№

ケニア国
感染症研究対策プロジェクト（Ⅱ）
巡回指導調査団報告書

平成11年 3月

国 際 協 力 事 業 団
医　療　協　力　部

医 協 二
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序　　文

ケニア共和国は、東部アフリカ地域に位置する人口約3000万人の国です。同国では、感染症が国民の健康を奪う最大の脅威となっています。乳幼児の死亡原因では、呼吸器感染症や下痢症、安価な予防接種により防げる感染症等が、いまだ上位を占めています。他方、成人人口におけるHIV/AIDSの急激な蔓延は、生産年齢層にある人材の命を奪うことによって、社会経済の根幹を揺るがしています。ケニア共和国は、近年、小児死亡率の上昇を経験している数少ない国のひとつでもあります。

国際協力事業団の「ケニア国感染症研究対策プロジェクト・フェーズⅡ」は、1980年代初めより一貫して当事業団が支援を行ってきましたケニア中央医学研究所（KEMRI）を実施機関とし、その研究開発能力の向上を通じて同国における感染症対策の進展に貢献することを目的に、平成８年５月から５年間の計画で実施されています。具体的には、ケニア共和国における主要感染症であるHIV/AIDS、急性呼吸器感染症（ARI)、ウイルス性肝炎を取り上げ、それらにかかる各種実験室診断技術の向上や、疫学調査等を行ってきました。

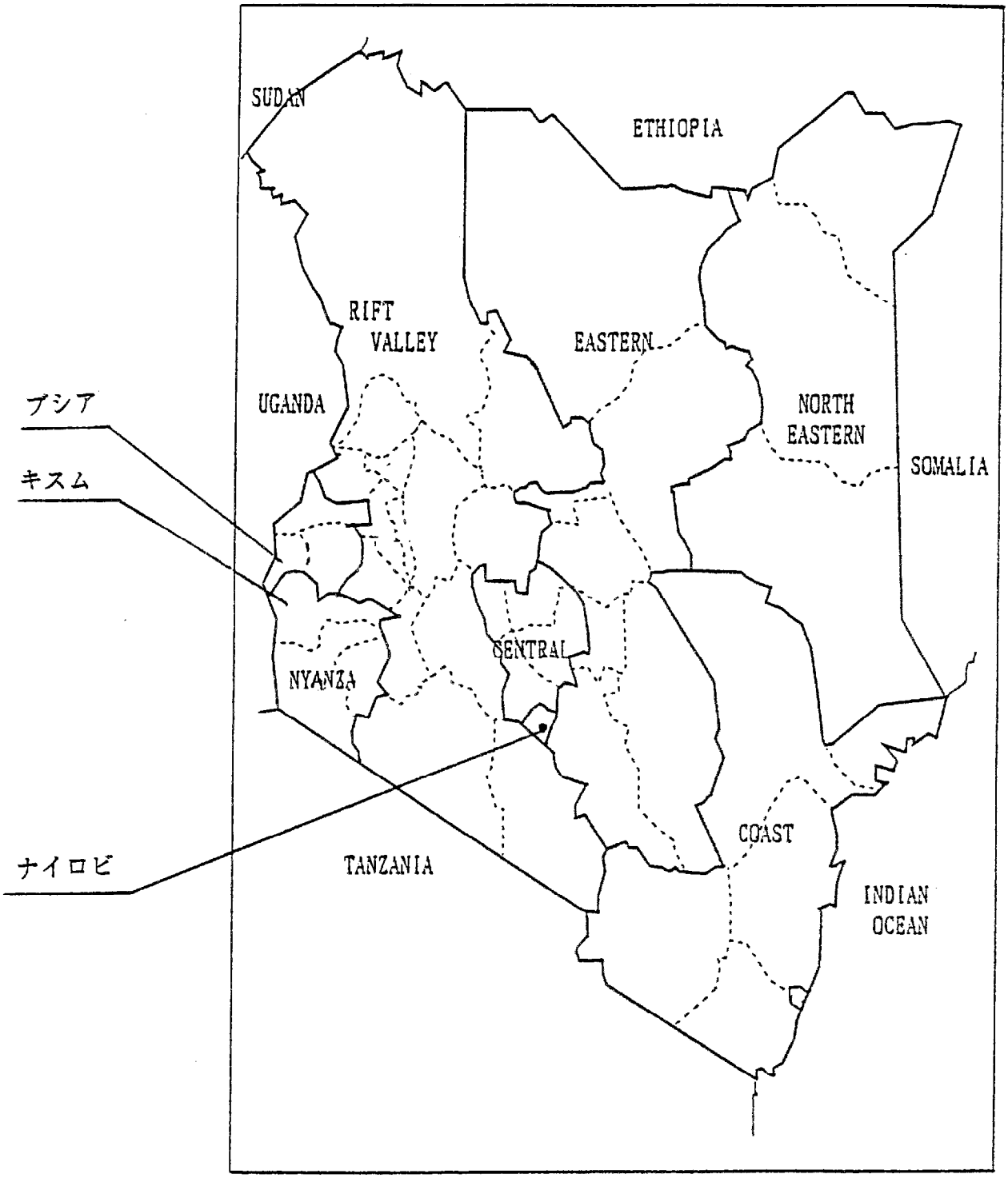
本件巡回指導調査団は、協力開始後２年半を過ぎ、折り返し点を通過した同プロジェクトについて、現段階での進捗状況を確認するとともに、今後プロジェクト終了までの方向性等について提言を取りまとめることを目的として、国内委員長である千葉峻三氏を団長に、平成11年３月３日から３月15日まで派遣されました。

本報告書は、同調査結果を取りまとめたものです。本調査にあたり多大なご協力を賜りました内外の関係各位に対し、深甚なる謝意を表します。

平成11年３月

国際協力事業団
医療協力部長　福原　毅文

地図：ケニア共和国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１．巡回指導調査団派遣

１－１　調査団派遣の目的

(1) プロジェクト国内委員による現地調査・情報収集を行うとともに、ケニア共和国（以下、ケニア）側関係者・他援助機関関係者・JICAケニア事務所および日本大使館関係者・プロジェクト派遣専門家等との協議を行い、本件プロジェクトの進捗状況の確認を行う。

(2) 具体的には、これまでの活動実績・目標達成度の確認（人的・物的投入実績の整理、活動・事業実績の整理、成果・効果の整理）を行い、必要に応じプロジェクト運営上の主要課題を抽出・検討したうえで、協力期間終了までの達成目標を含む今後の方向性および活動計画について先方と合意を形成する。

(3) 特にプロジェクト合同調整委員会（Joint Coordinating Committee）での協議については、結果を協議議事録（M／M）にまとめ、双方代表者による署名・交換を行い、公式文書として残す。

１－２　調査団派遣の背景

ケニア中央医学研究所（Kenya Medical Research Institute：KEMRI）はケニア医学研究の中核的機関である。わが国は1982年に無償資金協力にてKEMRIナイロビ本部施設の整備を行って以来、技術協力を通じて一貫してKEMRIの能力向上を支援してきている（表１－１）。

1990年５月より1996年４月までは、「感染症研究対策プロジェクト」を通じ、ウイルス性・細菌性下痢症、ウイルス性肝炎、住血吸虫症、フィラリア症等の基礎研究・疫学研究等にかかる技術協力を行った。ケニア政府は、同プロジェクトの成果をも踏まえ、同国保健分野の重要課題であるHIV/AIDS、急性呼吸器感染症（ARI）、ウイルス性肝炎の各疾患に関する研究および対策のさらなる進展を図るため、引き続きわが国に対し協力を要請してきた。

表１－１　わが国のKEMRIに対する過去の協力概要

協力案件名	協力の概要
無償：中央医療研究所建設計画 （1982年１／２期、1983年２／２期）	1979年、かつて東アフリカ医療研究協会のもとにあった複数の研究所を統合して設立されたKEMRIの、ナイロビ本部施設の整備を実施。１／２期15億円、２／２期12.45億円。
プロ技：ケニア中央医学研究所プロジェクト （1985／５～1990／４）	上記無償で施設整備を行ったKEMRIを対象に、ウイルス学（下痢症、ウイルス性肝炎）、細菌学（下痢症）、寄生虫学（住血吸虫症）の基礎研究・疫学研究等にかかる技術協力を実施。Ｂ型肝炎診断試薬製造にかかる技術移転も開始された。
プロ技：感染症研究対策プロジェクト （1990／５～1996／４）	ウイルス性・細菌性下痢症、ウイルス性肝炎、住血吸虫症、フィラリア症等の基礎研究・疫学研究等にかかる技術協力を実施。Ｂ型肝炎診断キットの現地生産（抗原・抗体精製の現地化）開始等の成果に結実。

JICAは、1996年１月の事前調査団および1996年３月の実施協議調査団の派遣を経て、同年５月から５年間の計画で本件プロジェクト「感染症研究対策プロジェクト・フェーズⅡ」を開始した。プロジェクト開始後、1997年８月には計画打合せ調査団を派遣し、開始後１年間の活動レビュー等を行った。

これら調査等を通じて合意された活動計画は、HIV部門として①HIVスクリーニングキットの開発、②HIVの分離・同定、③抗ウイルス活性をもつ薬草のスクリーニング、④HIV母子感染予防法の確立等、ARI部門として①病因学的研究を通じた主要なARI病原体の特定、②臨床的研究を通じた迅速かつ適切な診断・治療法の確立、③疫学調査を通じたリスク要因の特定と効果的な予防・治療法の確立等、ウイルス性肝炎部門として①Ｂ型肝炎スクリーニングキットおよびアルファフェトプロテイン（AFP）スクリーニングキットの開発・普及、②ウイルス性肝炎および肝臓ガンの疫学的調査と診断技術の向上、③肝臓ガンの病理学的研究等を含む内容となっている。

プロジェクト開始から２年半が経過し、チーフアドバイザーを含む長期専門家の交代が進むなかで、プロジェクトのこれまでの目標達成度等について討議議事録（Ｒ／Ｄ）等で合意された当初計画に照らし合わせて進捗状況の確認を行う必要があるとともに、プロジェクト終了時までの到達目標・目的およびそれらを踏まえた今後の活動の方向性・計画等について確認する必要があった。

なお、特記事項としては、1999年２月にわが国無償資金協力による高度安全実験施設（Ｐ３ラボラトリー）が完成し、同施設の運用指針等、本件プロジェクトとの関連から確認する必要があったことがあげられる。また、KEMRIを拠点とした新たな技術協力計画として、本件プロジェク

トによる成果を広く近隣諸国にまで普及させることを目的とした血液スクリーニング分野の第三国研修や、橋本前首相が提唱した「国際寄生虫対策イニシアティブ」に関連した協力展開が検討されていたこともあげられる。

