capacities as a national reference laboratory. In order to achieve the project overall goal with higher level, the following issues are considerably recommended.

1. Introduction of Laboratory Standards
2. Utilization of NIH Database

4.1.1 Introduction of Laboratory Standards

As mentioned in the terminal evaluation report, NIH, especially the Animal Center, should install GLP standards in order to ensure the generation of high quality and reliable test data of HIV vaccine candidates for clinical tests.

4.1.2 Utilization of NIH Database

The control of infectious diseases requires quicker response as economic activity of Thailand inflates more around the region and the national policy on health promotes the integrated information system empowered by internet technology. NIH should establish a more enhanced information system which may potentially integrate the national information system and provide useful information to provincial hospital and laboratories in future. This will strongly support the effective control and prevention of cross-border diseases and eventually the achievement of the national health policy.

4.2 Lesson Learned

During the study the following issues were confirmed as for a positive lesson.

- Regular communication between Japanese experts and C/P personnel, even after the project, have enhanced the technical capacity of NIH and generated the research opportunities. Therefore, the encouragement of the researcher's network will benefit the continuous expansion of the project impact and enhance the sustainability of the project achievement, especially like this type of technical cooperation.
- Knowledge and techniques transferred by the project are still relevant and useful in NIH, which has produced enormous result of research activities. From this outcome, the reasonable project inputs designed based on the institutional capacity analysis and the project purpose are considerably important.

Annex 1: Evaluation Grid

Evaluation Grid

(The Project for Strengthening of National Institutes of Health Capabilities for Research and Development on AIDS and Emerging Infectious Disease)

Impact

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
How far has the overall goal been achieved since the terminal evaluation of the project?	・ Has the quality of research performance been maintained or improved since the termination of the project?	・ Comparison of before and after the project	1) Record of NIH research activities 2) Record of laboratory based sentinel surveillance on emerging and re-emerging diseases 3) Statistical information on international publication in HIV/AIDS and infectious diseases	1) Existing research reports 2) NIH 3) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ What is the current status of Lampang cohort study in terms of the number of patient registration and research activities utilizing samples collected from cohort study?		1) Statistical information on registration of cohort study at Lampang hospital 2) Record of research activities	1) Lampang hospital 2) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ Has Good Laboratory Practice (GLP) been installed in NIH for clinical test of HIV vaccine?		1) Manual/ guideline of GLP installation/operation	1) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ What is the current status of stored samples from HIV vaccine trials and the serum bank?		1) Statistical information on stored samples	1) NIH	1) Literature/ document review 2) Questionnaire and/o

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
	• Has the project enhanced further the control of HIV/AIDS and infectious diseases since the termination of the project?		1) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Questionnaire and/or interview survey
Are there any unintended positive or negative changes resulted from the project intervention?	• Are there unexpected achievements and/ or problems occurred by new technologies and/or systems transferred by the project?	• Analyze the present information with the joint final evaluation report of the project	1) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Questionnaire and/or interview survey
	• Is there any difference in registration procedures for female and male participants in cohort study? For instance, female staff of a hospital will support in registration when female participants come.				
What factors have contributed to positive and negative impacts since the project termination?	• Have there been any boosters and/or obstacles contributing to positive and negative impacts since the project termination?	• Comparison of before and after the project	1) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Questionnaire and/or interview survey
Has the project contributed to improve institutional capacity of the implementing agency since the project termination?	• Is there any change in the government policy, guideline and/ or standard on the control of HIV/AIDS and infectious diseases since the project termination?	• Comparison of before and after the project	1) National policy, guideline, standard, etc on public health 2) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) Existing materials 2) NIH 3) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
	・ Is there any program to transfer the latest diagnostic methods from NIH to sentinel research laboratories or other laboratories?	・ Analyze the present information with the joint final evaluation report of the project	1) Record of training, workshop, etc 2) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey

Sustainability

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
Have there been any external factors affected the achievement of the project overall goal since the project termination?	・ Have there been any limitations and/ or constrains to inhibit the further development of the project derived from the government policy? (Policies & Systems)	・ Comparison of the present situation and the terminal period of the project	1) Answers from the personnel and counterparts of NIH and sentinel laboratories 2) National policy on public health	1) NIH 2) 4 sentinel research laboratories 3) Existing materials	1) Questionnaire and/or interview survey 2) Literature/ document review
	・ Are there any other donors supporting this project after the project termination? (Organizational & financial aspects)	・ Describe the significant changes and inquire its reason	1) Annual budget 2) Programs/ activities conducted under donors	1) NIH 2) 4 sentinel research laboratories	1) Questionnaire and/or interview survey
Has the project organization been maintaining the benefits accrued as a result of achieving the project overall goal and purposes?	・ Is the knowledge transferred from the project still applicable? (Techniques)	・ Comparison of the present situation and the terminal period of the project	1) Annual and/or monthly technical activity reports from NIH and sentinel laboratories 2) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ Are procured equipments still utilized well for the control of HIV/AIDS and infectious diseases? (Techniques)				

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
	・ Is the project technical know-how still relevant? (Techniques)				
	・ Do all organization concerned have efficient human resources even after the project termination? (Organizational & financial aspects)		1) Answers from the personnel and counterparts of NIH and sentinel laboratories 2) Organizational structure		1) Questionnaire and/or interview survey 2) Literature/ document review
	・ Has the government policy supported the activities of the project organization since the project termination? (Policies & Systems)		1) National policy on health 2) Record of NIH research activities 3) Record of laboratory based sentinel surveillance on emerging and re-emerging diseases 4) Answers from the personnel and counterparts of NIH and sentinel laboratories		1) Literature/ document review 2) Questionnaire and/or interview survey
What factors contribute to or inhibit the project effects or sustainability?	・ Does the project organization cooperate with other organizations concerned with HIV/AIDS and infectious diseases for the wide spread of the project outputs. (Policies & Systems)	・ Describe the significant changes and inquire its reason	1) Answers from the personnel and counterparts of NIH and sentinel laboratories 2) Record of NIH research activities	1) NIH 2) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
	・ Is there any manual and/ or guideline commonly used by organization/ institution concerning the control of HIV/AIDS and infectious diseases? (Policies & Systems)	・ Comparison of the present situation and the terminal period of the project	1) Existing documents and information 2) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey
Is there adequate budget from the central and/or local government(s) of Thailand to sustain the project works?	・ Is there adequate budget from the central and/or local government(s) of Thailand to sustain the project works? If yes, what department(s) and/or organization(s) is/are the main budget provider(s)? If yes, is the budget sufficient for the project sustainability? (Organizational & financial aspects)	・ Describe the significant changes and inquire its reason	1) Annual financial report of NIH 2) Answers from the personnel and counterparts of NIH	1) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey

Specifications

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
How has the follow-up cooperation from JICA been carried out especially for the aspect of the outcome since the project termination?	・ Has JICA sent technical experts for the follow-up cooperation since the project termination? ・ Has JICA arranged technical seminars and/or workshops for the follow-up cooperation since the project termination? ・ How do you rate the effectiveness of technical seminars and /or workshops conducted by JICA for further achievement of the project?	・ Describe the significant changes and inquire its reason	1) JICA activity reports for the project 2) Record of NIH research activities 3) Record of laboratory based sentinel surveillance on emerging and re-emerging diseases	1) JICA 2) NIH 3) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey
Is there the establishment of any networks as the center of knowledge and skills transfer in	・ How far have technical networks been expanded since the project termination?	・ Comparison of the project situation and other ones	1) Record of NIH research activities 2) Answers from the personnel and counterparts of NIH	1) NIH 2) 4 sentinel research laboratories	1) Questionnaire and/or interview survey

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
provincial hospitals and other 4 sentinel sites?	・ Are workshops or seminars arranged regularly in order to transfer the knowledge and technical skill among NIH, sentinel sites and provincial hospitals?	・ Describe the significant changes and inquire its reason	1) NIH activity reports 2) Answers from the personnel and counterparts of NIH and sentinel research laboratories.		1) Literature/ document review 2) Questionnaire and/or interview survey
How does the Thai decentralization policy affect the activities of Lampang HIV/AIDS cohort in terms of implementing policy and budget utilization since the project termination?	・ Does the Decentralization Act of Thailand support the activities of Lampang HIV/AIDS cohort? ・ Does the Lampang HIV/AIDS cohort financially support by the recent decentralization policy of Thailand?	・ Describe the significant changes and inquire its reason	1) National policy on health 2) Answers from the personnel and counterparts of NIH	1) NIH 2) Lampang prefectural office	1) Literature/ document review 2) Questionnaire and/or interview survey
Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries? If yes, what kind and what are the outcomes of the research?	・ Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries? If yes, what kind and what are the outcomes of the research?	・ Comparison of the project situation and other ones	1) Record of NIH research activities 2) Answers from the personnel and counterparts of NIH	1) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
Does NIH contribute anything (such as providing resource persons, distributing information, etc.) to the HIV/AIDS training institutes in Thailand or in other countries?	・ Does NIH contribute anything (such as providing resource persons, distributing information, etc.) to the HIV/AIDS training institutes in Thailand or in other countries?	・ Describe the significant changes and inquire its reason	1) Record of NIH research activities 2) Answers from the personnel and counterparts of NIH	1) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ Does the Thai government support NIH for international cooperation in the field of HIV/AIDS through technical cooperation bodies such as Thailand International Cooperate Agency (TICA)? If yes, what kind and what are cooperation programs?				
To what extent is data/information obtained from 4 sentinel sites useful for preventing HIV/AIDS cross-boarder prevalence?	・ Have other bodies got data/information obtained from 4 sentinel sites for their technical references?	・ Comparison of the project situation and other ones	1) Record of NIH research activities 2) Record of laboratory based sentinel surveillance on emerging and re-emerging diseases 3) Answers from the personnel and counterparts of NIH and sentinel laboratories	1) NIH 2) 4 sentinel research laboratories	1) Literature/ document review 2) Questionnaire and/or interview survey
	・ Are there any network systems for the use of the data/information? If yes, what kinds of networks are they?				

Annex 1: Evaluation Grid

Evaluation Questions		Criteria and Method for Judgment	Required Data	Information Source	Data Collection Methods
Main Questions	Sub-Questions				
Regarding HIV vaccine evaluation, has its research conducted by NIH been accepted internationally? Provide information about the establishment of the Global Laboratory Practice (GLP) Standard, if any.	・ Regarding HIV vaccine evaluation, has its research conducted by NIH been accepted internationally? Provide information about the establishment of the Global Laboratory Practice (GLP) Standard, if any.	・ Describe the significance with relevant data	1) Record of NIH research activities	1) NIH	1) Literature/ document review
What is the present status or position of NIH under the Ministry of Public Health (MOPH) administration? How are research outcomes utilized in policy making and administration process in the Ministry?	・ Does NIH have higher priority in the MOPH? ・ Does the present position or status of NIH meet the policy and administration process of the Ministry?	・ Comparison of the present situation and the terminal period of the project	1) MOPH policy reports 2) Answers from the personnel and counterparts of MOPH and NIH	1) MOPH 2) NIH	1) Literature/ document review 2) Questionnaire and/or interview survey

Annex 2: Questionnaire and its Result

Japan International Cooperation Agency

Ex-post Evaluation Study on the Project for Strengthening of National Institute of Health Capabilities for Research and Development on AIDS and Emerging Infectious Disease

Questionnaire

Name of correspondent: _____

Division/Section: _____ **Position.:** _____

Position: _____ **Contact Tel No.:** _____

Period involved in the Project: _____

Share of working hours for the Project activities: (Approx.) _____ **%**

This questionnaire is prepared for the Ex-post Evaluation Study on the project mentioned above. Your answers would help analyse whether or not the Project has been keeping its direct/indirect impacts and also sustainability since the termination of the project.

Please feel free to write your answers and/or comments in either **English** or **Thai**. If you need some more space for your answers and/or comments, please prepare additional papers and write down onto them.

Finally, after fulfilling this questionnaire, please send back to 'Mr. Tomohiro Kato of the JICA Ex-post Evaluation Study Team not later than 03:00PM, 27th, October, 2006 with the following way;

By fax: 02-937-0704

By e-mail: tomohiro_kato@kkc.co.jp

We should be glad if you would share your time for this work. Thank you for your cooperation in advance.

I. Impact

1. Has the quality of research performance been maintained or improved since the termination of the project?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not sure

Please describe the performance, which you think maintained or improved.

Comment: ……..……
……..

……..

2. What is the current status of Lampang cohort study in terms of the number of patient registration and research activities utilizing samples collected from cohort study?

❍ Increasing very much ❍ Increasing slightly ❍ Jut same as before
❍ Decreasing slightly ❍ Decreasing very much

Please provide us the relevance supporting your answer.

Comment: ……..……
……..

……..