１－３　調査団の構成

担当	氏　名	所　属
団長／総括	千葉　峻三	札幌医科大学付属病院　院長
HIV/AIDS	栗村　敬	大阪大学医学部　名誉教授
ＡＲＩ	神谷　茂	杏林大学医学部微生物学教室　教授
協力計画	瀧澤　郁雄	国際協力事業団医療協力部医療協力第二課　職員

１－４　調査日程

日順	月日	曜日	移動および業務	
			日　程	行　程
1	３月３日	水		栗村・瀧澤団員　日本発→
2	３月４日	木	午後　JICA事務所打合せ	→ナイロビ着
3	３月５日	金	午前　WHO協議 UNAIDS協議 UNICEF協議 午後　KEMRIとの準備会合	
4	３月６日	土	資料整理 報告資料作成	栗村・瀧澤団員　ナイロビ発 →キスム着
5	３月７日	日	キスム現地視察 Nyanza Provincial General Hospital Aga Khan Hospital Chlaimbo Health Centre/Rural Health Training Centre KEMRI Centre for Vector Biology and Control Research	栗村・瀧澤団員　キスム発→ ナイロビ着
6	３月８日	月	派遣専門家との打合せ 合同調整委員会資料作成	千葉団長　日本発→
7	３月９日	火	派遣専門家との打合せ 合同調整委員会資料作成	→ナイロビ着 神谷団員　日本発→
8	３月10日	水	JICA事務所協議 KEMRI協議	→ナイロビ着
9	３月11日	木	合同調整委員会	
10	３月12日	金	ミニッツ署名 JICA事務所報告 日本大使館報告	
11	３月13日	土	資料整理 報告資料作成	全団員　ナイロビ発
12	３月14日	日		（移動）
13	３月15日	月		全団員　日本着

１－５　主要面談者

(1) ケニア側関係者

1）保健省（Ministry of Health）

Mr. Philemon Mwaisaka	Permanent Secretary（**ミニッツ署名者**）
Dr. A. O. Misone	Medical Superintendent, Nyanza Provincial General Hospital

2）研究技術省（Ministry of Research and Technology）

Mr. Sammy Mbova	CBS, Permanent Secretary（**ミニッツ署名者**）

3）ケニア中央医学研究所（Kenya Medical Research Institute：KEMRI）

Dr. Davy K. Koech	Director（**ミニッツ署名者**）
Dr. M. Wasunna	Director, Acting Deputy Director（Research and Development）
Mr. Dunstan M. Ngumo	Deputy Director（Administration and Finance）
Dr. W. M. Kofi-Tsekpo	Chief Research Officer
Dr. Peter M. Tukei	Chief Research Officer
Dr. N. I. Adungo	Director, Centre for Leprosy and other Skin Diseases Research（Busia/Alupe）
Dr. G. G. Mbugua	Director, Centre for Microbiology Research
Dr. A. J. Oloo	Director, Centre for Vector Biology and Control Research（Kisumu）
Dr. F. A. Okoth	Director, Centre for Virus Research
Dr. J. M. Chakaya	Coordinator, KEMRI/JICA Project（ARI）

4）中央科学技術諮問委員会（National Council for Science and Technology）

Dr. Mohamed S. Abdullah	Chairperson（**兼**Chairperson, KEMRI Board of Management）

5）アガカーン病院（Aga Khan Hospital, Kisumu）

Dr. John Opar	Medical Advisor
Dr. Amit Goyal	Head, Pathology
Ms. Agnes A. Oggot	Director, Nursing

6）世界保健機関（WHO）

Dr. Rufaro R. Chatora	Representative in Kenya

7）国連エイズ合同計画（UNAIDS）

Dr. Olavi Elo	Director, Country Planning and Programme Development
Dr. G. B. Meskerem	Team Leader, Intercountry Team for West and Central Africa
Dr. Naamara	Country Programme Advisor

8）国連児童基金（UNICEF）

Dr. Marinus Gotink	Health and Nutrition Officer

(2) 日本側関係者

1）在ケニア日本国大使館

荒川	公使
川戸	書記官

2）JICAケニア事務所

橋本　栄治	所長
松本　　淳	次長
倉科　芳朗	所員
Mr. W. Nyambati	ローカルスタッフ

3）プロジェクト派遣専門家

藤山　佳秀	チーフアドバイザー
遠藤　哲也	業務調整
垣本　和宏	HIV/AIDS（長期）
杉浦　康夫	ARI（長期）
和田　義人	ウイルス性肝炎（長期）
安藤　良弥	HIV/AIDS・垂直感染（短期）
景山　誠二	HIV/AIDS・分子疫学（短期）

２．プロジェクトの進捗状況

２－１　投入実績

２－１－１　専門家派遣実績

専門家派遣実績の詳細については、協議議事録（附属資料）のANNEX Ⅰを参照されたい。1999年３月までに、表２－１に示すとおり、延べ10名の長期専門家および29名の短期専門家が派遣された。

表２－１　専門家派遣実績（1999年３月まで）

分野	長期人数	短期人数
チーフアドバイザー	2	0
業務調整員	1	0
HIV/AIDS部門	2	17
ARI部門	3	5
ウイルス性肝炎部門	2	5
その他	0	2
合計	10	29

２－１－２　カウンターパート研修員受入実績

カウンターパート研修員受入実績の詳細については、協議議事録のANNEX Ⅱを参照されたい。1999年３月までに、表２－２に示すとおり、延べ14名のカウンターパート研修（本邦）を実施した。

表２－２　カウンターパート研修員受入実績（1999年３月まで）

分野	人数
HIV/AIDS部門	9
ARI部門	3
ウイルス性肝炎部門	2
合計	14

２－１－３　機材供与実績

機材供与実績の詳細については、協議議事録のANNEX Ⅲを参照されたい。1996年度から1998

年度（日本会計年度）までに、表２－３に示すとおり、一般プロジェクト機材、専門家携行機材、エイズ対策・血液検査特別機材を合わせ、約３億2000万円（輸送費を含む）相当の機材供与を行った。

表２－３　機材供与実績（1996～98年度）

予算分類	1996年度	1997年度	1998年度	合計
一般機材	84,730,000	78,191,000	40,138,000	203,059,000
専門家携行機材	14,168,000	17,312,000	4,141,000	35,621,000
エイズ特別機材	29,104,000	34,838,000	19,937,000	83,879,000
合計	128,002,000	130,341,000	64,216,000	322,559,000

注１）承認済み実行計画額ベース
注２）1998年度専門家携行機材費については、1999年２月までの実績

２－１－４　現地業務費支出実績

現地業務費支出実績の詳細については、協議議事録のANNEX Ⅳを参照されたい。1996年度から1998年度（日本会計年度）までに、一般現地業務費、技術交換費、中堅技術者養成対策費、機材保守管理費、啓蒙普及活動費、視聴覚等教材整備費（実施計画諸費）、エイズ対策適正技術開発支援費（実施計画諸費）を合わせ、3896万ケニアシリング担当（約780万円）の現地業務費が支出（1998年度分については、承認）された。

研究開発活動に用いられた現地業務費のうち、部門別の割合は、HIV部門、ARI部門、ウイルス性肝炎部門のそれぞれについて、78%、12%、10%であった。

２－１－５　無償資金協力による高度安全実験施設（Ｐ３ラボラトリー）の整備

約２億3000万円の無償資金協力により、ウイルス研究センター（Centre for Virus Research）の一角に、高度安全実験施設（Ｐ３ラボラトリー）が整備され、1999年２月16日、先方に引き渡された（協議議事録のANNEX XII を参照されたい）。今後、同実験施設を用い、診断キット製造本格化に向けたHIVの大量培養等を開始していく計画である。

２－１－６　KEMRI側投入実績

カウンターパートの配置、現地業務費負担、その他のKEMRI側投入実績の詳細については、それぞれ協議議事録のANNEX Ⅴ、ANNEX Ⅵ、ANNEX Ⅶを参照されたい。

HIV/AIDS部門については32名のカウンターパートが、ARI部門には23名のカウンターパートが、ウイルス性肝炎部門には14名のカウンターパートが、研究センターの垣根を越えてそれぞ

れ参加している。

２－２　活動実績

プロジェクト各部門におけるこれまでの活動実績の詳細については、協議議事録のANNEX Ⅷを参照されたい。また、プロジェクト活動を通じてこれまでに取りまとめられた研究論文等については、協議議事録のANNEX Ⅸを参照されたい。

２－２－１　HIV/AIDS部門

HIV－１診断キットの現地生産については、月産5000テストの生産能力が確立された。現在、フィールドでの品質評価テストを実施中であるが、これまでのところ良好な結果を得ている。HIV分子疫学調査については、これまで95株について遺伝子解析がなされ、うちサブタイプAが80%、Cが９%、Dが７%、Gが１%との結果を得ている。伝統薬草木の抗ウイルス活性については、in vitroにて抗単純ヘルペスウイルス活性および抗逆転写酵素活性が調べられている。西ケニアでの母子感染予防臨床試験については、初回・２回目合わせて824名（うちHIV陽性57名）の妊婦がリクルートされた。初回妊婦については、AZT短期投与がなされ、65%のHIV母子感染抑止効果を確認した。

２－２－２　ARI部門

臨床関連については、1997年２月にバガティ病院にARIクリニックを設置し、起因菌・ウイルスと重症度の関連等を調査中である。検査室関連については、呼吸器疾患研究センター（Centre for Respiratory Diseases Research）の細菌検査および真菌検査体制が整い、ウイルス研究センター（Centre for Virus Research）におけるARI起因ウイルス検査体制が確立された。薬剤感受性試験も実施可能となり、ナイロビ地区では85%（マリンディ地区では67%）の肺炎球菌がペニシリンに耐性を示すことを明らかにした。疫学関連については、キベラ地区の2045世帯・6642人を対象にベースライン社会人口調査を行い、５歳未満児を対象にコホート調査を開始している。１年間のフォローアップを行った同地区における177名の５歳未満児１人当たりの年間ARI発現率は、6.2＋／－3.6であった。また、ARI罹患のリスク要因についても解析が行われている。また、視聴覚等教材整備費を用いて、ARIにかかる医療従事者（英語）および住民（スワヒリ語）啓蒙用ビデオを作製した。今後キベラ地区において住民教育に活用する予定である。

２－２－３　ウイルス性肝炎部門

すでに現地生産を行っていたＢ型肝炎診断キットについては、1996年に凍結乾燥化に成功し

た。1996年から1998年までに800キット（８万テスト分）が製造され、739キットが輸血血液スクリーニング用に州病院に供給された。同キットでスクリーニングされた４万7645ユニットの輸血血液におけるＢ型肝炎表面抗原保有率は、3.5%であった。また、肝臓ガンのマーカーであるアルファフェトプロテイン診断キットについては、同期間に29キット（2900テスト分）が製造され、同様に州病院に供給された。キットの使用方法については、ワークショップおよびKEMRIスタッフの巡回指導により普及が図られている。臨床・超音波診断については、これまで196名の患者を対象に実施した。肝臓ガンの病理診断については、これまで14件の肝生検を行った。

３．提言・検討事項等

３－１　課　題

課題については、協議議事録（附属資料）のANNEX Xをあわせ参照されたい。先方との協議等を通じて指摘された課題としては、以下があげられる。

３－１－１　全般的な課題

プロジェクト活動に関し、政策決定者や他の関係機関をはじめ、ケニア内外への発信努力が必要である。KEMRIで生産が可能となった製品について、安定的生産体制を確立するとともに、商標登録やマーケティング努力が必要である。プロジェクトを通じたKEMRIの人材育成をさらに促進するため、学位取得に対する支援可能性について再検討が必要である（KEMRI側の強い要望事項）。プロジェクトを通じた機材供与について、手続きの迅速化が必要である（派遣中専門家からの強い要望事項）。老朽化した機材類の廃棄を進め、スペースを確保する必要がある。自立発展性の強化に向けて、双方による協議を継続する必要がある。カウンターパートの国際学会等への参加に対する支援継続を検討する必要がある（KEMRI側の強い要望事項）。

３－１－２　部門別の課題

HIV/AIDS部門については、プロジェクトで得た情報を共有し、対策プログラムの強化につなげていくためにも、保健省、国家エイズ対策プログラム、関連NGOおよびドナー等とのいっそうの連携を進めていく必要がある。ARI部門については、特に疫学関連において、HIV/AIDS部門とのよりいっそうの連携が求められる。ウイルス性肝炎部門については、早急に診断キットの商標登録等を済ませ、有償供給体制を確立する必要がある。安定した生産体制を維持するためにも、動物舎の管理を改善する必要がある（抗体採集用モルモットの死滅が繰り返されているため）。

３－２　今後の方向性

今後の方向性については、協議議事録のANNEX XIをあわせ参照されたい。先方との協議等を通じて合意された、各部門別の方向性としては、以下があげられる。

３－２－１　HIV/AIDS部門

これまでに実施済み・実施中の研究開発事業を通じて得られたデータの解析を完了させ、成果の公表（論文発表等）を急ぐべきである。HIV母子感染およびエイズ発症進行に対するビタミンAをはじめとする微量栄養素補給の役割について、さらに検討すべきである。高度安全実

験施設（Ｐ３ラボラトリー）について、その使用方法細則等を定めるべきである。事故発生時の補償等については、ケニア当局の責任である。HIV確認検査に、蛍光抗体法を導入すべきである（高度安全実験室の供用が開始され、HIVの培養が確立されれば、KEMRI内部での検査用スライド作製が可能となり、コスト削減にもつながるため）。

３－２－２　ARI部門

入院を必要とするような重症例について、より注目すべきである。HIV感染者における呼吸器感染症（カリニ肺炎等）に注目すべきである。既存のHIV/AIDS部門のコホートを活用し、活動を西ケニアにも広げることについて検討すべきである。そのためには、西ケニアにおけるさらなる施設整備（検査機材の供与）および人材育成が必要である。分子生物学的検査技術（核酸増幅検査法：PCR）の応用を、さらに進めるべきである。

３－２－３　ウイルス性肝炎部門

Ｂ型肝炎診断キット（KEMRI HEPCELL Ⅱ）の有償供給を早急に開始すべきである。抗体生産に関して、モノクローナル技術の応用可能性を検討すべきである。Ｃ型肝炎の疫学調査に関し、PCRの応用可能性を検討すべきである。Ｂ型肝炎スクリーニング技術にかかるワークショップを、他州の地区（district）レベルに拡大する可能性を検討すべきである。モルモット用動物舎の運営管理を改善し、衛生および安全性を確保すべきである。

附　属　資　料

協議議事録（M／M）

THE MINUTES OF A MEETING
BETWEEN
THE JAPANESE ADVISORY TEAM
AND
THE AUTHORITIES CONCERNED OF THE REPUBLIC OF KENYA
ON THE JAPANESE TECHNICAL COOPERATION
FOR
THE RESEARCH AND CONTROL OF INFECTIOUS DISEASES
PROJECT, PHASE II

The Japanese Advisory Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Prof. Shunzo CHIBA, visited the Republic of Kenya from 8th March, 1999 to 15th March, 1999, for the purpose of reviewing the achievements and consulting for the future directions concerning the Research and Control of Infectious Diseases Project, Phase II (hereinafter referred to as "the Project").

During its stay in the Republic of Kenya, the Team exchanged opinions and had series of discussions with Kenyan authorities concerning the activities and implementation of the Project.

The Joint Coordinating Committee Meeting of the Project was held between representatives of the Governments of the Republic of Kenya and Japan at Nairobi on the 11th March, 1999.

As a result of the meeting, both sides agreed to recommend to their respective Governments the matters contained in the document attached hereto.

Nairobi, 12th March, 1999

Prof. Shunzo CHIBA
Leader
Advisory Team
Japan International Cooperation Agency
Japan

Dr. Davy K. KOECH
Director
Kenya Medical Research Institute
The Republic of Kenya

Mr. Sammy MBOVA, CBS
Permanent Secretary
Ministry of Research & Technology
The Republic of Kenya

Mr. Philemon MWAISAKA
Permanent Secretary
Ministry of Health
The Republic of Kenya

Miss Margaret R. CHEMENGICH
Permanent Secretary
The Treasury
The Republic of Kenya

ATTACHED DOCUMENT

I. ATTENDANTS OF THE JOINT COORDINATING COMMITTEE MEETING

1. KENYAN SIDE

Dr. Davy KOECH	Director, KEMRI/Project Director (Chairman)
Ms. Jane CHOKAA	Representing Permanent Secretary, Ministry of Research and Technology
Mr. Johnstone NYANUMBA	Representing Permanent Secretary, Ministry of Finance
Mr. John MUYA	Representing Permanent Secretary, Ministry of Health
Dr. Peter TUKEI	KEMRI/JICA Project Coordinator/ HIV/AIDS Coordinator
Mr. Dunstan NGUMO	Deputy Director (Administration and Finance), Project Administrator, KEMRI
Dr. Kevin WASUNNA	Ag. Deputy Director (Research and Development), Joint Project Administrator, KEMRI
Dr. Jeremiah CHAKAYA	Acute Respiratory Infections (ARI)Coordinator, KEMRI
Dr. Frederick OKOTH	Viral Hepatitis (VH) Coordinator, KEMRI
Dr. Nick ADUNGO	Director, Centre for Leprosy and Skin Diseases Research, KEMRI

2. JAPANESE SIDE

a) Advisory Team

Prof. Shunzo CHIBA	Professor, Department of Paediatrics, School of Medicine, Sapporo Medical University
Prof. Takashi KURIMURA	Professor Emeritus, School of Medicine, Osaka University
Prof. Shigeru KAMIYA	Professor, Department of Microbiology, School of Medicine, Kyorin University
Mr. Ikuo TAKIZAWA	Staff, Second Medical Cooperation Division, Medical Cooperation Department, JICA

b) JICA Kenya Office

Mr. Atsushi MATSUMOTO	Deputy Resident Representative
Mr. Willie NYAMBATI	Health Programme Officer

c) Japanese Experts

Dr. Yoshihide FUJIYAMA	Chief Advisor
Mr. Tetsuya ENDO	Coordinator
Dr. Kazuhiro KAKIMOTO	HIV/AIDS Long-term Expert
Dr. Yasuo SUGIURA	ARI Long-term Expert
Dr. Yoshito WADA	Viral Hepatitis Long-term Expert
Dr. Seiji KAGEYAMA	HIV/AIDS Short-term Expert
Dr. Hiroyuki YAMAGUCHI	ARI Short-term Expert

II REVIEW OF THE ACHIEVEMENTS

The Project started on 1st May, 1996 and is planned to continue for five (5) years up to 30th April, 2001. The aim of the Project is to contribute to the improvement of the health status of the people of the Republic of Kenya, through human resource development and the transfer and promotion of appropriate and strategic technologies. It has three (3) components, i.e. HIV/AIDS, Acute Respiratory Infections (ARI) and Viral Hepatitis (VH).

KEMRI has implemented the Project effectively as the principal executing organization, with support from other members of the Joint Coordinating Committee and JICA.

In accordance with the Record of Discussions signed on 29th March, 1996, and the Tentative Schedule of Implementation (TSI) of similar date and revised on 13th August, 1997, the overall achievements of the Project up to the present were noted as follows:-

II-1. INPUTS

II-1-1. Inputs by the Japanese side

(1) Dispatch of Japanese Experts — ANNEX I

(2) Training of Kenyan Counterparts in Japan — ANNEX II

(3) Provision of Equipment — ANNEX III

(4) Support for Local Operation Cost — ANNEX IV

II-1-2. Inputs by the Kenyan side

(1) Designated Kenyan Counterparts for the Project — ANNEX V

(2) Local Operation Cost for the Project — ANNEX VI

(3) Other Inputs — ANNEX VII

II-2 ACTIVITIES AND OUTPUTS

II-2-1 Activities and outputs in the Project up to the present — ANNEX VIII

II-2-2 Scientific Papers from the Project activities — ANNEX IX

III MAJOR CONCERNS

Through the joint collaborative exercise in reviewing the past achievements of the Project, the identified major concerns are as shown in — ANNEX X

IV FUTURE DIRECTIONS

In order to achieve the expected results, the measures to be taken by both parties are as shown in — ANNEX XI

V THE BIOSAFETY (P3) LABORATORY

The status report on the Biosafety (P3) Laboratory is as shown in — ANNEX XII

ANNEX I
LIST OF JAPANESE EXPERTS DISPATCHED

I. SUMMARY TABLE

Fields of Experts	Long-term	Short-term
Chief Advisor	2	0
Project Coordinator	1	0
HIV/AIDS	2	17
ARI	3	5
VH	2	5
Others	0	2
Total	10	29

II. LIST OF EXPERTS

1. CHIEF ADVISOR

Dr. FUMIHIKO KAKUNO	1996/07/08 - 1998/12/12 (L/T)
Dr. YOSHIHIDE FUJIYAMA	1999/03/02 - 2000/03/01 (L/T)

2. PROJECT COORDINATOR

Mr. TETSUYA ENDO	1996/07/03 - 1999/07/02 (L/T)