3. Has Good Laboratory Practice (GLP) been installed in NIH for clinical test of HIV vaccine?

❍ Yes, already and utilized well ❍ Yes, just recently ❍ Now in progress
❍ Still planning ❍ Not at all

Please provide us the relevance supporting your answer.

Comment: ……
……..

……..

4. What is the current status of stored samples from HIV vaccine trials and the serum bank?

❍ Increasing very much ❍ Increasing slightly ❍ Jut same as before
❍ Decreasing slightly ❍ Decreasing very much

Please provide us the relevance supporting your answer.

Comment: ……
……..

……..

5. Has the project enhanced further the control of HIV/AIDS and infectious diseases since the termination of the project?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not sure

Please describe more about your answer.

Comment: ……
……..

……..

6. Are there unexpected achievements and/ or problems occurred by new technologies and/or systems transferred by the project?

❍ Lot positive ❍ A little positive ❍ Neither ❍ A little negative ❍ Lot negative

Please describe more about your answer.

Comment: ……..……
……..

……..

7. Is there any difference in registration procedures for female and male participants in cohort study? For instance, female staff of a hospital will support in registration when female participants come.

❍ Yes ❍ No ❍ Not sure

If yes, please describe it.

Comment: ……..……
……..

……..

If no, is there any complaint from participants?

Comment: ……..……
……..

……..

8. Have there been any boosters and/or obstacles contributing to positive and negative impacts since the project termination?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not sure

Please describe more about your answer.

Comment: ……..……
……...……..
……...……..

9. Is there any change in the government policy, guideline and/ or standard on the control of HIV/AIDS and infectious diseases since the project termination?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not sure

Please describe more about your answer.

Comment: ……..……
……...……..
……...……..

10. Is there any change in the government policy, guideline and/ or standard on the control of HIV/AIDS and infectious diseases since the project termination?

❍ Very often ❍ Regularly ❍ Sometimes ❍ Rarely ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……...……..
……...……..

10. Is there any change in the government policy, guideline and/ or standard on the control of HIV/AIDS and infectious diseases since the project termination?

❍ Very often ❍ Regularly ❍ Sometimes ❍ Rarely ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..……..
……..……..

II. Sustainability

1. Have there been any limitations and/ or constrains to inhibit the further development of the project derived from the government policy? (Policies & Systems)

❍ Very much ❍ Much ❍ Slightly ❍ Rarely ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

2. Are there any other donors supporting this project after the project termination? (Organizational & financial aspects)

❍ Greater than 10 ❍ Between 10 and 5 ❍ Between 5 and 1
❍ 0 ❍ Available in future (M/M signed)

Please specify more about your answer.

Comment: ……..……
……..

……..

3. Is the knowledge transferred from the project still applicable? (Techniques)

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

4. Are procured equipments still utilized well for the control of HIV/AIDS and infectious diseases? (Techniques)

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please give us a comment if any.

Comment: ……..……
……..

……..

5. Is the project technical know-how still relevant? (Techniques)

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……

……..

……..

6. Do all organization concerned have efficient human resources even after the project termination? (Organizational & financial aspects)

❍ Sufficient ❍ Enough ❍ Fair ❍ Short ❍ Insufficient

Please describe more about your answer.

Comment: ……..……

……..

……..

7. Has the government policy supported the activities of the project organization since the project termination? (Policies & Systems)

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……

……..

……..

8. Does the project organization cooperate with other organizations concerned with HIV/AIDS and infectious diseases for the wide spread of the project outputs. (Policies & Systems)

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……

……..

……..

9. Is there any manual and/ or guideline commonly used by organization/ institution concerning the control of HIV/AIDS and infectious diseases? (Policies & Systems)

❍ Yes ❍ No ❍ In preparation

Please specify manual and/or guideline commonly used.

Comment: ……..……

……..

……..

10. Is there adequate budget from the central and/or local government(s) of Thailand to sustain the project works? (Organizational & financial aspects)

❍ Yes ❍ No ❍ Not sure

If yes, what department(s) and/or organization(s) is/are the main budget provider(s)?
If no, what is the main reason for shortage of budget?

Comment: ……..……
……..

……..

If yes, is the budget sufficient for the project sustainability?

Comment: ……..……
……..

……..

III. Specific questions

1. Has JICA sent technical experts for the follow-up cooperation since the project termination?

❍ Sufficient ❍ Enough ❍ Fair ❍ Short ❍ Insufficient

Please give us a comment if any.

Comment: ……..……
……..

……..

2. Has JICA arranged technical seminars and/or workshops for the follow-up cooperation since the project termination?

❍ Very often ❍ Regularly ❍ Sometimes ❍ Rarely ❍ Not at all

Please give us a comment if any.

Comment: ……..……
……..

……..

3. How do you rate the effectiveness of technical seminars and/or workshops conducted by JICA for further achievement of the project?

❍ Very effective ❍ Effective ❍ Fair ❍ Not sure ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

4. How far have technical networks been expanded since the project termination?

❍ National wide ❍ Provincial level ❍ District level
❍ Individual level ❍ Same as before

Please describe more about your answer.

Comment: ……..……
……..

……..

5. Are workshops or seminars arranged regularly in order to transfer the knowledge and technical skill among NIH, sentinel sites and provincial hospitals?

❍ Very often ❍ Regularly ❍ Sometimes ❍ Rarely ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

6. Does the Decentralization Act of Thailand support the activities of Lampang HIV/AIDS cohort?

❍ Yes ❍ No ❍ Not sure

Please describe more about your answer.

Comment: ……..……
……..

……..

7. Is the Lampang HIV/AIDS cohort financially supported by the recent decentralization policy of Thailand?

❍ Yes ❍ No ❍ Not sure

If yes, is that support sufficient for the Lampang HIV/AIDS cohort?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

8. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?

❍ Yes ❍ No ❍ Not sure

If yes, what kind and what are the outcomes of the research?

Comment: ……..……
……..

……..

9. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?

❍ Yes ❍ No ❍ Not sure

If yes, please specify.

Comment: ……..……
……..

……..

10. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?

❍ Yes ❍ No ❍ Not sure

If yes, what kind and what are cooperation programs?

Comment: ……..……
……..

……..

11. Have other bodies got data/information obtained from 4 sentinel sites for their technical references?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not at all

Please describe more about your answer.

Comment: ……..……
……..

……..

12. Is there any network system for the use of the data/information of obtained from sentinel sites?

❍ Yes ❍ No ❍ Not sure

If yes, what kinds of network are they?

Comment: ……..……
……..

……..

13. Regarding HIV vaccine evaluation, has its research conducted by NIH been accepted internationally?

❍ Yes ❍ No ❍ Not sure

If yes, please provide information about the establishment of the Global Laboratory Practice (GLP) Standard, if any.

Comment: ……..……
……..

……..

14. Have other bodies got data/information obtained from 4 sentinel sites for their technical references?

❍ Highest ❍ Higher ❍ Fair ❍ Lower ❍ Not sure

Please describe more about your answer.

Comment: ……..……

……..

……..

15. Does the present position or status of NIH meet the policy and administration process of the MoPH?

❍ Very much ❍ Much ❍ Fairly ❍ Not so ❍ Not sure

Please describe more about your answer.

Comment: ……..……

……..

……..

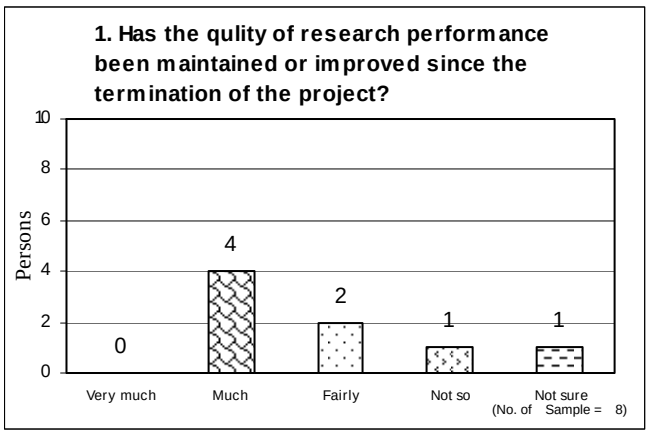
Thank you indeed again for your cooperation. If you have other suggestions and/or comments useful for the ex-post evaluation on the Project, please feel free to state below. Any comments (especially, comments on how the JICA technical cooperation projects should be operated in the future) should be welcome.

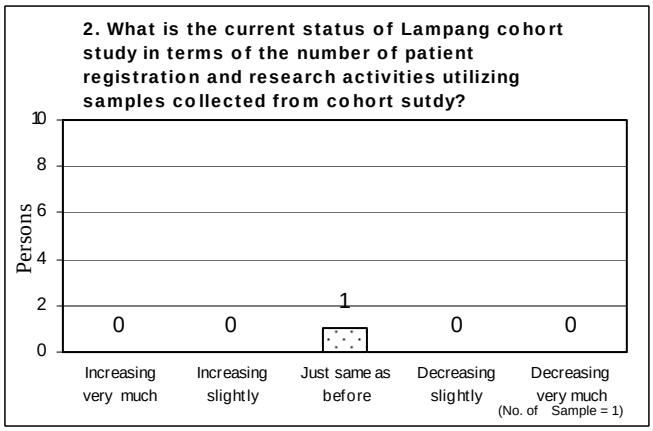
Suggestions and/or Comments:

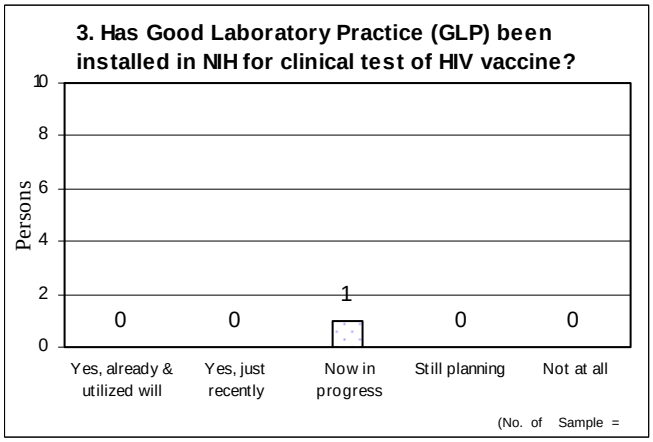
--- End ---

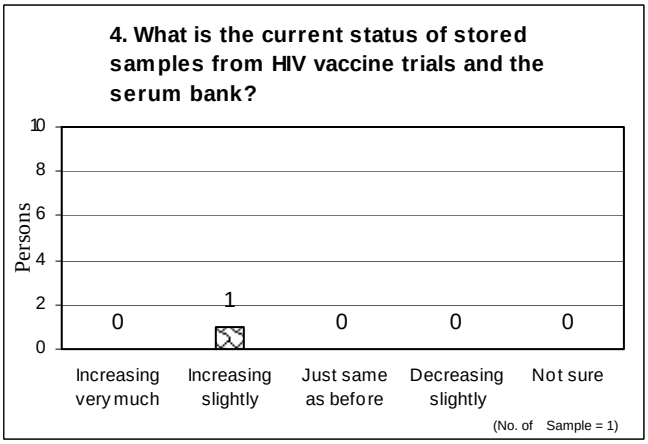
Result of Questionnaire Survey

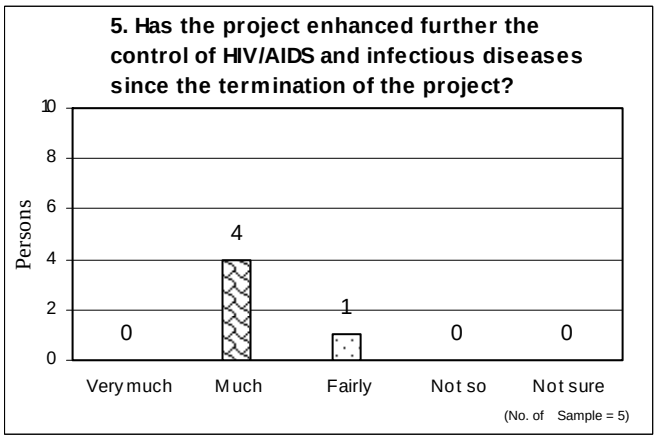
I. Impact

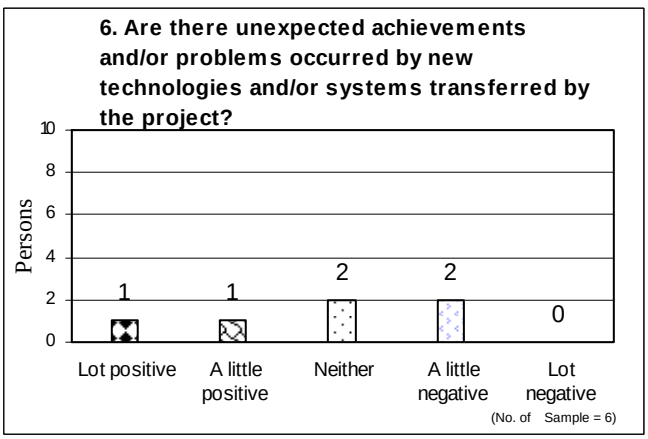


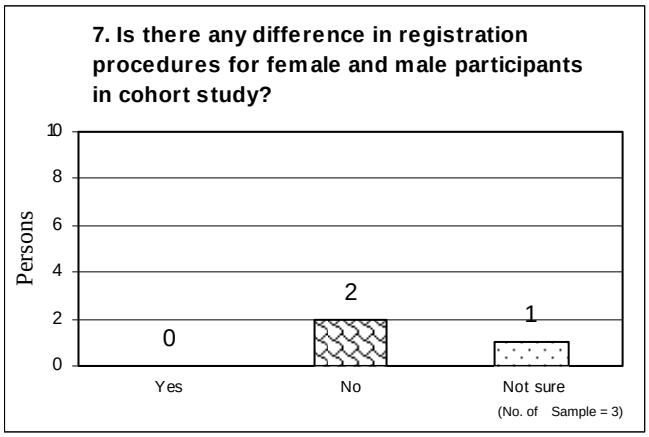


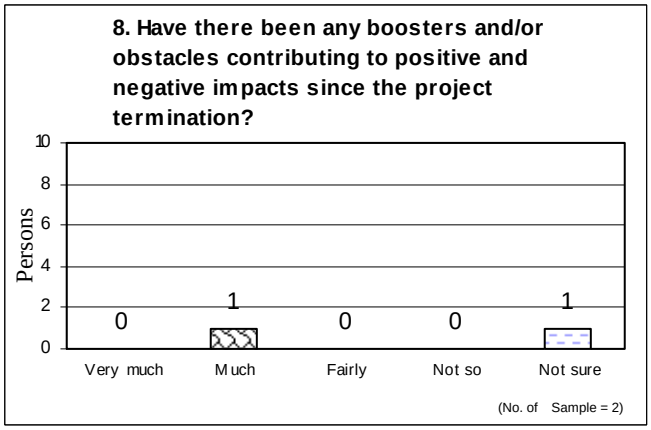


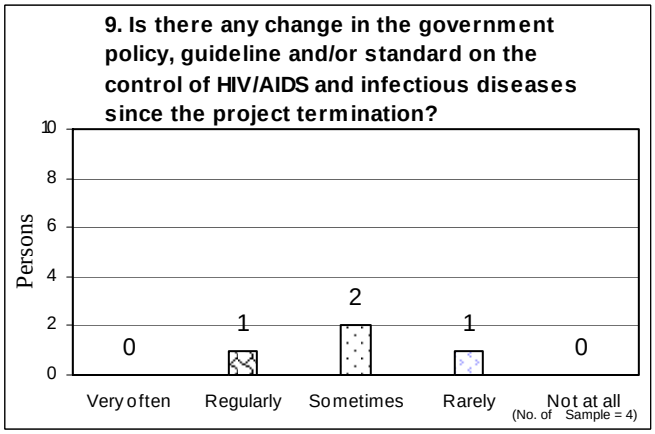




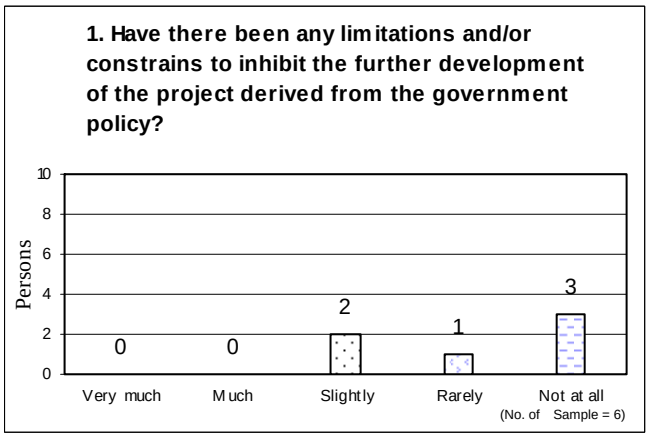


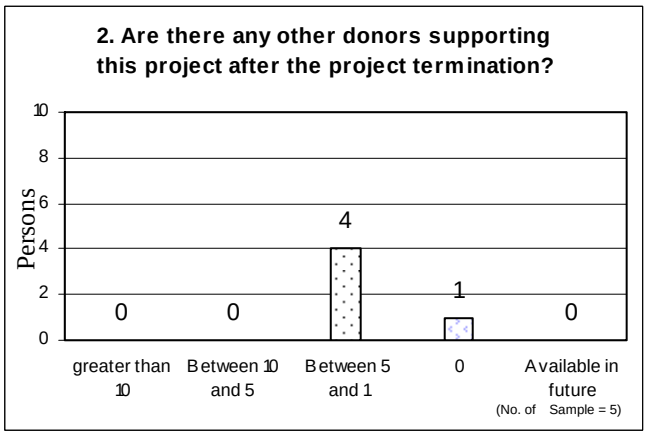


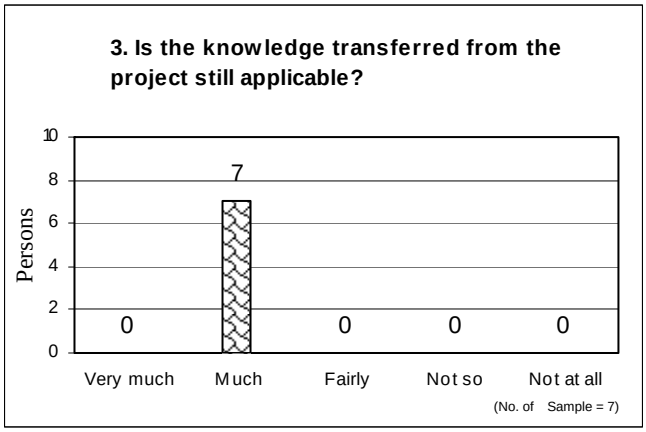


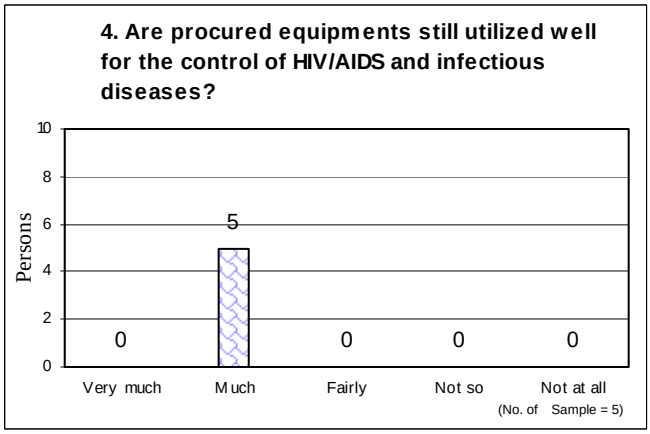


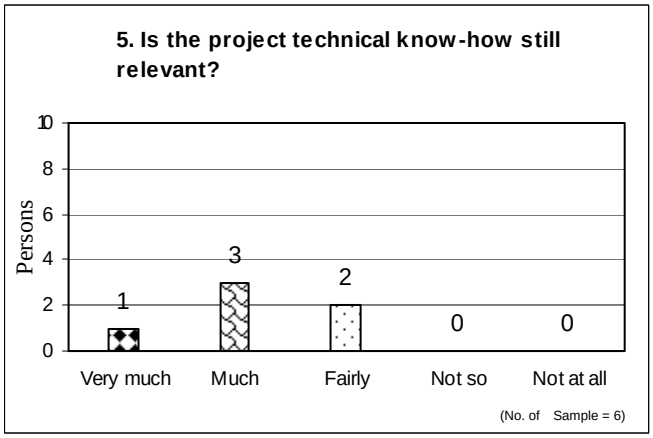
II. Sustainability

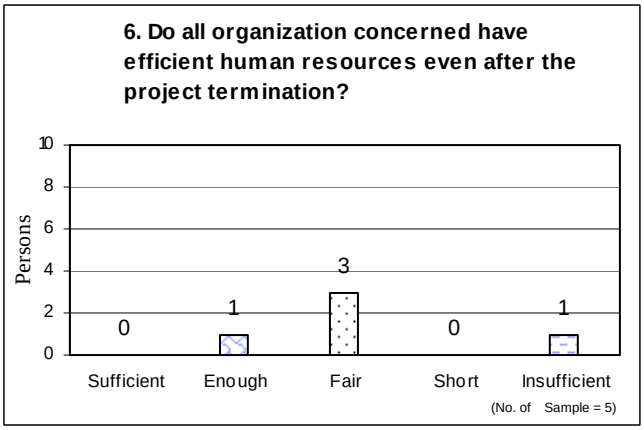


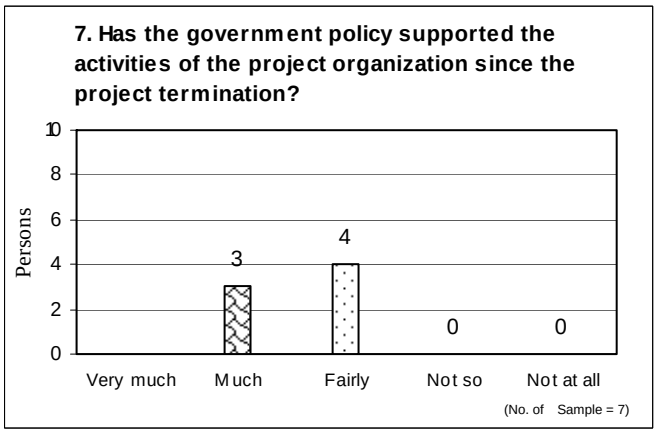


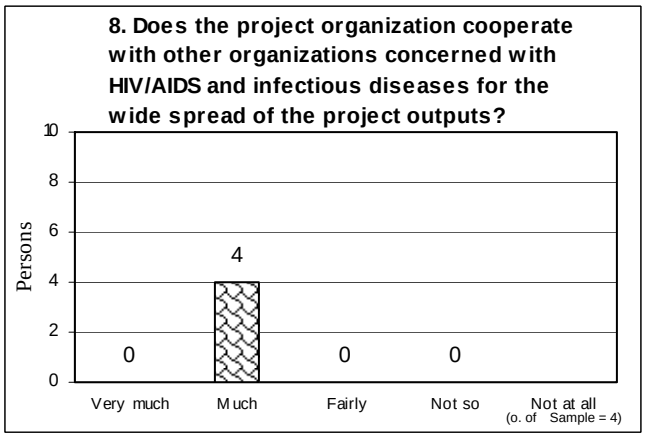

3. Is the knowledge transferred from the project still applicable?
Persons
10
8
6
4
2
0
7
0
0
0
0
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 7)

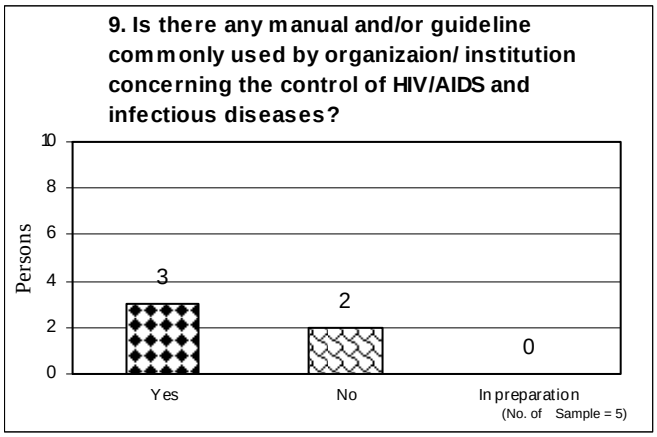

4. Are procured equipments still utilized well for the control of HIV/AIDS and infectious diseases?
Persons
10
8
6
4
2
0
5
0
0
0
0
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 5)

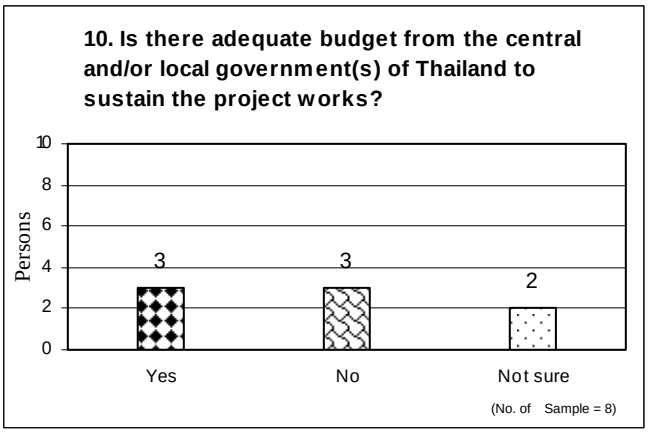

5. Is the project technical know-how still relevant?
Persons
10
8
6
4
2
0
1
3
2
0
0
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 6)