3. HIV/AIDS

Dr. HIROSHI ICHIMURA	1996/06/26 - 1996/09/25 (S/T)
	1997/03/20 - 1997/04/12 (S/T)
	1998/01/21 - 1998/03/07 (S/T)
Prof. TAKASHI KURIMURA	1996/07/09 - 1996/07/18 (S/T)
	1996/11/08 - 1996/11/16 (S/T)
Mr. NAOHITO SAKAGAMI	1996/07/10 - 1997/07/09 (L/T)
Prof. JIRO IMANISHI	1996/08/05 - 1996/08/15 (S/T)
Prof. KIMIYASU SHIRAKI	1996/09/14 - 1996/09/30 (S/T)
	1997/06/09 - 1997/07/06 (S/T)
Dr. SEIJI KAGEYAMA	1996/09/18 - 1996/11/30 (S/T)
	1997/06/07 - 1997/08/11 (S/T)
	1999/03/01 - 1999/05/01 (S/T)
Dr. KAZUHIRO KAKIMOTO	1996/11/03 - 1996/12/07 (S/T)
	1997/05/07 - 1999/05/06 (L/T)
Dr. MASAHIKO KUROKAWA	1997/09/28 - 1997/12/13 (S/T)
	1998/06/03 - 1998/08/14 (S/T)
Prof. YOSHIYA ANDO	1997/11/14 - 1997/12/01 (S/T)
	1999/02/20 - 1999/03/08 (S/T)
Ms. TOHKO IIDA	1998/01/28 - 1998/03/07 (S/T)

4. ACUTE RESPIRATORY INFECTIONS

Dr. HARUHIKO TAGUCHI	1996/08/21 - 1996/09/27 (S/T)
	1997/03/26 - 1998/03/25 (L/T)
	1998/10/20 - 1998/12/02 (S/T)
Dr. YASUHIKO KAMIYA	1996/10/02 - 1998/11/05 (L/T)
Dr. HIROYUKI TSUTSUMI	1998/02/01 - 1998/03/10 (S/T)
Dr. HIROYUKI YAMAGUCHI	1998/02/15 - 1998/03/14 (S/T)
	1999/02/16 - 1999/03/16 (S/T)
Dr. YASUO SUGIURA	1998/09/18 - 2000/09/17 (L/T)

5. Viral Hepatitis

Mr. TAKESHI FUJIYASU	1996/08/21 - 1996/10/04 (S/T)
Dr. JUN TAGUCHI	1996/08/29 - 1998/08/28 (L/T)
Dr. MICHITAMI YANO	1997/02/07 - 1997/02/18 (S/T)
Prof. MASAMICHI KOJIRO	1997/08/10 - 1997/08/27 (S/T)
Mr. TAKESHI NARUSE	1998/01/24 - 1998/02/11 (S/T)
Mr. TATSUYA FUJINO	1998/01/28 - 1998/03/13 (S/T)
Dr. YOSHITO WADA	1998/08/01 - 1999/07/31 (L/T)

6. Others

Mr. KAZUHIRO AJIKI	1996/11/23 - 1996/12/28 (S/T)	EQUIPMENT MAINTENANCE
Mr. MAKOTO ITO	1998/01/24 - 1998/02/04 (S/T)	EQUIPMENT INSTALLATION

Notes;
(1) L/T denotes Long-term (more than one year) and S/T denotes Short-term.
(2) Dates indicate those of departure from and arrival at Japan.

ANNEX II
LIST OF COUNTERPARTS TRAINED IN JAPAN

I. SUMMARY TABLE

Fields of Training	
HIV/AIDS	9
ARI	3
VH	2
Total	14

II. LIST OF COUNTERPARTS

1. HIV/AIDS

		Current Post
Dr. BALDIP K.M.A. KHAN	1996/06/16 - 1996/08/10	(left service)
Dr. WINFRED M. KOFI-TSEKPO	1996/11/17 - 1996/12/12	Chief Research Officer, CTMDR
Mr. JAMES KANYARA	1997/03/06 - 1997/05/24	Senior Research Officer, CVR
Mr. ELIJHA M. SONGOK	1997/05/12 - 1997/12/10	Assistannt Research Officer, CVR
Ms. ANNE W. MWANGI	1997/10/01 - 1997/12/21	Laboratory Technologist III, CBRD
Ms. FREDA A. OLUBAKAYA	1997/11/17 - 1998/02/14	Research Officer, CLSDR
Ms. CATHERINE W. MUTURA	1998/02/09 - 1998/08/22	Senior Laboratory Technologist, CVR
Mr. FESTUS M. TOLO	1998/11/24 - 1999/02/28	Laboratory Technologist I, CTMDR
Mr. MICHAEL KIBET KIPTOO	1999/01/04 - 1999/06/13	Assistant Research Officer, CVR

2. ARI

Dr. JEREMIAH C. MUHWA	1996/10/01 - 1997/03/09	Senior Research Officer, CRDR
Ms. CHRISTINE B. CHEMUTAI	1998/01/11 - 1998/05/24	Assistant Research Officer, CMR
Dr. EVANS I. AMUKOYE	1999/03/23 - 1999/08/21	Research Officer, CRDR (planned)

3. VH

Mr. EDWARD MATHENGE	1997/02/27 - 1997/09/05	Assistant Research Officer, CVR
Mr. SAMUEL R. MUCHIRI	1998/08/23 - 1998/12/19	Laboratory Technologist I, CVR

Key to abbreviations of the names of Centres;
CCR: Centre for Clinical Research
CTMDR: Centre for Traditional Medicine and Drugs Research
CVR: Centre for Virus Research
CBRD: Centre for Biotechnology Research and Development
CLSDR: Centre for Leprosy and other Skin Diseases Research
CRDR: Centre for Respiratory Diseases Research
CMR: Centre for Microbiology Research
CPHR: Centre for Public Health Research
CVBCR: Centre for Vector Biology and Control Research

Notes:
(1) JFY denotes Japanese Fiscal Year, which begins in April and ends in March.
(2) Dates indicate those of arrival at and departure from Japan.

ANNEX III
LIST OF EQUIPMENT PROVIDED BY JAPAN

I. SUMMARY TABLE

Unit: Japanese Yen

Fund Categories	JFY96	JFY97	JFY98	Total
General Fund	84,730,000	78,191,000	40,138,000	203,059,000
HIV/AIDS Special Fund	29,104,000	34,838,000	19,937,000	83,879,000
Expert Support Fund	14,168,000	17,312,000	*** 4,141,000	35,621,000
Total	128,002,000	130,341,000	64,216,000	322,559,000

* JFY denotes Japanese Fiscal Year, which begins in April and ends in March.
** Figures are based on approved budget.
*** Figure is provisional as of end of February, 1999.
**** JPY 1.00 = Ksh. 0.50

II. LIST OF MAJOR EQUIPMENT

1. HIV/AIDS EQUIPMENT

JFY	EQUIPMENT ITEMS	QTY	UNIT	AMOUNT
96	FACS Calibur System/Becton Dickinson	1	USD	76,800
96	Patient Monitor M1205A	1	USD	12,469
96	Incubator/Dragger 8000NC	1	USD	10,923
96	Antepartum Fetal Monitor/50A M1351A	1	USD	9,706
96	Delivery Bed/Nesbit Evance 3500	1	USD	5,606
96	Photo-Therapy/Dragger 4000	1	USD	3,735
96	Surgical Light MTA Centrion/CT38 21544	1	USD	3,448
96	Suction Unit/Eschmann VP45YL 82-330-04	1	USD	2,114
96	Xerox 5334/11 Copier/accessories	2	UK£	11,318
96	4WD Vehicle/Isuzu Trooper UBS17 VOS 432B	2	Kshs	5,721,848
96	Computer/Film Scanner Mac 7600/132/1.2/8X	1	Kshs	1,118,200
96	Refrigerator, MDF-192AT	1	Kshs	321,360
96	Computer/IBM 100 8MB Ram 850MB/CD-ROM	1	Kshs	149,000
96	Motorcycle/Yamaha RX100cc	1	Kshs	134,344
96	Generator/Yamaha EM45008	1	Kshs	123,228
96	Generator/Yamaha GG180	1	Kshs	73,440
96	Refrigerator/Sanyo 11.8 cft	1	Kshs	47,500
96	Vortex Mixer/Thermilyne Maxi-Mix	1	Kshs	42,769
96	HP Laserjet 5L Printer	1	Kshs	42,000
96	Pipette 8-channel digital 50-250ul	1	Kshs	42,000
96	Pipette 8-channel digital 5-50ul	1	Kshs	42,000
96	Fax Machgine/Panasonic KX-F700BX	2	Kshs	70,000
96	Pipette 12-channel digital 50-250ul	1	Kshs	35,000
96	DNA Sequencer ABI Prism 310 Genetic Analyzer	1	¥	10,224,000
96	Thermal Cycler GeneAmp PCR System 9600	1	¥	2,001,000
96	Safety Cabinet SCV-1304EC2B	1	¥	1,510,000
96	Spectrophotometer UV-1601	1	¥	1,270,000
96	Ultra Low Temp Freezer MDF-392	1	¥	1,126,000
96	Low Speed Centrifuge RL101	1	¥	877,000

96	Air Bath Shaker BR-30LF	1	¥	733,000
96	Centrifuge MX-160	1	¥	671,000
96	PCR Thermal Cycler TR2000	2	¥	1,240,000
96	Milli-Q labo	1	¥	512,000
96	Water Bath BW200	1	¥	350,000
96	Refrigerator w/Freezer MPR-411FR	1	¥	319,000
96	Freezer MDF-U536	1	¥	269,000
96	Computer/Powerbook 5300CS/10016M HD500	1	¥	234,000
96	Pelistatic Pump RP-2000/transformer	1	¥	154,000
96	Incubator MIR-162	1	¥	147,000
96	Trans Illuminator TDM-15	1	¥	140,000
96	Multichannel Lab Pack 4510-040 5-50ml	1	¥	135,570
96	UV Trans-Illuminator TDM-15	1	¥	134,000
96	Desktop Clipper THCF-3	1	¥	122,000
96	Multichannel Lab Pack 4510-020 5-50ml	1	¥	121,550
96	CRT Camera EL-0108-50 M-085 AUTO(M)	1	¥	110,000
96	Angle Rotor for Centrifuge TMP-21	1	¥	107,000
96	Compact Electrophoresis Kit 'MUPD-2'	1	¥	41,000
97	High Performance Liquid Chromatograph	1	USD	68,223
97	Tablet Machine, Cadmach SSF3, Single Stroke	1	USD	3,600
97	Waring Blender, 4 Ltre	1	UK£	2,225
97	Vacuum Pump, PY850-75	1	UK£	1,584
97	Sieve Shaker Octagonal 2000	1	UK£	1,382
97	UPS, 8KVA Long-run	1	Kshs	599,375
97	UPS, 5KVA Long-run	1	Kshs	499,625
97	Computer/IBM PC300GL	1	Kshs	145,000
97	Computer/IBM PC300GL	3	Kshs	435,000
97	Printer/LJ HP6	1	Kshs	38,000
97	Casting Mould Model 140 for Vaginal Ovals	1	DM	1,480
97	UV Sample Photograph Apparatus	1	¥	2,303,000
97	Microcell Counter/F-11	1	¥	1,100,000
97	Microcell Counter/F-520 AC240V 50Hz/Toa	1	¥	890,000
97	Stabilizer, 240V/100V	1	¥	360,000
97	Hemoglobin Analyzer/AD-270	1	¥	240,000
97	Autodiluter/AD-270/Toa	1	¥	230,000
97	Ultrasonic Cleaner UT-105 w/transformer	1	¥	115,110
98	Quantiplex bDNA Virus Load Assy	1	USD	49,500
98	Elisa Reader Multiscan, Labsystem	1	USD	7,600
98	Elisa Well Wash Ascent, Labsystem	1	USD	7,400
98	Voltex Mixer, Thermolyne	1	USD	1,200
98	Magnetic Stirrer, Thermolyne	1	USD	1,100
98	IBM Computer PC300 GL, 233MHZ PII	1	Kshs	120,200
98	Mini PII PS Machine	1	Kshs	90,241
98	HP Laserjet 6L Printer	1	Kshs	32,000
98	Microscope 22-5048-01	1	¥	115,000

2. ARI EQUIPMENT

JFY	EQUIPMENT ITEMS	QTY	UNIT	AMOUNT
96	Radiographic/GE,Mobile VMX	1	USD	36,500
96	Automatic Film Precessor	2	USD	13,200
96	Manual Film Processor Tank	1	USD	2,196
96	Child Restrainer	1	USD	626
96	Refrigerator, Sanyo 11.8 cf	1	Kshs	47,500
96	Broncoscope/Olympus/Camera,Monitor,B Model,L Tester	1	¥	4,210,440

96	Computer/Powerbook 5300CS/100	1	¥	330,000
96	Raildar Absorber	1	¥	153,000
97	Chiron M348 pH Blood Gas, Electrolytic Analyzer	1	USD	34,850
97	Chiron Blood Gas nalyzer/238	1	USD	19,000
97	CO2 Incubator, 108 Ltr, +5→+45	1	USD	14,524
97	Millipore, Milli-RO 60	1	USD	11,195
97	Autoclave/Portaclave w/microprocessor controller	1	USD	9,408
97	Microbiological Safety Cabinet, BHA-36M	1	USD	7,544
97	Inverted Microscpe, Leica DM	1	USD	7,000
97	Ice Flake Maker, Scotsman AF10-AS	1	USD	6,217
97	Sartorious Analytical Balance, BPS210S	1	USD	4,428
97	Medical Refrigerator MDF-293	1	USD	4,425
97	Medical Refrigerator MDF-293	1	USD	4,425
97	Shaking Water Bath, Grant OLS200	1	USD	3,318
97	Binocular Microscope, Leica ATC2000	1	USD	2,510
97	Incubator, Memmert, BE500/108 Ltrs	1	USD	2,447
97	Microcentrifuge, w/rotor 220	1	USD	1,794
97	Microcentrifuge w/rotor	1	USD	1,750
97	Medical Refrigerator MDF-235	1	USD	1,075
97	pH/mV Meter, PHI310	1	USD	1,020
97	Medical Refrigerator MDF-161D	1	USD	1,000
97	Pipetting Controller, Bibbyjet	1	USD	717
97	Bronchoscope BF-3C30	1	¥	1,485,000
97	Thermal Cycler 2400 w/start-up kit	1	¥	840,000

3. VH EQUIPMENT

IFY	EQUIPMENT ITEMS	QTY	UNIT	AMOUNT
96	Thermal Cycler GeneAmp PCR System 9600	1	¥	2,001,000
96	Microplate Reader Spectra 1	1	¥	1,064,000
96	Refrigerated Centrifuge MX-160	1	¥	1,030,000
96	Microplate Washer Columbus 2	1	¥	877,000
96	Bench Top Type Mini Clean Room Genesphere UV100	1	¥	843,000
96	Instant Camera System PB-0012-04 MP-4	1	¥	383,000
96	Computer/PC350 6587-JU4	1	¥	233,600
96	Trans Illuminator Type SN-2103-12 FVI-20M	1	¥	220,000
96	Aluminium Block Bath Dry Thermo Unit DTU-2B	1	¥	178,000
96	Incubate Box M-055	1	¥	168,000
96	Constant Power Supply Type 3115	1	¥	152,000
96	Hand Clipper THCF-2	1	¥	134,640
96	Flat Agarose Gel Electrophoresis Apparatus EPM-8420	2	¥	144,000
97	Ultracentrifuge, Optima L-70K, Beckman	1	USD	53,920
97	Microplate Photometer, Multiscan	1	USD	8,500
97	Microplate Washer, Well Wash-4	1	USD	4,500
97	Wellwarm Shaker/Incubator	1	USD	2,200
97	Ms Office Software	1	Kshs	60,000
97	Printer/LJ HP6	3	Kshs	114,000
97	Vacuum Infiltration Tissue Processor	1	¥	4,370,000
97	Autostainer XL	1	¥	3,130,000
97	UV Sample Photo Aparatus FAS-II,100V/50Hz	1	¥	2,303,000
97	Roraty Microtom HM340/E	1	¥	2,156,500
97	Tissue Embedding Console System/Model TEC-IV	1	¥	1,617,000
97	Automatic Water Distiller,ASK-2DS	1	¥	464,000
97	Computer/Powerbook 1400 C S/133 w/Memory/MOD	1	¥	417,000
97	Incubator IF-151	1	¥	290,000

97	Fume Hood w/outer transformer	1	¥	224,400
97	Paraffin Slide Warmer w/outer transformer	1	¥	182,000
97	Software/SPSS V7.5J	1	¥	143,000
97	Hand-Clipper/Hand-Operated/13mm	2	¥	240,000
97	Hand-Clipper/Hand-Operated/20mm	1	¥	120,000
97	Zonal Rotor Septer	1	¥	96,000
98	Leica ATC2000 Compound Microscope	1	USD	23,000.00
98	Belly Dancer, Orbital Shaker	1	USD	2,130.46
98	IBM Pentium Computer/HP 890C Deskjet Printer	1	Kshs	310,110

4. COMMON USE EQUIPMENT

JFY	EQUIPMENT ITEMS	QTY	UNIT	AMOUNT
96	Minibus/Nissan Urban E24/Petrol	1	Kshs	1,312,000
96	Whiteboard/Copy function	1	¥	118,000
96	MO Drive	1	¥	81,000
96	Color Jet Printer/MJ910C	1	¥	76,000
97	Computer/Mac, D/Top w/printer	1	USD	5,305
97	Nissan Mini-Bus, 9 seater	1	Kshs	1,350,000
97	Mitsubishi Lancer Station Wagon	1	Kshs	996,000
97	Computer/IBM PC300GL	1	Kshs	145,000
97	UPS, 2.2KVA	1	Kshs	112,664
97	UPS, 2.2KVA	3	Kshs	337,989
97	Ms Office Software	1	Kshs	60,000
97	Fax Machine, Panasonic Digital	1	Kshs	52,065
97	Mobile Telephone, Ericson EF738	1	Kshs	46,800
97	Computer/Power Mac 4400/200 w/L Printer/D play	1	¥	350,000
98	Isuzu Trooper UBS 25 VOS 520B	1	Kshs	1,562,000
98	Mitsubishi Lancer Station Wagon	1	Kshs	992,000

ANNEX IV

SUPPORT FOR LOCAL OPERATION COSTS BY JAPAN

I. SUMMARY TABLE

Unit: Kenya Shilling

Fund Categories	JFY96	JFY97	JFY98	Total
Research Operational Fund* (*Keimo Fukyu*)	3,005,000.00	3,021,000.00	2,673,000.00	8,699,000.00
HIV/AIDS Special Fund* (*Jisshi Keikaku, HIV/AIDS*)	4,111,000.00	3,969,000.00	4,759,000.00	12,839,000.00
Technical Exchange Fund (*Gijutsu Kokan*)	681,000.00	756,000.00	684,000.00	2,121,000.00
Workshop Fund (*Chukan Gijutsusha*)	812,000.00	1,329,000.00	1,060,000.00	3,201,000.00
IEC Special Fund (*Jisshi Keikaku, Shichokaku*)	0.00	0.00	884,000.00	884,000.00
Equipment Maintenance Fund (*Kizai Hoshu*)	0.00	612,000.00	603,000.00	1,215,000.00
General Support Fund (*Ippan*)	3,300,000.00	3,525,000.00	3,176,000.00	10,001,000.00
Total	11,909,000.00	13,212,000.00	13,839,000.00	38,960,000.00

* These funds are regarded as *direct* support funds for research operation.
** JFY denotes Japanese Fiscal Year, which begins in April and ends in March.
*** Ksh. 1.00 = JPY 2.00

II. ALLOCATION OF *DIRECT* RESEARCH OPERATION SUPPORT FUNDS AMONG PROGRAMMES

Unit: Percent (%)

Programmes	JFY96	JFY97	JFY98	Total
HIV/AIDS	89%	69%	73%	78%
ARI	5%	17%	14%	12%
VH	5%	13%	13%	10%
Total	100%	100%	100%	100%

ANNEX V

DESIGNATED COUNTERPARTS FOR THE PROJECT

ADMINISTRATION:

1. Dr. M.S. Abdullah	Chairman	KEMRI
2. Dr. Davy K Koech	Director	KEMRI
3. Dr. Peter M Tukei	Project Co-ordinator	KEMRI
4. Mr. D.M.Ngumo	Deputy Director [A&F]	KEMRI
5. Dr. P.A. Orege	Deputy Director [R&D]	KEMRI
6. Mr. J.N. Kariuki	Sen. Prin. Admin. Officer	KEMRI
7. Mr. G.A.O. Seko	Prin. Admin. Officer	KEMRI
8. Mr. B. Mureithi	Supplies Officer	KEMRI
9. Mr. J. Lelei	Institute Engineer	KEMRI
10. Mr. K Mutegi	Technologist [Electronics]	KEMRI
11. Mr. P. Mwangi	Technologist [mechanical]	KEMRI

HIV/AIDS:

1. Dr. Peter M Tukei	Co-ordinator
2. Dr. A.J. Oloo	Dir. CVBCR Kisumu
3. Dr. N.I. Adungo	Dir. CLSDR Alupe
4. Dr. W.M.Kofi Tsekpo	CRO
5. Dr. S. Mpoke	CBRD
6. Mr. E.M. Songok	CVR
7. Mr. S. Makhoka	Ph.D KU
8. Mr. W. Njoroge	CVR
9. Mr. I.O. Genga	CVBCR
10. Mr. R.N. Lihana	CVR
11. Ms. C. Mutura	CVR
12. Ms. A. Mwangi	CBRD
13. Ms. M. Kinyanjui	CBRD
14. Ms. F. O. Olubakaya	CLSDR
15. Ms. F.Kibaya	CTMDR
16. Mr. F.M. Tolo	CTMDR
17. Mr. J.N.Nganga	CVR
18. Mr. J. Muli	CVR
19. Mr. M. Nthiwa	MRC
20. Mr. D. Wahinya	CBRD
21. Ms. J. Oketch	CVBCR
22. Mr. M. Kiptoo	CVR
23. Mrs. J.Matara	CVBCR
24. Mr. S.O.Odijo	CVBCR
25. Mr. J. Opondo	CVBCR
26. Mr. F. Denga	CVBCR
27. Mr. J. Okech	CVBCR
28. Mr. C. Okello	CVBCR
29. Mr. M. Obura	CBVCR

30. Ms. J. Aloo	CVBCR
31. Ms. J. Osandho	CVBCR
32. Mr. V. Osidiana	CLSDR

ACUTE RESPIRATORY INFECTIONS [ARI]:

1. Dr. J.M. Chakaya	Co-ordinator, CRDR
2. Dr. J. Odiambo	Director CRDR
3. Dr. Y. Kombe	CPHR
4. Dr. W. Ochieng	CVR
5. Dr. E. Amukoye	CRDR
6. Dr. D. Mwaniki	CPHR
7. Mr. B.A.Obanda	CMR
8. Mr. J.M. Magana	CVR
9. Mr. J. Simwa	CVR
10. Mr. F. Mbugua	CVR
11. Ms. C. B. Chemutai	CMR
12. Mr. M. Karama	CPHR
13. Mr. C.M. Gicheha	CRDR
14. Mr. T.T. Ouko	CMR
15. Mr. M. Mathu	CPHR
16. Mr. S. Ijaaka	CPHR
17. Mr. F. Njenga	CPHR
18. Mr. J. Wachira	CVR
19. Ms. M. Wambui	CRDR
20. Ms. L. Muita	CRDR
21. Ms. J. Chege	CVR
22. Dr. L. Nganga	CPHR
23 Dr. J. Gitau	CCR

VIRAL HEPATITIS:

1. Dr. F.A. Okoth	Co-ordinator, CVR
2. Mr. E.G. Mathenge	CVR
3. Mr. J.K. Tuei	CVR
4. Mr. P.M. Kaiguri	CVR
5. Mr. S. Muchiri	CVR
6. Mr. G. Kamau	CVR
7. Mr. N. Owino	CVR
8. Mr. J. Kulundu	CVR
9. Mrs. A. Njuguna	CVR
10. Dr. K. Mutuma	CCR
11. Mr. T. Kuria	CCR
12. Mr. A. Kasomo	CCR
13. Mr. E. Ireri	CCR
14. Dr. J. Gitau	CCR

ANNEX VI

KEMRI/JICA PROJECT : LOCAL OPERATION COSTS FOR THE PERIODS JULY 1997 TO DECEMBER 1997 AND JANUARY 1998 TO DECEMBER 1998

CENTRE	PERIOD		TOTAL KSHS
	JULY - 97 DECEMBER 97 KSHS	JANUARY 98 - DECEMBER 98 KSHS	
KEMRI HQS	1,036,247.50	1,719,866.05	2,755,113.55
CPHR	48,875.00	82,475.00	131,350.00
CCR	33,175.00	40,535.00	73,710.00
CRDR	-	5,120.00	5,120.00
CVR	11,807.50	310,631.90	322,439.40
CVBCR	115,735.50	321,169.70	436,905.20
CLSDR	303,755.70	861,173.75	1,164,929.45
CBRD	9,650.00	27,570.00	37,220.00
CMR	15,874.10	31,354.00	47,228.10
CTMDR	9,625.00	9,625.00	19,250.00
TOTAL	**1,584,745.30**	**3,409,520.40**	**4,994,265.70**

ANNEX VII
OTHER INPUTS

1. KEMRI pays the salaries of and allowances including housing for all the staff listed in ANNEX V.
2. KEMRI is responsible for the running and maintenance costs of the Institute. These costs include: Water, Electricity,Telephones, Security, Land and Conservancy etc etc.

ANNEX VIII

PROJECT ACTIVITIES

The Record of Discussions on the KEMRI-JICA Project for Research and Control of Infectious Diseases (II), was signed on 29th March, 1996. The Project is now 3 years old. The project is scheduled to run from 1st May, 1996 to 30th April, 2001. There are three principal areas being addressed as follows:-

1. HIV/AIDS
2. ACUTE RESPIRATORY INFECTIONS [ARI]
3. VIRAL HEPATITIS [VH]

I. OBJECTIVE:

The overall objective is to improve the health status of Kenyans through research using strategies of human resource development and transfer and promotion of appropriate and strategic technologies.

II. PROGRESS

The project has been implemented closely following the Tentative Schedule of Implementation officially adapted on the 29th March, 1996 and revised on the 13th August, 1997.

KEMRI and JICA authorities concerned have closely supervised and monitored the progress of the project activities commendably using the indicators proposed in the Master Plan.

The project was first jointly reviewed on 13th August, 1997 . This review gave the project a clean bill of health. During that review, a number of important decisions were made such as:

1. Suspension of the Nairobi cohort
2. Plans were approved for the project to seek funding for the establishment of a Bio-Safety Laboratory to include a P3 level Bio-Containment facility.
3. The use of AZT and formula feeding for HIV positive pregnant mothers was encouraged within the Busia and Kisumu cohorts.
4. The re-location of the JICA -KEMRI offices to a roomier accommodation within the KEMRI/HQ complex .
5. The need for KEMRI to increase its budget for local running costs.
6. The need for KEMRI to programme the budget for major equipment maintenance contracts.

III. ACHIEVEMENTS:

It is gratifying to note that all the decisions listed above, have been fully implemented. The Project objectives have been met as follows:-

III-1 HUMAN RESOURCE DEVELOPMENT

The project has, through several approaches, been able to develop a critical mass of human resources to implement the activities within the project.

This has enabled the project to transfer essential and strategic technologies to KEMRI. This has been accomplished through:

1. Direct Counterpart training in Japan
   14 scientists have received training in Japan [see ANNEX II]

2. Dispatch of Experts to KEMRI
   10 long term and 29 short term experts have been dispatched [see ANNEX I]. The majority of the short term experts have special assignments for on the job training of KEMRI scientists and technologists.

3. Financial support for research expenses.

4. Timely provision of equipment and research materials [ANNEX III]

III-2 PROMOTION OF APPROPRIATE AND STRATEGIC TECHNOLOGIES

The essential strategic technologies now in use in KEMRI are detailed in the sections below:

A. HIV/AIDS:

1. HIV/AIDS DIAGNOSTIC KIT- [PA- KIT]

The objective is to produce an appropriate,simple, rapid and sustainable screening kit.

The kit has been produced through a process of technology transfer in collaboration with Fujirebio company of Japan.

Commendable progress has been made in the development of this kit.
The kit has been freeze dried to increase its shelf life and simplify distribution and storage. The kit has and continues to receive field evaluations and the results are very satisfactory.The capacity for production now stands at 5,000 tests per batch per month. This can be stepped up if necessary.

The PA team members have received relevant training for the use of the P3 facility for production of the HIV antigens locally.

2. MOLECULAR EPIDEMIOLOGY:

The objective here is to define the characteristics of HIV circulating in Kenya - genetically, serologically, biologically and pathologically [virulence] etc. The sub-type A predominates accounting for 80% of 95 so far subtyped. The D , C and G subtypes account for 7%, 9% and 1% respectively.

Technologies for molecular and serological characterization of HIV have been introduced. They include PCR, sequencing, peptide ELISA, and hetero-duplex mobility assays[HMA].

Biological characterizations will be initiated as soon as the P3 facility is in full use.

3. SCREENING OF PLANT EXTRACTS:

The objective is to look for compounds that are active against viruses. Plant extracts are being evaluated for anti-viral activity in vitro using herpes simplex virus . Preliminary reverse transcriptase [RT] enzyme inhibition assays are promising. These achievements are reflected in the number of manuscripts which have been prepared for scientific presentation.

4. VERTICAL TRANSMISSION [VT]:
The objective is to delineate risk factors for VT and to assess various interventions.

Good progress has been maintained. The short-course administration of AZT in HIV positive pregnant mothers in the OLD cohorts has significantly reduced the rate of VT by 65% . This has been submitted to East African Medical Journal.

Other technologies which have been successfully introduced in this area include PCR, viral load and IgM assays.

a. COHORT STUDIES:
The project is currently following 2 cohorts of pregnant mothers in Busia and Kisumu. At each site, there are 2 cohorts, one old and one newly recruited from June - November 1998 as per the table below:

	Old	% +ve HIV	New	%+ve HIV	
Busia	220	23	213	24	433
Kisumu	208	34	183	32	391
Total	428	29	396	28	824

An average of 28-29% HIV positive pregnant mothers constitutes a very grave public health concern. This information has been availed to the MOH through NASCOP Secretariat [The National AIDS Programme].

The details of the New cohort are as follows:

New Cohort: Health Centre/HIV status

H/centre	Positive	Negative	Totals	% pos.
Usigu	18	36	54	33
Matayos	08	48	56	14
Khunyangu	06	50	56	10
Siaya	19	28	47	40
Kombewa	24	56	80	30
Nyahera	21	39	60	35
Chulaimbo	13	30	43	30
Total	109	287	396	28

b. IMMUNOLOGY:
The objective is to assess the immune parameters of HIV positive individuals and follow their development as the disease progresses.

The FACSCAN Computer backed equipment has greatly facilitated the monitoring of the immunological parameters of the pregnant mothers in our cohorts. Flow cytometric measurements of absolute numbers of CD4, CD8 and CD3 are carried out.

Cytokine evaluations have been initiated.

B. ACUTE RESPIRATORY INFECTIONS [ARI]:

The overall objective of the KEMRI-JICA ARI research programme is to develop basic capabilities and capacities for the prevention, control and management of ARI through multidisciplinary investigation. There are three parts to this programme:-

1 Clinical Part: An ARI clinic was established at the Mbagathi District Hospital, Nairobi in February 1997. By the end of November, 1998, 451 patients with ARI had been registered and evaluated using a clinical history, physical examination, chest X-p. From each case nasopharyngeal aspirates, throat swab, and blood specimens were collected in order to detect pathogens of ARI. This data is currently being analyzed in order to relate clinical severity to demographic and radiographic features and also to isolated pathogen.