6. Do all organization concerned have efficient human resources even after the project termination?
Persons
10
8
6
4
2
0
0
1
3
0
1
Sufficient
Enough
Fair
Short
Insufficient
(No. of Sample = 5)

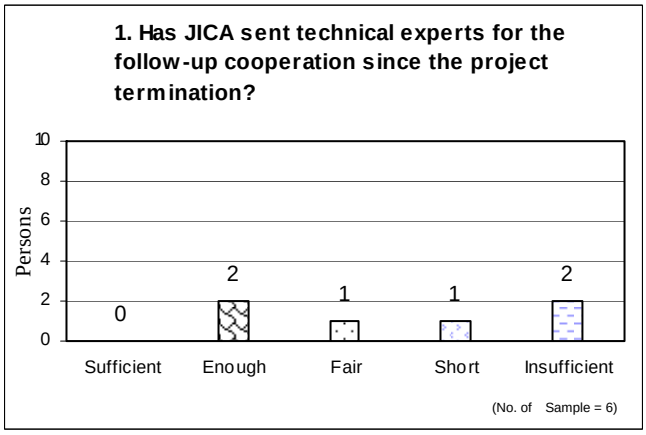

7. Has the government policy supported the activities of the project organization since the project termination?
Persons
10
8
6
4
2
0
3
4
0
0
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 7)

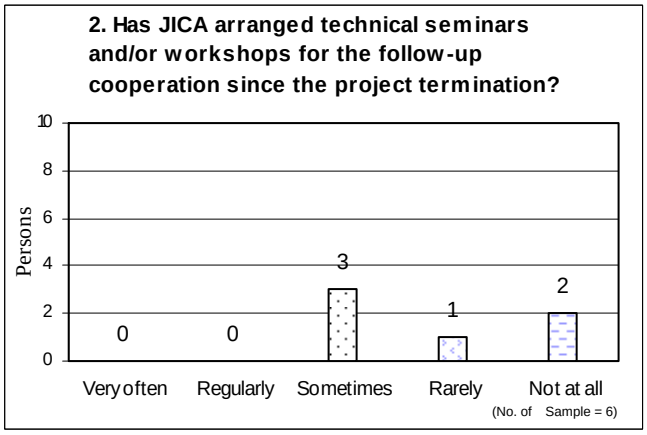

8. Does the project organization cooperate with other organizations concerned with HIV/AIDS and infectious diseases for the wide spread of the project outputs?
Persons
10
8
6
4
2
0
4
0
0
0
Very much
Much
Fairly
Not so
Not at all
(o. of Sample = 4)

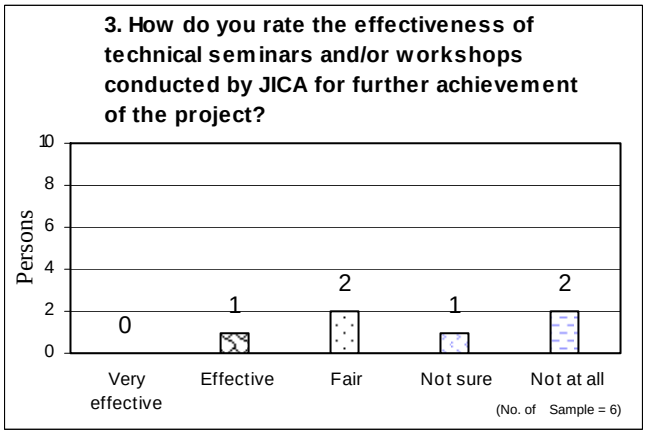


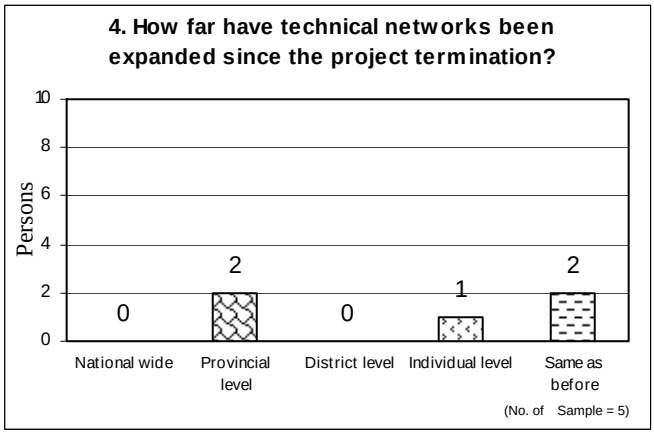


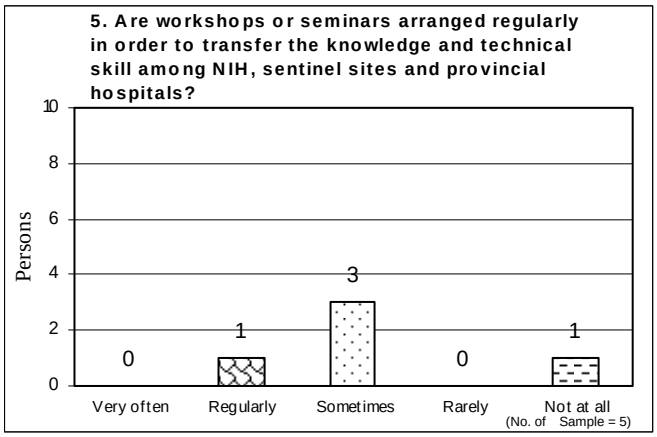
III. Specific questions

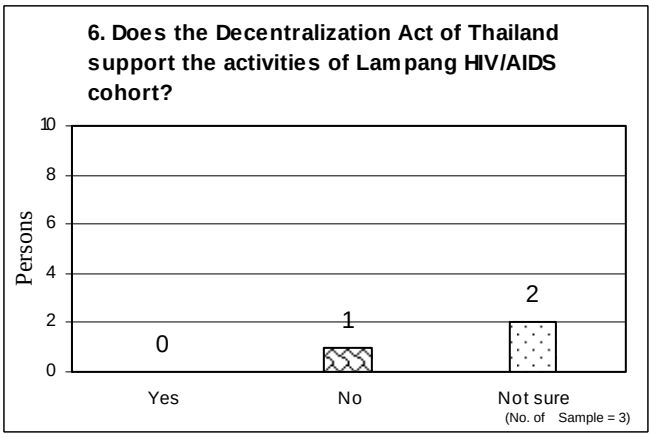


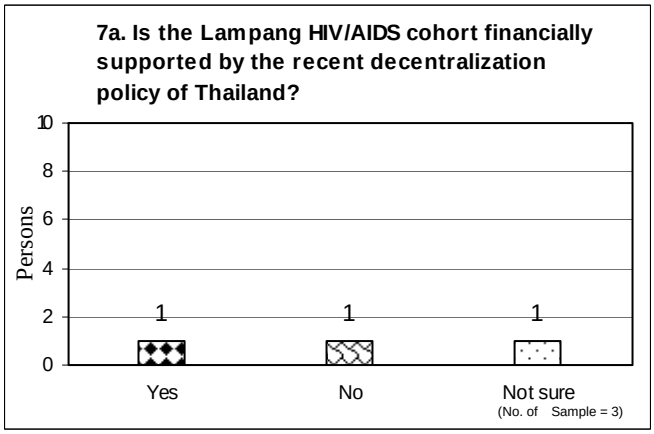


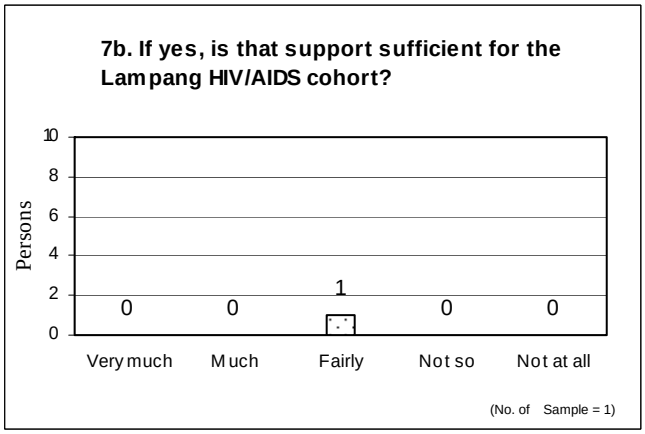


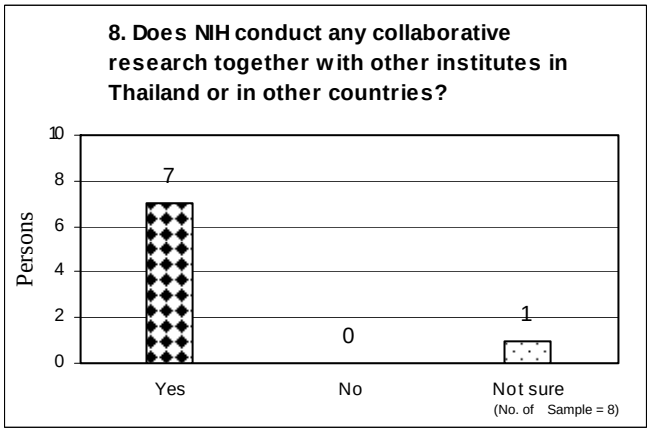


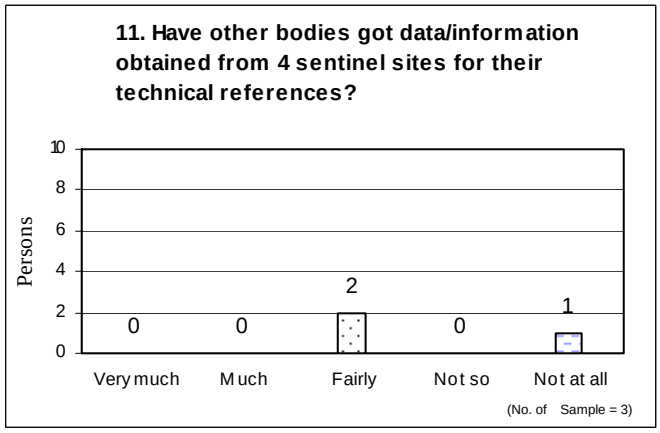

5. Are workshops or seminars arranged regularly in order to transfer the knowledge and technical skill among NIH, sentinel sites and provincial hospitals?
Persons
0
1
3
0
1
Very often
Regularly
Sometimes
Rarely
Not at all
(No. of Sample = 5)

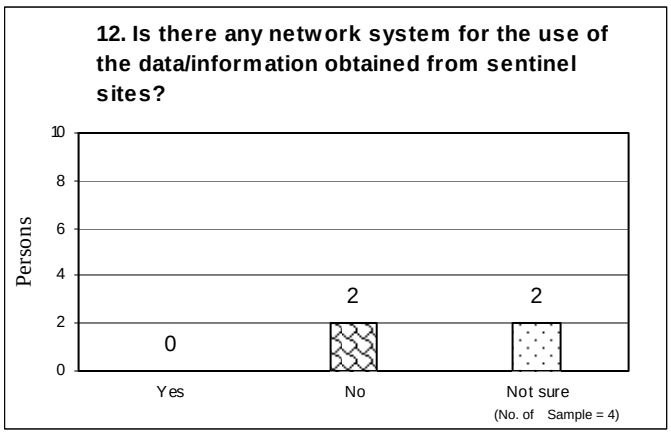

6. Does the Decentralization Act of Thailand support the activities of Lampang HIV/AIDS cohort?
Persons
0
1
2
Yes
No
Not sure
(No. of Sample = 3)

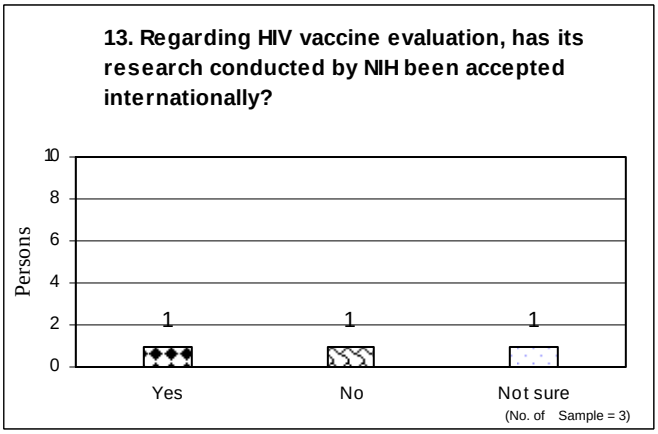

7a. Is the Lampang HIV/AIDS cohort financially supported by the recent decentralization policy of Thailand?
Persons
1
1
1
Yes
No
Not sure
(No. of Sample = 3)