2 Laboratory Part: Bacteriology and mycology laboratories at Centre for Respiratory Diseases Research (CRDR) are now fully operational and able

to identify pathogens and to assess the drug sensitivity of the pathogens. The virology laboratory at the Centre for Virus Research Annexe is also able to identify viral pathogens. Four hundred fifty one specimens from Mbagathi District Hospital have been analyzed by these three laboratories. *Streptococcus pneumoniae* accounted for 65% of bacterial culture positive cases and was thus the most common bacterial pathogen. In virology lab, RS virus accounted for 8.9% and was the most commonly detected virus by Immunofluorescent assay. Among the fungal isolates in the mycology lab, *Candida albicans* accounted for 72%. Furthermore, drug sensitivity tests showed 85% of *S. pneumoniae* were resistance to penicillin and 29% of *C. albicans* were resistance to Amphotericin B.

3 Epidemiology Part: This component of the study was divided into two parts, namely, baseline survey and ARI prospective study. After mapping out the study area at Kibera in Nairobi, base line demographic and housing survey was carried out between February and June 1997. A total of 2045 households were involved in the baseline demographic and housing survey. The population size was 6642 persons. Analysis of demographic data indicated that children under 5 account for 17.9% of the population. The prospective ARI study among the children under 5 started in July 1997. Seven field workers regularly visit these children and collect information about their health condition, especially ARI. The total number of children included in this study between July 1997 to December 1998 is 1730. Due to the high rate of in and out-migration, the mean number of children contacted per month was 720 +/- 48. The total number of children who were under surveillance throughout the study period of one year (July 1997 to June 1998) were 177 and the ARI incidence was 6.2 +/- 3.6 episodes/ child /year. The majority of the illnesses were mild ARI cases. Risk factors analysis of ARI has been done in this study. There was a statistically significant relationship in the mean duration of ARI between observable animal feaces and unobservable ones within the immediate environment.

The other aspects of the programme are as follows:-

1 Education for ARI: Two educational videos on ARI, one for health care workers (English version) and the other for lay people narrated in Kiswahili (Swahili version) have been produced in collaboration with PEPP (Population Education Promotion Project). These videos together with accompanying booklets will soon be ready for distribution. Potential distribution targets of the English version have been identified as the KMTC (Kenya Medical Training College), University of Nairobi, Paediatrics and Child Health Department, ARI project within the Ministry of Health, and the Provincial and District hospitals in Kenya. The Swahili version could be one of the strongest tools for intervention

of the field study in Kibera to make mothers notice some symptoms of severe pneumonia. It will be also available at many health centers and NGOs (non-governmental organizations) in Kenya.

2 The other ARI study out of Nairobi: To obtain basic information on bacterial profile of potential pathogens of ARI and drug sensitivities of these pathogens at the Coast, a pilot study was carried out in Malindi from 1st November to 20th November, 1998. A total of 100 nasopharyngeal specimens, of which 50 were from the children with ARI and 50 from healthy children, were collected at the Malindi District Hospital and a nearby Nursery school. *S. pneumoniae* was the most common pathogen as in Nairobi. The drug sensitivity tests showed 66.7% of *S. pneumoniae* were resistance to penicillin, which was lower than that of the Nairobi study (85%). The other potential study area is Kisumu in Western Kenya. The laboratory infrastructure is in place to study ARI pathogens in Kisumu. This site is especially important because of the endemicity of malaria in this area. The interaction between malaria and ARI could thus be best studied in Kisumu. Additionally, useful information about the influence of HIV on ARI could be studied by following up children born to the cohort of mothers that is already on follow up by the HIV group.

C. VIRAL HEPATITIS:

Since its inception in 1990 as a component of the KEMRI/JICA Project, the Viral Hepatitis programme has maintained as its primary objectives biomedical research on Viral Hepatitis and related liver disease and the development of appropriate strategies for their prevention and control.

Research has shown that the form of Viral Hepatitis of principal clinical importance in Kenya is the Hepatitis B virus (HBV) and that Hepatocellular Carcinoma (HCC) is the most clinically significant form of liver disease associated with it.

Despite the availability of effective vaccines for HBV and proposals to include vaccination against HBV in the national Expanded Programme on Immunization (EPI), this has not been effected primarily due to the scale of financial commitment required. Therefore, HBV transmission and resulting liver disease specifically HCC were specially targeted in the programme efforts on "Research, Prevention and Control."

The programme has set out to achieve the objectives by addressing the following areas considered of primary importance.

1. To produce a lyophilized KEMRI HEP CELL II and AFP kits.

   1) Improved HBsAg test kit (KEMRI HEP CELL) production:
   In 1996 the kit was modified and improved and a new lyophilized form was developed {freeze dried}. This was named KEMRI HEP CELL II kit. This is currently being distributed to the same centers and hospitals and in addition it will be distributed to district hospitals. A production & quality control manual for KEMRI HEP CELL II was produced.

   2) Production of alpha fetoprotein (AFP) test kit:
   Twenty nine AFP test kits [2,900 tests] for diagnosis of HCC have been produced from 1996 to 1998. It is currently distributed free of charge to the provincial hospital laboratories.

   3) Endorsement of KEMRI HEP CELL II.
   On 22nd July, 1998, KEMRI HEP CELL II was endorsed by the Ministry of Health.

   4) Monitoring:
   Quality assurance [QA] and quality control [QC] of this kit is being monitored at various levels including at production and at provincial laboratories.

   5) KEMRI HEP CELL II Manual.
   A manual for technicians has been produced and distributed.

2. To ensure a safe blood supply countrywide:
From 1996 to 1998, 800 kits of KEMRI HEP CELL II (80,000 tests)were produced and 739 kits (= 73,900 tests) were distributed free of charge to the provincial hospital laboratories. The HBsAg positive rate using this kit in blood donors is 3.5% {1,669/47,645}.

3. To promote widespread use of KEMRI HEP CELL kit in the region.

   1) Workshops:
   Continuous training of laboratory personnel directly involved in the use of the diagnostic kit is carried out through annual workshops and seminars. This training programme has been incorporated in the Viral Hepatitis project and annually data is collected as part of the research and evaluation activities.

   2) The 3rd country training
   With the establishment of quality control and the improvement of shelf life of the kit, the use of the kit is now being promoted outside Kenya. Currently efforts are being made to extend the

availability and use of the technology to other countries in the region. Countries targeted are Tanzania, Ghana, Uganda, Zambia and Malawi.

3) Field work
Twice a year the project has gone around the country training technicians in the use of the KEMRI HEP CELL II and radiographers in the use of ultrasound technique.

4. To study the epidemiology and diagnosis of viral hepatitis and HCC. Monitoring the hepatitis clinical epidemiology among liver disease patients carried out through clinical and laboratory examination of patients and patient samples. This is further promoted by production and distribution of a test kit for AFP.

1) Clinical and Ultrasound diagnosis
These are carried out during weekly liver disease clinics held at the Kenyatta National Hospital as well as at the Centre for Clinical Research of KEMRI. The same are carried out at a national scale during tri-annual visits to all the provincial hospitals. 196 patients were examined by ultrasound. The result was that HCC cases were 60 (HBsAg (+): 37 cases (61.7%)), liver cirrhosis cases were 80 (HBsAg (+): 27cases (33.8%)) and chronic hepatitis cases were 55 (HBsAg (+): 14 cases (25.5%)).

2) Molecular research on viral hepatitis using PCR.
21 samples were examined of which 3 were HBV positive, and only 1 case was viral hepatitis type C (HCV) positive.

3) Workshop
The training of radiographers in the ultrasound technique for improved evaluation of liver disease patients, as well as the training of laboratory personnel using the AFP detection kit is carried out during annual workshops and seminars. These have been incorporated in the Viral Hepatitis Programme's annual data collection, research and evaluation activities.

5. To carry out basic studies on HCC.
1) HCC studies are carried out through laboratory and pathological examination of biopsy tissues. So far 14 clinically selected patients have had liver biopsy taken and their tissues are undergoing pathological evaluation in the histological unit. The result is that HCC was found in 11 cases (age:43.6, M/F:10/1, HBsAg(+):5, HCV(+):0,

histological grade: moderately differentiated type 8, poorly differentiated type 3, structure: trabecular 10, scirrhous 1, fc, sf are unknown and portal areas are not involved), liver cirrhosis is 2, unknown 1.

2) A manual for basic staining and immunostaining methods has been produced.

ANNEX IX

SCIENTIFIC PAPERS

The project attaches great importance to scientific publications. Project scientists are therefore, encouraged to compile their data, analyze it and prepare scientific papers to be read in local or international seminars, conferences or congresses.

The following papers have been produced from work conducted in the project:

I. PAPERS READ IN SEMINARS AND CONFERENCES:

A. NIMR 16TH ANNUAL SCIENTIFIC CONFERENCE INCORPORATING THE 19TH AFRICAN SCIENCES CONGRESS, APRIL 1998, ARUSHA, TANZANIA

HIV/AIDS

1. The HIV strains involves in the AIDS epidemic in Kenya.
2. A study of vertical transmission of HIV infection in Busia and Siaya District in western Kenya,
3. Evaluation of a locally produced particle agglutination (PA) assay kit for the detection of HIV.
4. Sensitivity and specificity of nested PCR primers in detection of HIV-1 in antenatal clinic attendees.
5. Chemical properties of compounds isolated from Kenyan medical plants for study against reverse transcriptase and herpes simplex virus.
6. Antiviral properties of compounds isolated from some Kenyan medical plants I: activity against reverse transcriptase.
7. Antiviral properties compounds isolated from some Kenyan medical plants II: activity against herpes simplex virus
8. TH1/TH2 cytokine profiles in pregnant HIV-1 infected woman in Kenya.

VIRAL HEPATITIS

1. Association between reduced HBV seroprevalence and modified blood donor selection in Kenya

2. HBV, HCV and HGV/GBV-C immunomarker prevalence, molecular epidemiology and co-infection rates among liver disease patients and HIV positive females in Kenya.

ARI

1. Risk factors for severe pneumonia in children under five years from an urban slum.

B THE 12TH WORLD AIDS CONFERENCE: GENEVA, SWITZERLAND, JUNE 1998

HIV/AIDS

1. Comparative analysis of genetic diversity among seropositive populations in Kenya

2. Evaluation of a locally produced particle agglutination assay for detection of antibodies to HIV-1.

C. THE SECOND NATIONAL CONFERENCE ON HIV/AIDS/STDS: NAIROBI, KENYA: OCTOBER 1998

HIV/AIDS

1. CD4/CD8 lymphocyte count in HIV-1 infected pregnant women in Western Kenya.

2. Early diagnosis of HIV-1 in children born to HIV-1 seropositive mothers in Western Kenya.

3. HIV subtypes in Nairobi and Western Kenya: a molecular epidemiology survey.

4. Preliminary findings on evaluation of PCR primers for laboratory diagnosis of HIV-1 in Kenya.

5. Measurement of CD4 lymphocyte counts and viral loads in HIV-infected children in Kenya.

6. Rate of HIV seroconvertion in a cohort of antenantal clinic attendees in Western Kenya.

D. The 47th ANNUAL MEETING OF THE JAPANESE SOCIETY FOR VIROLOGY, KYOTO, JAPAN, SEPTEMBER 1997

HIV/AIDS

1. Molecular epidemiology of HIV-1 in Kenya.

E. 12TH CONFERENCE OF THE AFRICA REGION OF THE INTERNATIONAL UNION AGAINST TUBERCULOSIS AND LUNG DISEASE, NAIROBI, KENYA 16-18 MARCH, 1998

ARI

1. Clinical presentation of acute lower respiratory infection in children from an urban slum presenting in a District Hospital.