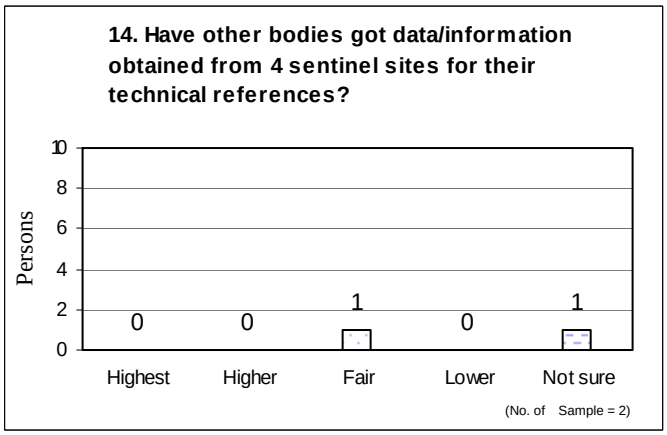

7b. If yes, is that support sufficient for the Lampang HIV/AIDS cohort?
Persons
0
0
1
0
0
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 1)

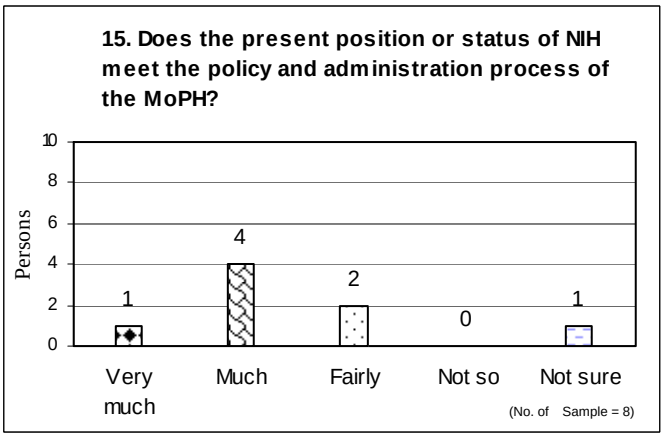

8. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?
Persons
7
0
1
Yes
No
Not sure
(No. of Sample = 8)


11. Have other bodies got data/information obtained from 4 sentinel sites for their technical references?
Persons
0
0
2
0
1
Very much
Much
Fairly
Not so
Not at all
(No. of Sample = 3)


12. Is there any network system for the use of the data/information obtained from sentinel sites?
Persons
10
8
6
4
2
0
0
2
2
Yes
No
Not sure
(No. of Sample = 4)


13. Regarding HIV vaccine evaluation, has its research conducted by NIH been accepted internationally?
Persons
10
8
6
4
2
0
1
1
1
Yes
No
Not sure
(No. of Sample = 3)


14. Have other bodies got data/information obtained from 4 sentinel sites for their technical references?
Persons
10
8
6
4
2
0
0
0
1
0
1
Highest
Higher
Fair
Lower
Not sure
(No. of Sample = 2)


15. Does the present position or status of NIH meet the policy and administration process of the MoPH?
Persons
10
8
6
4
2
0
1
4
2
0
1
Very much
Much
Fairly
Not so
Not sure
(No. of Sample = 8)

Annex 3: Comments of Questionnaire Survey

Comments of Questionnaire Survey

I. Impact

1. Has the quality of research performance been maintained or improved since the termination of the project?

- ✧ Gain more knowledge to set up methodology for initial examination of Inca infectious virus. Still conduct many researches in collaboration with Hokkaido University
- ✧ The research activities of basic and applied research have been much improved by using advanced techniques, e.g., PCR, nucleotide sequencing etc.
- ✧ The research performance has been maintained as routine for EID project.
- ✧ Conducting research with NIID
- ✧ Some laboratory techniques of leptospirainterrogans caused of leptospirosis have been performed.
- ✧ Research on microbial detection identification for laboratory surveillance has been maintained.

5. Has the project enhanced further the control of HIV/AIDS and infectious diseases since the termination of the project?

- ✧ Can prepare slide antigen for initial examination of Inca infectious virus to use in our Lab. So it is unnecessary to purchase test-kits from aboard
- ✧ Our Institute has expanded many activities on research and development as well as the surveillances of emerging and re-emerging diseases. We have established a center for the collaboration with other organizations e.g., WHO, CDC and other neighboring countries on emerging diseases.
- ✧ DMSc contributes to the control of Avian Influenza cases.

6. Are there unexpected achievements and/ or problems occurred by new technologies and/or systems transferred by the project?

- ✧ Gain more knowledge from the experts in terms of capability to edit academic articles to be published for international level.
- ✧ Some microorganism need to be incubated in P3 Lab. Since P3 Lab had been closed for maintenance so the projects would be put on hold. Besides, NIH staff has other regular responsibilities to do and NIH did not have budget to recruit more assistants.
- ✧ Our research activities, presently, focus on the characterization of the genetic of pathogens and molecular epidemiology by using the genetic technology or used the basic knowledge of genetics technology for other applied research.
- ✧ Lacking of some chemical substances

9. Is there any change in the government policy, guideline and/ or standard on the control of HIV/AIDS and infectious diseases since the project termination?

- ✧ Specify only dengue fever, the knowledge that NIH staff gained from the experts can help to diagnose the disease more accuracy.
- ✧ Thai government has paid attention on the spread of emerging diseases and has supported the budget for the prevention and control of such diseases.

II. Sustainability

1. Have there been any limitations and/ or constrains to inhibit the further development of the project derived from the government policy? (Policies & Systems)

- ✧ Budget and human resources
- ✧ The EID project still going on with Thai government support
- ✧ Executive officers have been transferred so often which affected to policy stability.

5. Is the project technical know-how still relevant? (Techniques)

- ✧ The molecular techniques are still useful.
- ✧ Sequencing technique can be used for Dengue virus sequencing project and Focus assay technique can be used for testing herbs qualification against dengue virus.

9. Is there any manual and/ or guideline commonly used by organization/ institution concerning the control of HIV/AIDS and infectious diseases? (Policies & Systems)

- ✧ NIH has GAM as a central manual. Plus all sections have their own SOP.
- ✧ We have guideline for dealing with the detection of emerging infectious diseases during the outbreaks. Our Department has a mobile unit laboratory to support the laboratory in the area where the outbreaks occur especially for Avian Flu and Leptospirosis.

III. Specific questions

1. Has JICA sent technical experts for the follow-up cooperation since the project termination?

- ✧ JICA should dispatch some experts to follow-up the project every year.

4. How far have technical networks been expanded since the project termination?

- ✧ All techniques have been transferred to NIH staff only.
- ✧ Any network expanded is through the Thai side's effort; not related to JICA.

5. Are workshops or seminars arranged regularly in order to transfer the knowledge and technical skill among NIH, sentinel sites and provincial hospitals?

- ✧ The workshops are arranged for NIH only because they are concerned with specific technique.

8. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?

- ✧ NIH conducts researches together with 6 hospitals. Today, six articles have been published on behalf of Arbovirus section.

9. Does NIH conduct any collaborative research together with other institutes in Thailand or in other countries?

- ✧ NIH and NIID (Japan) conduct researches together about "West Nile virus in Thailand"
- ✧ Faculty of Tropical Medicine, Mahidol University, Thailand and US.

13. Regarding HIV vaccine evaluation, has its research conducted by NIH been accepted internationally?

✧ There have been some publications and presentations at international conferences.

Suggestions and/or Comments:

1. Provide training course by transferring new examination emerging disease techniques for Asian countries in order to build up network before an epidemic occurred like bird flu.
2. Strengthening capability of Lab staff from time to time in order to maintain knowledge.
3. JICA should set up a unit to monitor and develop the capability of Laboratories in Asian to reach required standard. Morever, this unit should provide assistances to Laboratory network.
4. Emerging & re-emerging infectious disease should be continued because some techniques cannot examine in Thailand.

Annex 4: List of Publication

Publication from NIH by year

The figures in the table below are summarized according to the archive of NIH publication.

Year	2000	2001	2002	2003	2004	2005
No.	1	3	4	5	8	6
Non-Thai	1	3	0	3	3	1
Thai	0	0	4	2	5	5
HIV/AIDS	0	2	0	0	1	2
EID	1	1	4	5	6	4

Year 2000

1. Imai T, Watanabe K, Tamura M, Mikami Y, Tanaka R, Nishimura K, Miyaji M, Poonwan N, Branchini ML. Geographic grouping of Cryptococcus neoformans var. gattii by random amplified polymorphic DNA fingerprint patterns and ITS sequence divergence. Clin Lab 2000; 46: 345-54.

Year 2001

1. Kurosu T, Mukai T, Auwanit W, I N Ayuthaya P, Saeng-Aroon S, Ikuta K. *Variable sequences in the Long Terminal Repeat and its downstream region of some of HIV type 1 CRF01_AE recently distributing among Thai carriers.* AIDS Res.Hum Retroviruses 2001;17(9):863-866.
2. Komoto S, Kinomoto M, Ibrahim S, Zhong Q, Auwanit W, I. N. Ayuthaya P, Otake T, Mori H, Oishi I, Kurosu T, Takahashi H, Mukai T, Ikuta K. *Low or no antibody responses to human immunodeficiency virus type 1 Nef in infected carriers with subtype E, in contrast to subtype B that showed antibodies preferentially recognizing subtype specific Nef epitopes.* Vaccine 2001;19:3019-22.
3. Lin K H, Chern K L, Chu P Y, Chang C H, Wang H L, Sheu M M, Huang W L, Pongsuwanna Y, etal. *Genetic analysis of Recent Taiwanese isolates of a variant of coxsackievirus A24.* J. Med. Virol 2001;64:269-274.

Year 2002

1. Pongsuwanna Y, Guntapong R, Chiwakul M, Tacharoenmuang R, Onvimala N, Wakuda M, Kobayashi N, Taniguchi K. *Detection of human rotavirus with G12 and P[9] specificity in Thailand.* J Clin Miicrobiol 2002;40:1390-1394.
2. *Identification of Candida dubliniensis using Multiplex PCR.* Department of Medical

Science Journal 2002;44(2):

3. Wangroongsarb P, Puchaniyada P, Naigowit P and Toshikatsu H. Chalmydophila pneumoniae *Specific Antibodies in Thai Patients with Myocardial Infarction* Jpn J Infect Dis 2002;55:49-51.
4. Isarangkura na Ayuthaya P, Katano H, Inagi K, Auwanit W, Sata T, Kurata T, Yamanishi K. *The seroprevalence of human herpesvirus 8 infection in the Thai population.* Southeast Asian J Trop Med Public Health 2002;297-305.

Year 2003

1. Wakuda M, Nagashima S, Kobayashi N, Pongsuwanna Y, and Taniguchi K. 2003 *Serological and genomic characterization of a G12 human rotavirus in Thailand.* J Clin Microbiol 2003;41:5764-5769.
2. *The first isolation of Ustilaginomycetous Anamorphic Yeast, Pseydozyma species, from patients' blood and a description of two new species: P. parantarctica and P. thailndica.* Microbiol Immunol 2003;47(3):183-190.
3. Wangroongsarb P, Kanonkporn G, Potkanchanapong W, Apiram V, Mayura K, Toshikatsu H. Chalmydophila pneumoniae *Infection among young children with respiratory diseases in Thailand* Jpn J Infect Dis 2003;56:146-50.
4. Kasuga T, White TJ, Koenig G, McEwen J, Restrepo A, Castaneda E, Da Silva Lacaz C, Heins-Vaccari EM, De Freitas RS, Zancope-Oliveira RM, Qin Z, Negroni R, Carter DA, Mikami Y, Tamura M, Talor ML, Miller GF, Poonwan N, Taylor JW. *Phylogeography of the fungal pathogen Histoplasma capsulatum.* Mol Ecol 2003;12(12):3383-401.
5. Sa-ngasang A, Wibulwattanakit S, Chanama S, O-rapinpatipat A, Kurane I. *Evaluation of RT-PCR as a tool for diagnosis of secondary dengue virus infection.* Japanese Journal of Infectious Diseases 2003;56:205-209.

Year 2004

1. Chanama S, Anantapreecha S, A-nuegoonpipat A, Sa-ngasang A, Kurane I. *Analysis of specific IgM responses in secondary dengue virus infections levels and positive rates in comparison with primary infections.* J Clin Virol 2004;31:185-189.
2. Anantapreecha S, Chanama S, A-nuegoonpipat A, Kurane I, Sawanpanyalert P. *Annual change of predominant dengue virus serotype in six regional hospitals in Thailand from 1999 to 2002.* Dengue Bulletin Vol. 2004;28:1-6.
3. Guntapong R, Grant SH, Oka T, Ogawa S, Kageyama T, Pongsuwanna Y, Katayama K. *Norovirus and sapovirus infections in Thailand*. Jpn J Infect Dis 2004;57:276-278.
4. Shimizu H, Utama A, Onvimala N, Li C, Li-Bi Z, Yu-Lie M, Pongsuwanna Y, Miyamura T.

No title. Pediatric international 2004;46:231-235.

5. Kageyama A, Poonwan N, Yazawa K, Mikami Y, Nishimura K. *Nocardia asiatica sp. Nov., isolated from patients with nocardiosis in Japan and clinical specimens from Thailand.* Int J Syst Evol Microbiol. 2004;54(Pt 1):125-30.
6. Kageyama A, Poonwan N, Yazawa K, Mikami Y, Nishimura K. *Norcardia beijingnensis, is a pathogenic bacterium to humans: the first infectious cases in Thailand and Japan.* Mycopathologia 2004;157:155-61.
7. Saeng-Aroon S, Wichukchinda N, Myint L, Pathipvanich P, Ariyoshi K, Rojanawiwat A, Matsuda M, Sawanpanyalert P, Sugiura W, Auwanit W. *Study of antiretroviral drug-resistant. HIV-1 genotypes in northern Thailand: role of mutagenically separated polymerase chain reaction as a tool for monitoring zidovudine-registant HIV-1 in resource limited settings* J Acquir Immune Defic Syndr 2004;15;36(5):1051-6.
8. Saisongkorh W, Chenchittikul M, Silpapojakul S. *Evaluation of nested PCR for the diagnosis of scrub tyhus among patients with acute pyrexia of unknown origin.* Trans R Soc Trop Med Hyg 2004;98:360-366.

Year 2005

1. Isarabgkura na Ayuthaya P, Li GM, Warachit J, Iwabu Y, Tsuji S, Auwanit W, Yamamoto D, Goto T, Hayashi Y, Kiso Y, Ikuta K. *Different susceptibility of human immunodeficiency virus type 1 to Env gp41- derived synthetic peptides corresponding to the C-terminal heptad repeat regions.* Microbes Infect 2005;7:356-364.
2. Wichukchinda N, Shino T, Srisawat J, Rojanawiwat A, Pathipvanich P, Sawanpanyalert P, Ariyoshi K, Auwanit W. *Heterosexual transmission of novel CRF01_AE and subtype B recombinant forms of HIV type 1 in northern Thailand.* AIDS Res Hum Retroviruses. 2005;21(8):734-8.
3. Poonwan N, Mekha N, Yazawa K, Thunyaharn S, Yamanaka A, Mikami Y. *Characterization of clinical isolates of pathogenic Nocardia strains and related actinomycetes in Thailand from 1966-2003.* Mycopathologia 2005;159(3):361-8.
4. Kageyama A, Hoshino Y, Yazawa K, Poonwan N, Takeshita N, Maki S, Mikami Y. *Nocardia cyriacigeorgica is a significant pathogen responsible for nocardiosis in Japan and Thailand.* Nycopathologia. 2005;16-(1):15-9.
5. Anantapreecha S, Chanama S, A-nuegoonpipat A, Naemkhunthot S, Kurane I. *Serological and virological features of dengue fever and dengue haemorrhagic fever in Thailand from 1999 to 2002.* Epidemiol Infect J 2005;133:503-507.
6. Chanama S, Sukprasert W, Sa-ngasang A, Kurane I, Anantapreecha S. *Detection of Japanese Encephalitis (JE) virus specific IgM in cerebrospinal fluid and serum samples*

from JE patients. Japanese J Infect Dise 2005;58:295-296.

Annex 5: Interview and its Result

Output from NIH Counterparts Interview

Dr. Panita Patipwanit: Cohort Studies

1. What is the current status of Lampang cohort study in terms of the number of patient registration?

Nowadays, the number of patient registration in cohort study has been decreasing. In the mean time, the number of patients infected HIV/AIDS has been increasing.

2. Is there any other research activity utilizing samples collected from cohort study?

After the project termination, the activity of cohort study has been maintained and expanded. Recently, there are many organizations conducting researches together with NIH, for example the National Institute of Infectious Diseases (NIID) and Osaka University in Japan.

3. Is there any difference in registration procedures for female and male participants in cohort study? For instance, female staff of a hospital will support in registration when female participants come.

There is no difference in registration procedures for both female and male participants because of the limited number of human resource.

4. Is there any manual and/or guideline commonly used by cohort study staff in order to maintain the quality of research?

All relevant techniques for immunological, virological, molecular studies of HIV-1 infection and AIDS have been transferred to the staff by individual training in order to maintain the quality of research.

5. Is there adequate budget from the central and/or local government(s) of Thailand to sustain the cohort study?

The main budget has been allocated from Department of Medical Science and some from other international organizations. Moreover, another source of income to supporting the project are obtained from study tours conduct by other agencies in order to take a visit of cohort study activities at Lampang hospital**.**

6. Are there any network systems for the share/use of the data/information collected from cohort study? If yes, what kinds of networks are they and what kind of organization can use this network?

The HIV/AIDS infected patients cooperation networks in provincial level has been developed and expanded to many provinces, especially in the Northern part of Thailand. The essential medical information has been shared among networks and academic conferences have been held on regular basis in order to exchange their valuable experiences to cope with HIV/AIDS disease.

7. Are there unexpected achievements and/or problems occurred by new technologies and/or systems transferred by the project?

All relevant techniques and technologies transferred by the project are still effective for NIH staff to develop and further their studies in related fields.

Ms. Krongkaew Supawat: Laboratory Network for Surveillance

1. What is a sentinel laboratory?

Sentinel laboratories are sort of monitoring labs for emerging and re-emerging infectious diseases control and prevention which work closely together with the local hospitals and NIH (under Laboratory Based Surveillance of Emerging Infectious Diseases Office or EID Office)

2. Has the project enhance further the control of infectious diseases since the project termination?

Not only these four sentinel laboratories have maintained their function as monitoring laboratory for the EID surveillance program but they have expanded their collaboration with other local hospitals, academic institutions and international agencies as well, for example the World Health Organization (WHO), International Emerging Infectious Program (IEIP) under U.S. Centers for Disease Control and Prevention (US-CDC), PATH and Osaka University, .

3. Are there unexpected achievements and/or problems occurred by new technologies and/or systems transferred by the project?

The appropriate laboratory techniques for the diagnosis of emerging and re-emerging pathogens gained from Japanese experts have been improved and developed to strengthen the capability of NIH laboratories network.

4. Is there any program to transfer the latest diagnostic methods from NIH to sentinel laboratories?

NIH and sentinel laboratories have been working together in order to share updated information and knowledge regularly.

5. Are there any other donors supporting the control of infectious diseases?

NIH have been collaborating with many international agencies in order to conduct surveillance/ researches related to infectious diseases and exchange researchers to enlarge our knowledge for mutual benefits.

6. Do you have efficient human resource to keep your surveillance active?

We allocated some budget from the donors to recruit capable supporting staff which help our surveillance activities run smoothly.

7. Is there any manual and/or guideline commonly used for the control of infectious diseases.

Appropriate manuals for collecting and handling specimens and transporting methodologies prepared by NIH have been utilized well.

8. Is the budget for EID activities allocated from the central government or local government? Is it sufficient?

The most important thing to sustain financial status for EID activities is that DMSc/NIH policy supports EID surveillance program to conduct its activities continually. Since the sentinel laboratories have been established and play important roles for infectious diseases control and prevention in the region; the budget comes from many sources, not only from central government but other international agencies as well. Moreover, the sustainability of the project depends on the cooperation between local hospitals and the sentinel laboratories. For this reason, NIH has been supported as much as essential tools and equipment related

to EID activities as well as allocated some budget for collecting specimens to the local hospitals.

9. Can the data/information collected from sentinel laboratories be shared with other organization/institute under the current regulation?

Regarding to quality assurance basis, all laboratory data from the collaborating hospitals with some patient information are collected and sent to the EID Office and the NIH laboratory result will be sent back by hard copies with signature of authorized person. The data will be input in computers to analyze epidemiological features of pathogens under the EID surveillance. In the event that the laboratories discover emerging or re-emerging pathogens that pose the public health threat, the data will be sent to "The risk communication committee of DMSc" in order to discuss and conduct further investigate if necessary. In the case that the result of investigation is significant, the committee will report to the director general of Department of Medical Science in order to verify and cooperate with concerned agencies such as Department of Disease Control to announce to the public for diseases control and prevention.

10. How well does the network between sentinel sites and NIH work?

The initial web-based database of laboratory network system has been developed by Information and Technology Center, Ministry of Public Health. After the project termination, target diseases database under the EID surveillance which was categorized into 9 groups has been changed into 6 groups. Nowadays, the new web-based database is completed and available on website for authorized person from sentinel hospitals to input their data via online system.

Mr. Wattanapong Wootta: Laboratory Network for Surveillance

1. How well does the network between sentinel sites and NIH work?

The network between NIH and sentinel laboratories still exists but its form is just one way. It means that sentinel laboratories would send the information collected in paper basis to NIH and NIH will input this information into database (Excel base). Basically this database is not accessible for eternal users or researchers.

Mrs. Pimjai Naigowit: National Repository System for HIV-1 Vaccines and Serum Bank

1. What is the current status of stored samples from HIV vaccine trials and the serum bank?

The number of collected samples has not been increasing due to the budget limitation. Precisely refrigerators which are necessary for sample storage could not be purchases and maintenance cost for it is not affordable for time being. Therefore, there is no significant progress.

2. Is there adequate budget to sustain the project work?

We have been trying to obtain the respective budget through implementation of newly assigned project. Currently the overall cost for maintenance is introduced through two local projects.

Dr. Raywadee Butraporn: Evaluation System for Vaccines with Animals in P2/P3 Labs.

1. Has the quality of research performance been maintained or improved since the project termination?

In order to maintain our knowledge and techniques transferred by the project, we still keep personal contact with some experts regularly for exchanging information and new technologies to extend our knowledge and improve our capability to carry out the quality researches by ourselves.

2. Has Good Laboratory Practice (GLP) standard been installed in NIH for clinical test of HIV vaccine?

Since there are many factors getting involved in order to achieve GLP installation. The most important factor is that this procedure needs strongly and continually support from the policy-makers. Nowadays, NIH has been working on this matter.

Ms. Atchareeya A-nuegoonpipat: Studies of Emerging & Re-emerging Disease

1. Has the quality of research performance been maintained or improved since the project termination?

Some techniques have been utilized well and applied to upper level operation.

2. Is the project technical know-how still relevant?

Some techniques transferred by experts require animal test that conflict with Buddhism way. For this reason, we opt to apply other techniques such as producing antibody from cell culture in stead of using animals.

3. Have there been any limitations and/or constrains to inhibit the further development of the project derived from the government policy?

Basically, all departments have their own policies based on main policy of the Ministry of Public Health. The priority of policy depends on the Director General of each department and the situation at that time, for example a bird flu epidemic takes first priority compared to other issues.

4. How far have technical networks been expanded since the project termination?

There is no any program to transfer diagnosis methods from NIH to sentinel laboratories or other laboratories since all methods are specific techniques which suitable for NIH work only.

5. Is there any manual and/or guideline commonly used for controlling the quality of researches on studies of emerging & re-emerging disease?

We have standard operating manual which has been updated every year.