2. Mycological investigations of specimens from children acute respiratory infection.

3. Microbial etiology and drug sensitivity of isolate from children with childhood pneumonia.

F. 8TH ANNUAL CONFERENCE OF THE ASSOCIATION OF KENYA LABORATORY SCIENTIFIC OFFICERS, NAKURU, NOVEMBER 1997

ARI

1. Mycoflora of specimen from children with ARI.

G. 9TH ANNUAL CONFERENCE OF THE ASSOCIATION OF KENYA LABORATORY SCIENTIFIC OFFICERS 1998, KIKAMBALA, MOMBASA, 11-13TH NOVEMBER 1998.

ARI

1. Aetiology of acute respiratory infection in children under 5 years.

2. Antifungal drug susceptibility tests of candida isolates from ARI.

3. Multidrug resistant Streptococcus pneumoniae in children with acute respiratory infection in a Nairobi slum area.

4. Emerging multidrug resistant Streptococcus isolate from children with acute respiratory infection in a Nairobi slum area.

H. 20TH AFRICAN HEALTH SCIENCES CONGRESS, ACCRA, GHANA: APRIL 1999 (PAPERS SUBMITTED)

HIV/AIDS

1. Influence of maternal HIV Viral load on vertical transmission in a short course AZT regimen in Kenya.

2. The role of chemokine receptor 5 (CCR5) in HIV infection in high-risk populations in Nairobi.

3. Profiles of intestinal parasites among HIV infected and non-infected mothers in Western Kenya.

4. Antiviral properties of extracts (CTMDR1 and CTMDR2) from medicinal plants in Kenya: Inhibition of protein synthesis in HSV.

5. Bioactive alkaloids of *Albizia gummifera* from Kenyan medicinal plant.

6. Antiviral screening of some extracts from medicinal plants for anti-HSV activity in a cell culture system.

7. Activity-guided isolation of bioactive compounds from the stem bark of a medicinal plant as potential agents against HIV and HSV.

8. Determination of EC50 of anti-HSV reverse transcriptase activity of extracts from some Kenyan medicinal plants.

VIRAL HEPATITIS

1. Comparative evaluation of KEMRI HEP CELL II (HBsAg) kit, and 4 other HBsAg screening assay used to prevent post transfusion transmission of hepatitis B at medical institutions in Kenya.

2. Alpha-feto protein [AFP] detection as a tumour marker in liver disease patients in Kenya.

3. Pancreatic disease and splenomegaly by abdominal ultrasound.

S.C. Doc

ARI

1. Factors influencing the severity of pneumonia in children under five years from an urban slum in Nairobi.
2. Bacterial and fungal pathogens and their antimicrobial susceptibility patterns in children with pneumonia from an urban slum in Nairobi.

II WORKSHOPS

VIRAL HEPATITIS

A. THE 5TH KEMRI/JICA WORKSHOP ON VIRAL HEPATITIS, NAIROBI, FEBRUARY 1997

1. Strategies for the control of viral hepatitis B in Kenya.
2. Viral hepatitis
3. Management of acute hepatitis C.
4. Current trends in HBV sero-prevalence in Kenya.
5. Laboratory diagnosis methods for viral hepatitis.
6. The new KEMRI HEP CELL diagnostic kit.

B. THE 6TH KEMRI/JICA WORKSHOP ON VIRAL HEPATITIS, NAIROBI, MARCH 1998

1. Hepatitis B and liver disease in Kenya
2. Importance of HBV screening
3. HBV epidemiological profiles in Kenya
4. Lectures on KEMRI HEP CELL II and AFP diagnostic kits. Production, use and maintenance.
5. Washing and storage of screening kit accessories

C. THE 7TH KEMRI/JICA WORKSHOP ON VIRAL HEPATITIS, MOMBASA, FEBRUARY 1999

1. The hepatitis B virus

2. KEMRI HEP CELL II a comparative evaluation

3. Lecture on KEMRI HEP CELL II diagnostic kit

4. Washing and storage of screening kit accessories

5. Hepatitis B and liver diseases in Kenya

III JOURNAL PUBLICATIONS

A. PUBLISHED PAPERS

VIRAL HEPATITIS

1. Viral Hepatitis
East African Medical Journal, 73, 308-312, 1996

2. Prevalence of markers for HBV, HCV and HGV and co-infection rates among liver disease patients and HIV positive females
Journal of Nagasaki National Hospital, Clinical Research Institute, 24(1), 25-28,1997.

ARI

1. Current status of acute respiratory infections in children under five years of age in Nairobi, Kenya
Japanese Journal of Infectious Diseases, 72(12), 1289-1294, 1998

B. PAPERS SUBMITTED FOR PUBLICATION

VIRAL HEPATITIS

1. Comparative evaluation of KEMRI HEP CELL II (HBsAg) kit, and 4 other HBsAg screening assay used to prevent post transfusion transmission of hepatitis B at medical institutions in Kenya.
Journal of Gastroenterology and Hepatology.

HIV/AIDS

1. Use of short-course AZT for the prevention of mother to child HIV vertical transmission in rural setting in western Kenya. East African Medical Journal.

C. PAPERS IN PREPARATION

VIRAL HEPATITIS

1. Production of KEMRI HEP CELL II (HBsAg) kit

2. Alpha-feto protein (AFP) detection as a tumour marker in liver disease patients in Kenya

HIV/AIDS

1. Molecular epidemiology of HIV in Kenya: High probability of the involvement of the envelope 2nd N-linked glycosylation site in virulence of HIV-1 in Kenya

ARI

1. Drug susceptibility profiles of isolates from ARI in children under 5 years in Mbagathi, Nairobi, Kenya

2. Streptococcus pneumoniae isolates resistant to WHO recommended first line treatment antibiotics for treating children with acute respiratory infections in a Nairobi slum area

IV MANUALS

VIRAL HEPATITIS

1. KEMRI HEP CELL II (HBsAg) Diagnostic Manual

2. Production & quality control protocols for the KEMRI HEP CELL II kit

3. Ultrasound Diagnosis Manual (Volume 1: Basic Technique & Anatomy, Liver, Portal System & Splean).

ARI

1. Booklets accompanying videos on ARI for Health Care Workers and the general public.

ANNEX X
MAJOR CONCERNS

These are grouped into two categories, viz. the general and specific concerns;

I. General Concerns

(1) Publicity of project activities to the relevant organizations and policy makers as well as to the health and research fraternity, both locally and internationally.
(2) Patenting, production and marketing of products emanating from the project.
(3) Review of policies to facilitate higher degree training towards enhanced human resource development.
(4) Expediting processes for supply and delivery of equipment.
(5) Disposal of obsolete equipment to create more space.
(6) Enhancement of consultancy services towards greater sustainability of project activities.
(7) Continued support for attendance to conferences towards greater research capacity building.

II. Specific Concerns

The specific concerns which also relate to the above general concerns are as follows;

(1) HIV/AIDS

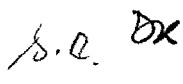
There is need for greater interaction amongst all the players involved in HIV/AIDS prevention and control activities, including the Ministry of Health, the universities, the National AIDS Control Programme, the relevant NGOs and donor agencies, and others in the sharing of information generated from the Project towards strengthening the national HIV/AIDS control capacity.

(2) ARI

There is overwhelming need for greater interaction of ARI and HIV epidemiological activities for mutual enrichment of the two components of the Project.

(3) VH

There is special urgency to patent, produce commercially and market KEMRI HEP CELL II kits. As a prerequisite to this, there is need to upgrade the animal house management.



ANNEX XI
FUTURE DIRECTIONS

These will need to address the general and specific concerns as shown in ANNEX X. The future directions in respect to the specific components of the Project will be as follows;

I. HIV/AIDS

(1) Consolidation of the ongoing programmes and analysis of the currently available data for publication.
(2) Further consideration on the role of dietary supplements, including Vitamin A and other micronutrients, in HIV vertical transmission and disease progression.
(3) Formulation of the necessary rules and regulations governing the Biosafety Laboratory. The Kenyan authorities will in particular be responsible for the Biosafety Laboratory including any risks or liabilities arising therefrom.
(4) Introduction of immunofluorescent assay for HIV status confirmatory testing.

II. ARI

(1) Attention to be paid to severe pneumonia cases needing admission.
(2) ARI in HIV/AIDS including Pneumocystis Carinii Pneumonia (PCP).
(3) Geographical extension of the ARI programme to the Western Kenya using the existing HIV cohorts. To facilitate this, to improve the laboratory and human resource (technologists) capacity.
(4) Increase application of molecular technologies.

III. VH

(1) Embark on the commercial production of the KEMRI HEP CELL II kits.
(2) Explore the monoclonal technology for antibody production.
(3) Explore possibility of the application of PCR for Hepatitis C search.
(4) Explore possibility of expansion of HBV screening workshop to other Districts in other Provinces.
(5) Upgrade animal house management and ensure the necessary hygiene and safety conditions.

ANNEX XII

THE BIOSAFETY LABORATORY

The biosafety laboratory has been established within the existing CVR laboratories. It consists of a P3 level facility supported by a P2 laboratory. The facilities were handed over to project on the 16th February 1999.

The Consultant Architects and the Consortium of Contractors together with JICA and KEMRI co-operated in a magnificent manner to enable the project to be completed a head of schedule. The job was inspected and passed as excellent.

The Contractors trained the KEMRI maintanance engineers during installation and after completion. The engineers were supplied with the relevant manuals and spare parts.The key scientific staff also received basic training on how to operate the major equipment and how to monitor the workings of the equipment .

The Consultants have promised to come back in one year's time to service the filters and perform other necessary checks.

An organizational structure for the management of the facility has been drawn up.

An operational manual has been adapted from the WHO guidelines and from the practical manuals used in Japan and the Royal Tropical Institute in Antwerp Belgium. Training sessions are now planned for the staff who will be operating in the facility.

A forward maintanance budget is now being prepared.

It is clearly understood that it is the responsibility of the Kenyan Government to take care of its worker's risks within this laboratory. The Japanese Government is responsible for the Japanese Experts working within the laboratory.