Annex 6: List of JICA Procured Equipments

No.	Item	Q'ty	Place of Installation	Condition (good,G) or (not so good,N)
Equipment for JFY1999				
1	Shaking Incubator	1	HIV studies	G
2	Autoclave	1	P2/3 Laboratory	G
3	High Speed Refrigerated Microcentrifuge	1	P2/3 Laboratory	G
4	Low Speed Refrigerated Centrifuge	1	P2/3 Laboratory	G
5	CO_2 Incubator	2	P2/3 Laboratory	G
6	Inverted Microscope	1	P2/3 Laboratory	G
7	Freezer (-80°C)	1	P2/3 Laboratory	G
8	Freezer (-30°C)	1	P2/3 Laboratory	G
9	Refrigerator	1	P2/3 Laboratory	G
10	Safety Cabinet	1	Field Station	G
11	Bench-Top Centrifuge	1	Field Station	G
12	Microscope	1	Field Station	G
13	Freezer (-80°C)	1	Field Station	G
14	Freezer (-30°C)	1	Field Station	G
15	Refrigerator	1	Field Station	G
16	Dry-Shipper	2	Field Station	G
17	Vehicle	1	Field Station	G
18	Computer	2	Field Station	G
19	Printer	1	Field Station	G
20	Liquid Nitrogen Freezer	1	Field Station	G
21	Gas Killer (CO_2 Chamber)	1	Animal Laboratory	G
22	Breeding Guinea Pig Set (Drawer Type)	12	Animal Laboratory	G
23	Guinea Pig Rack Set	1	Animal Laboratory	G
24	Stainless Steel Shelf for Mouse Cages	30	Animal Laboratory	G
25	Stainless Steel Shelf for Rat Cages	18	Animal Laboratory	G
26	Autoclave	1	Animal Laboratory	G
27	Hot Air Oven	1	Animal Laboratory	G
28	Ice Maker	1	Animal Laboratory	G
29	Refrigerated Compact Centrifuge	1	Animal Laboratory	G
30	High-Speed Microcentrifuge	1	Animal Laboratory	G
31	Laboratory Refrigerator	1	Animal Laboratory	G
32	Safety Cabinet	2	Emerging and Re-emerging Diseases Studies	G
33	CO_2 Incubator	2	Emerging and Re-emerging Diseases Studies	G
Equipment for JFY2000				
34	Blood Cell Counter	1	HIV Lab	
35	Liquid Nitrogen Tank	3	Arboviruses Lab	G=1, N=2
36	Heat Block	2	Arboviruses Lab	G
37	Therma Cycler 2400	1	Hepatitis Viruses Lab	G
38	Electrophoresis Set	1	Hepatitis Viruses Lab	G
39	UV Transiluminator and Camera	1	Hepatitis Viruses Lab	G
40	Dark Field Microscope with Camera	1	Leptospira Lab	G
41	Autoclave	1	Leptospira Lab	G
42	Vehicle	1	NIH Project Office	G
43	Liquid Nitrogen Freezer Set (10K-Kryos-Controlers)	1	HIV Lab	G
44	ELISA Reader	1	Arboviruses Lab	G
45	Cool Incubator	1	Diarrhea Viruses Lab	G
46	Ductless Fumehood (Bench Top)	1	Animal Lab	G
47	Automated Immunoassay System	1	P3 Lab	G
48	Water Purification System	1	P3 Lab	G
49	Autoclave	1	HIV Lab	G
Equipment for JFY2001				
50	FACS Caliber Analyzer 3 color/automatic FACS Loader/Sample Processor	1	HIV Lab	G
51	JVC Visualizer	1	NIH	G
52	LVP	1	NIH	G
53	Copy Machine	1	NIH	G
54	Automatic Tissue Processor with Vacuum Function and Fume Control	1	Animal Lab	G
55	Programmable Multiple Routine Strainer	1	Animal Lab	G
56	Programmable Tissue Embedding Station	1	Animal Lab	G
57	Rotary Microtome Manual Feed	1	Animal Lab	G

No.	Item	Q'ty	Place of Installation	Condition (good,G) or (not so good,N)
58	Compound Microscope with Teaching Head for Three Persons	1	Animal Lab	G
59	UV Spectrophotometer	1	Enteric Bacteria Lab	G
60	Gene Amp PCR System	1	Enteric Bacteria Lab	G
61	Fixed Angle Rotor for High Speed Centrifuge	1	HIV Lab	G
62	Portable Refrigerated High Speed Centrifuge	1	HIV Lab	G
63	Air Gard Small Animal Changing	1	Animal Lab	G
64	Lyophilizer	1	Central Facility	G
65	Cytospin	1	Central Facility	G
66	Deep Freezer	1	Anarobe Lab	G
67	Incubator	1	Anarobe Lab	G
68	Electronic Precision Balance	1	Respiratory lab	G
69	EliSpot	1	P3 Lab	G
Equipment for JFY2002				
70	Liquid Nitrogen Storage	1	Arbovirus Lab	G
71	Flake Ice Maker	1	Immunology Lab	G
72	Liquid Nitrogen Storage 10L	2	Nervos System Lab	G
73	ABI PRISM-3100 Automatic Genetic Analyzer	1	HIV/AIDs Lab	G
74	Ultralow Temperature Upright Freezer	1	Enterovirus Lab	G
75	Refrigerated Microcentrifuge/rotor	1	Respiratory Virus Lab	G
76	Mini Protein 3 Electrophoreisis Cell	1	Rikettsia Lab	G
77	Mini Trans Blot Cell	1	Rikettsia Lab	G
78	Power Supply	1	Rikettsia Lab	G
79	Low Temperature Oven	2	Hepatitis Lab	G
80	Mini Vaccume Centrifuge Evaporator	1	Enterovirus Lab	G
81	Deep Freezer -80^{o}C	1	HIV Lab	G
82	Liquid Nitrogen Freezer Set	1	NIH	G
83	Liquid Nitrogen Freezer Set	1	NIH	G
84	Elisa Microplate Reader	1	NIH	G
Equipment for JFY2003				
85	Cage and Rack Washer	1	Animal Lab	G
86	Analytical Balance	1	HIV Lab	G
87	ELISA Reader	1	Animal Lab	G
88	Washer Extractor	1	Animal Lab	G
89	Tumble Dryer	1	Animal Lab	G
Equipment for Cohort Activities				
1999	Computer		NIH	N
1999	Computer		NIH	N
1999	Computer		NIH	N
1999	Printer		NIH	G
1999	Printer		NIH	G
1999	Scanner		NIH	G
1999	Computer		NIH	G
1999	Computer		Lampang Hospital	N
1999	Computer		Lampang Hospital	N
1999	Printer		Lampang Hospital	G
1999	Printer		Lampang Hospital	G
1999	Copy Machine		Lampang Hospital	G
1999	Air conditioner		Lampang Hospital	G
1999	GPS III		Maetha Hospital	G
1999	GPS III		Maetha Hospital	G
1999	Computer		NIH	G
1999	COMATEC		Lampang Hospital	N
1999	Computer		Maetha Hospital	G
1999	Printer		Maetha Hospital	G
1999	LEGS KIT		Maetha Hospital	G
1999	MEMORY		Maetha Hospital	G
1999	CANON		Maetha Hospital	G
1999	Overhead projector		Lampang Hospital	G
1999	Fax machine		Lampang Hospital	N
1999	Geneamp PCR system 9700		Lampang Hospital	G
1999	Deep Freezer -80^{o}C		Lampang Hospital	G
1999	Automatic voltage		Research Lab. Lampang Hospital	G
1999	Computer		Lampang Hospital	G

No.	Item	Q'ty	Place of Installation	Condition (good,G) or (not so good,N)
1999	Speaker Amplifier		Lampang Hospital	N
2000	STATA		Lampang Hospital	G
2000	Shredding machine		Lampang Hospital	G
2000	Scanner Microrek		Maetha Hospital	N
2000	Card for Scanner		Maetha Hospital	N
2000	Safety box		Lampang Hospital	G
2000	Cryo-gloves (1 set)		Lampang Hospital	G
2000	Air conditioner for PCR		Lampang Hospital	G
2000	Freezer for PCR		Lampang Hospital	G
2000	Refrigerator for PCR		Lampang Hospital	G
2000	Table for PCR		Lampang Hospital	G
2000	Cryo-Apron		Lampang	G
2000	Cryo-Apron		Lampang	G
2000	Preciterm Water Bath		NIH	G
2000	Shaker		NIH	G
2000	GeneAmp PCR 9700		NIH	G
2000	Dry Thermo Bath		Lampang	G
2000	Aluminum Block		Lampang	G
2000	Aluminum Block		Lampang	G
2000	High-Speed Microcentrifuge		Lampang	G
2000	Mini-Gel Electrophoreses		Lampang	G
2000	Mini-Gel Electrophoreses		NIH	G
2000	Mini-Gel Electrophoreses		NIH	G
2000	Serofuge		Lampang	G
2000	Electroni Pipettor		NIH	G
2000	Microcomputer		Srirat Hospital	G
2000	Microcomputer		Srirat Hospital	G
2000	Printer		Srirat Hospital	G
2000	Laser Scan		Srirat Hospital	G
2000	GENEAMP PCR 2400		Lampang	G
2000	Computer		Lampang	G
2000	Printer		Lampang	G
2001	Refrigerator		Lampang	G
2001	Photocopier		Lampang	G
2001	Votex Mixer		Lampang	G
2001	Centrifuge		Lampang	G
2001	Zip Drive		Lampang	N
2001	Zip Drive		Lampang	N
2001	Pipetman		Lampang	Y
2001	Pipetman		Lampang	Y
2001	Micro Centrifuge		Lampang	Y
2001	CD Writer		Lampang	N
2001	CD Writer		Lampang	N
2001	CD Writer		Lampang	N
2001	Microwave		Lampang	G
2001	Computer Set		Lampang	G
2001	Automatic Microplate Washer		Lampang	G
2002	UPS for EliSpot		NIH	G
2002	Deep Freezer -80^{o}C		NIH	G
2002	Deep Freezer -80^{o}C		NIH	G
2002	Legend Tabel Top Centrifuge		NIH	G
2002	Infusion Pump		Lampang	N
2002	Digital Finger Pulse Oximeter		Lampang	G
2002	Digital Finger Pulse Oximeter		Lampang	G
2002	Blood Warmer		Lampang	G
2002	digital Thermoneter		Lampang	N
2002	Gene Scan Module/Genotyper Version 3.7		NIH	G
2002	Amplicore		NIH	G

Annex 7: Summary of Conference and Training

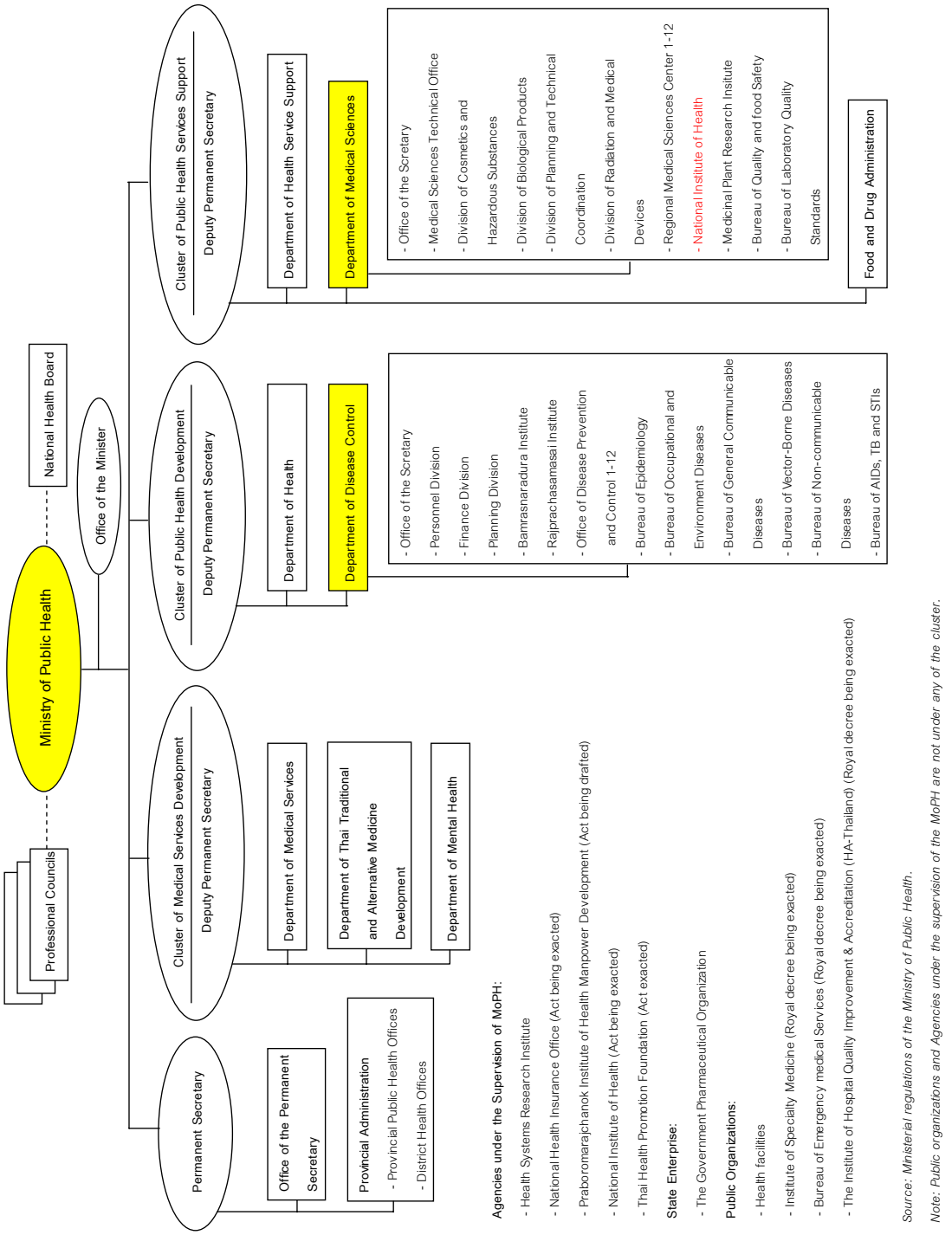
Duration	Conference/ Study Tour	No.of Participants	Training	No.of Trainee	Presentation/ Being trainer	No.of trainer
2004						
February	Japan	1				
March	Hong Kong	3	USA	2	Malaysia	1
	Maldeive	3				
	England	5				
	Sweden, Chek, Russia	1				
May	China	5	France	1		
	Natherland	1	Japan	2		
	USA	4	Denmark	2		
	Vietnam	1				
	Japan	1				
June	USA	3	USA	1	Cuba	1
	Japan	1			Switzerland	1
	Korea	1				
July	Finland	1	Thailand	2	Finland	1
August	Malaysia	1	USA	1		
October	Vietnam	3	USA	4	Japan	1
	Malaysia	1	India	1	Thailand	1
	Japan	2				
	Ethiopia	1				
	Singapore	1				
	England	2				
	Australia	1				
	Thailand	2				
	USA	1				
November	Chile	2				
	Philippines	3				
	China	1				
	Canada	1				
December	France	1				
	Japan	1				
	China, Vietnam	1				
	Singapore	1				
	China	3				
2005						
January	Japan	4				
	USA	2				
	Switzerland	1				
February	Korea	2	Australia	1		
	France	1				
	Hong Kong	2				
March	Switzerland	2				
	China	2				
	Vietnam	2				
	Japan	4				
April	Germany	2	Cambodia	1	Denmark	1
	Japan	7			India	1
	Singapore	1			Cambodia	1
	Canada	1				
	Malaysia	2				
	Cambodia	1				
May	China	5			India	1
	England	6				
	England, France	9				
	Vietnam	2				
	USA	1				
	Japan	2				
	Korea	5				

Duration	Conference/ Study Tour	No.of Participants	Training	No.of Trainee	Presentation/ Being trainer	No.of trainer
June	Philippines	1				
	USA	7				
	India	2				
	China	5				
	Malaysia	2				
	Singapore	1				
	Japan	2				
July	France	1				
	Singapore	3				
	Japan	2				
	USA	1				
August	Japan	6	USA	2	Myanmar	1
	Singapore	2				
	Switzerland	1				
September	Korea	17	USA	3		
	Switzerland	1				
	China	1				
	Indonesia	1				
	Singapore	1				
	USA	2				
October	Indonesia	1	USA	1	Korea	2
	India	1	Japan	1		
	Sweden	3				
	France	1				
	Switzerland	1				
November	Germany	1			Japan	1
	Hong Kong	1			Cambodia	2
	India	2				
	Japan	4				
	China	4				
December	Japan	5	Taiwan	1		
2006						
January	Japan	2				
	Canada	1	Japan	1		
	Australia, Switzerland	1				
	Brazil	1				
February	Austria	1	Hong Kong	3	Cambodia	2
	Japan	4	USA	2		
	Vietnam	1				
March	Germany, Spain	5				
	Japan	4				
	China	2				
	Vietnam	1				
	USA	1				
April	Europe	2				
	USA	4				
	France	3				
	India	1				
	Switzerland	1				
May	Natherland	1			Vietnam	5
	USA	9				
	Austria	1				
	Malaysia	1				
	Indonesia	1				
	Vietnam	1				
	India	2				
	Korea	2				

Duration	Conference/ Study Tour	No.of Participants	Training	No.of Trainee	Presentation/ Being trainer	No.of trainer
June	Canada	2				
	USA	6				
	India	1				
	Sweden	1				
	India	1				
	Switzerland	2				
	Natherland	8				
	China	3				
	Cuba	1				
	Lao	3				
July	Spain	1	Japan	1	Myanmar	1
August	China	5	Japan	2	Vietnam	2
	Japan	4				
	India	1				
	Canada	3				
	Myanmar	5				
	Switzerland	1				
	Natherland	5				
September	Japan	6	Japan	1		
	Vietnam	3	USA	1		
	Singapore	2				
	USA	6				
	China	3				
	Switzerland	1				
October	Austria	1	Japan	3	Japan	1
	Turkey	1				
	Denmark	1				
	Switzerland	2				
	Japan	1				
	India	1				
	China	1				
November	Brazil	1	Indonesia	1	USA	1
	Japan	3			Cambodia	3
	Singapore	3				
	USA	1				
	China	1				
	Malaysia	2				
	Switzerland	1				
December	India	1				

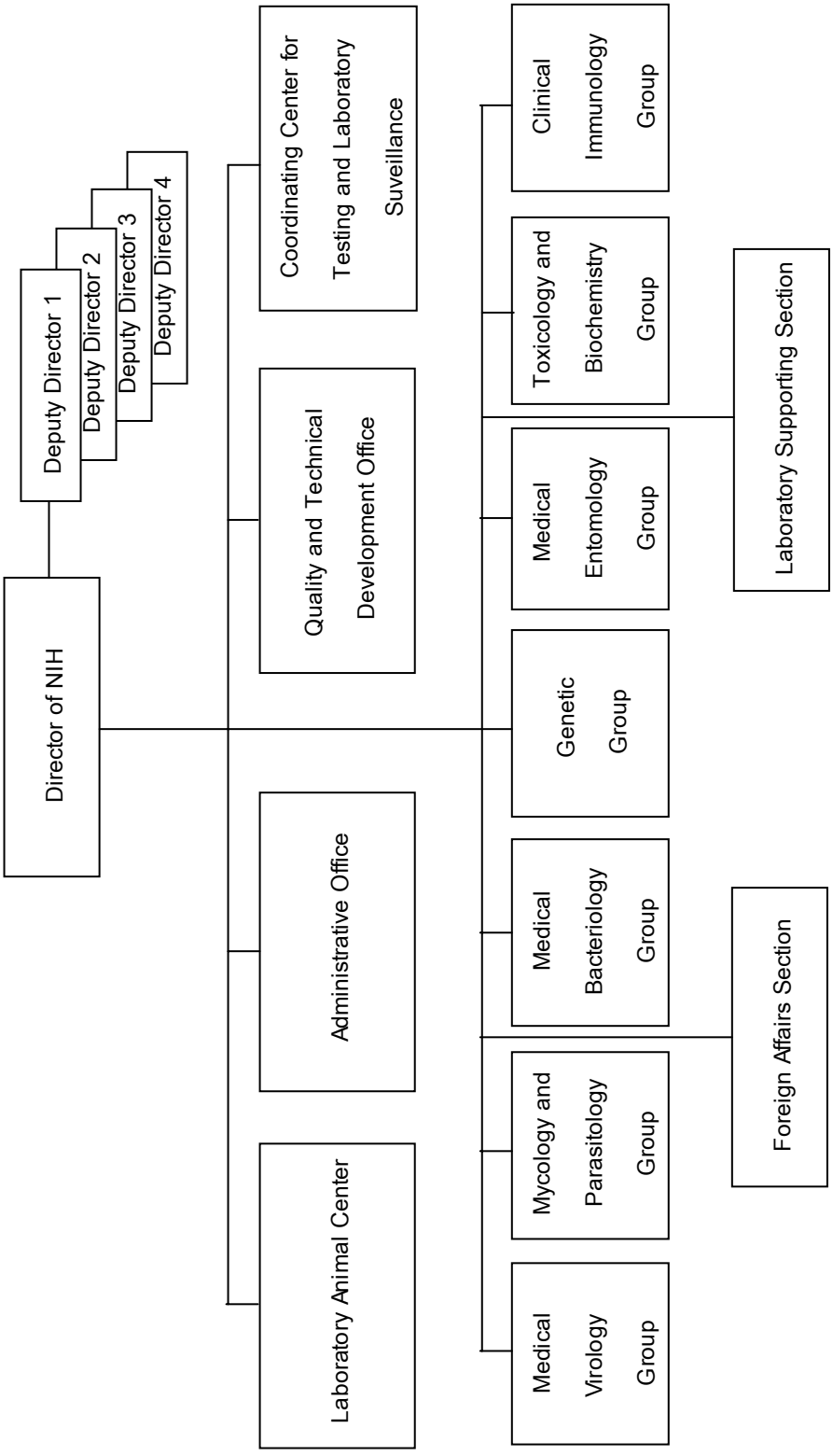
Annex 8: NIH Organizational Chart

Annex 8: NIH Organizational Chart



Source: Ministerial regulations of the Ministry of Public Health.

Note: Public organizations and Agencies under the supervision of the MoPH are not under any of the cluster.


Director of NIH
Deputy Director 1
Deputy Director 2
Deputy Director 3
Deputy Director 4
Coordinating Center for Testing and Laboratory Suveillance
Quality and Technical Development Office
Administrative Office
Laboratory Animal Center
Clinical Immunology Group
Toxicology and Biochemistry Group
Medical Entomology Group
Genetic Group
Medical Bacteriology Group
Mycology and Parasitology Group
Medical Virology Group
Laboratory Supporting Section
Foreign Affairs Section

Annex 9: Third Party Review by External Experts

Third Party Review by External Experts

Ex-post Evaluation Study on the Project for Strengthening of NIH Capacities for Research and Development on AIDs and Emerging Infectious Disease in Thailand

1. Evaluation framework

Scope of the study on impacts of the project which was operationally defined in terms of HIV/AIDs Cohort study, EID, publications and collaborations is too limited which could lead to overlook other dimensions which probably emerged from the project implementation, for example:

- Does the NIH have other competitive techniques with the already transferred technology?
- Does the already transferred knowledge limit or enhance perspectives of the counterpart?
- Does the already transferred knowledge help to establish some standards for the NIH operations?
- Regarding cohort study, does the project help stimulating other cohort study?
- What is the utility and usefulness of the research publications?
- Degree of the nation's dependency on central laboratory after the introduction of the project.
- Does the project work create any impact at the policy level?
- Is the technology appropriate for the country and could be reproduced?
- Reputation of NIH in the field of HIV/AIDs and EID?
- Does the cohort study raise the issue of health ethics?
- etc.

Findings of the study in terms of HIV/AIDs Cohort study, EID, publications and collaborations is illustration of the project achievement of overall goal after the project termination which the report already well described.

In terms of sustainability, the study should provide more information about whether project activities and outputs have been prolonged and how. For instance, after transferring technology and knowledge,

- Whether these technology and knowledge was well maintained and sustained?
- Were these techniques developed further?
- Do they in current usage?
- Do the counterpart personnel successfully expand their already transferred knowledge and technology to their colleagues and other agencies?
- Are the personnel more capable and well recogniszed in the field of HIV/AIDs and EID Laboratory?

2. Evaluation methodology

More details of the study methods should be added for instance how many respondents, how many key informants, how are they relevant to the project for instances.

3. Evaluation results and analysis

Findings from the questionnaires should be incorporated into the report. For instance, how many respondents perceived high degree of project's success.

The findings on sustainability are much needed to be improved especially the financial sustainability. The study revealed financial aspect which was expected to shed light on financial sustainability of the project. But the information does not well support. The increasing of budget allocated for the DMS does not evidence the sustainability of the NIH research activities. Nor does budget for health service. More concrete data are needed to support the researchers' analysis on this issue.

For organization aspect, the issues on NIH in the region, manual/guidelines and status of procured equipment and facilities are good points to address. These points well illustrated on how already transferred knowledge and techniques are relevant to and useful for current research activities.

But there is unclear answer on how the NIH position in laboratory system for HIV/AIDs and EID is well enhanced in the Ministry of Public Health. It is found that not much relevancy between the project sustainability and the policies addressed by the study, except the decentralization policy. Besides there is much need for more information on NIH policy to reveal how the agency prioritize their work especially in the field of HIV/AIDs and EID laboratory system.

In terms of analysis of factors, both internal and external factors should be addressed in terms of why the research capability of the NIH on HIV/AIDs and EID laboratory system is sustained and prolonged. For example, are roles of the executive significant in promoting research capabilities? Could the continuity of good and closed relationship" between Thai and Japanese counterpart be a possible cause? Could it be the country policies and situation on AIDs and EID? If yes, how?

For the utility purpose of the evaluation report, recommendations and lesson learned should be highlighted on what should be concerned for future cooperation between two counterparts for examples roles of technical experts, the necessities of following up activities, participation of the counterpart in the project design, the accomplishment of the beneficiaries' need, how to sustain the project achievement over times and etc.

4. Overall Comment

The quality of the report is considered fair but not fully satisfied. Its content is needed to be much improved in many issues especially in terms of supplementary information as mentioned earlier.

Given the reviews on the date February 1, 2007

Kanokkan Anukansai, Ph.D