ケニア国
感染症研究対策プロジェクト(II)
事前調査団報告書

平成8年3月

国際協力事業団
医療協力部

ケニア国
感染症研究対策プロジェクト（Ⅱ）
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序　文

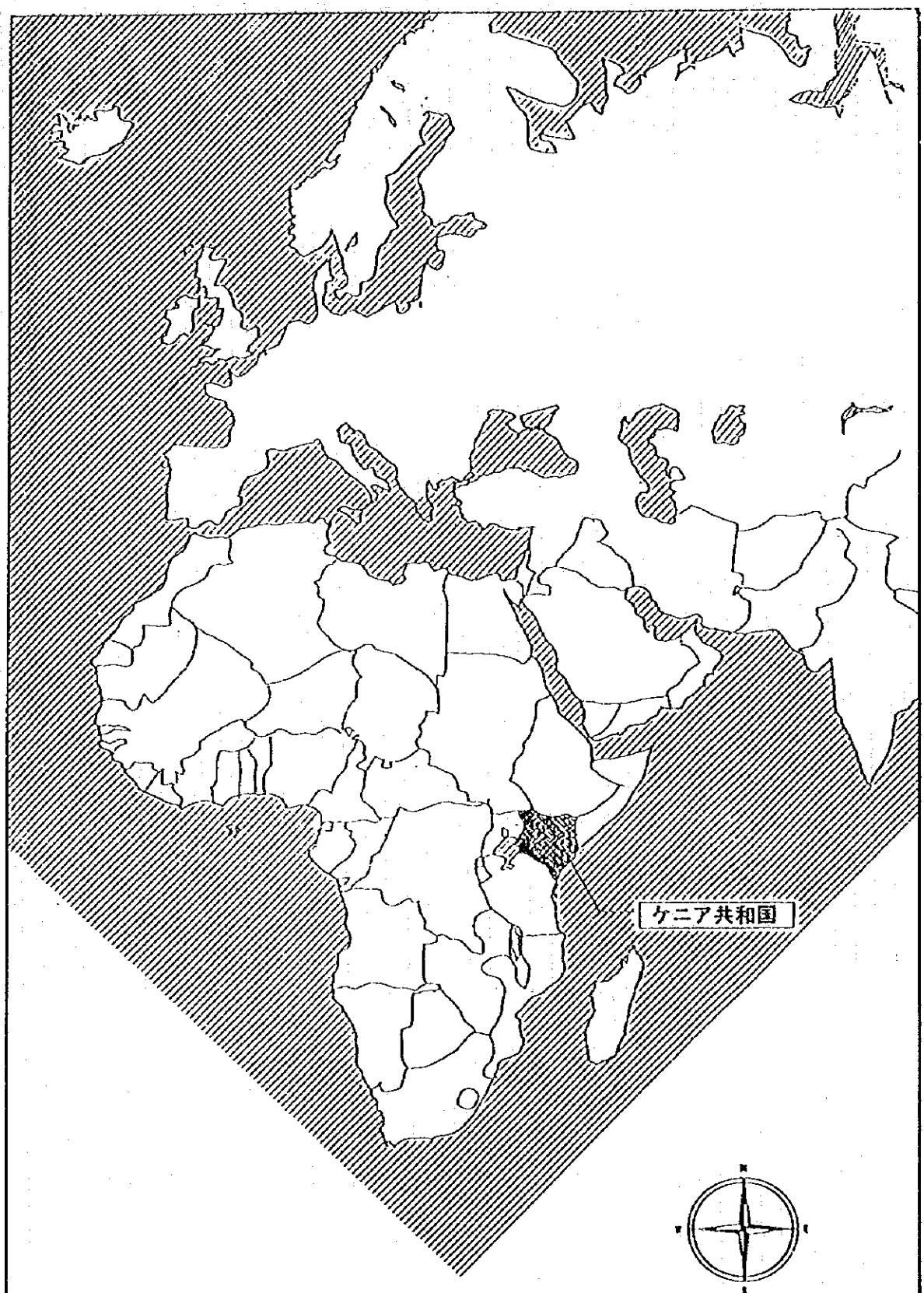
ケニア国感染症研究対策プロジェクトは、平成２年５月１日から平成７年４月30日までの５年間、ウイルス性下痢症、ウイルス性肝炎、細菌性下痢症、住血吸虫症、フィラリア症の５分野における基礎研究推進の協力を実施し、更に平成８年４月30日までの１年間はフォローアップ期間として協力を行っております。

今般ケニア国政府より、同国で現在深刻な問題となっているHIV/AIDSの研究に重点を移し、加えて同国において小児の死亡原因の1/4から1/3を占める急性呼吸器疾患（ARI）の研究対策及び現在の協力分野の継続となるウイルス性肝炎の研究強化を目的とし、本プロジェクトの次期フェーズの協力の可能性を要請越しました。

係る要請を受けて、次期フェーズ実施の可能性及び協力内容の打合せのため、札幌医科大学の千葉峻三教授を団長とする事前調査団を平成８年１月20日から平成８年１月30日まで同国に派遣しました。本報告書はその調査結果を取りまとめたものです。ここに、本調査にご協力を賜りました関係各位に深甚なる感謝の意を表しますとともに、今後とも本協力事業の成功のために更なるご支援をお願いする次第です。

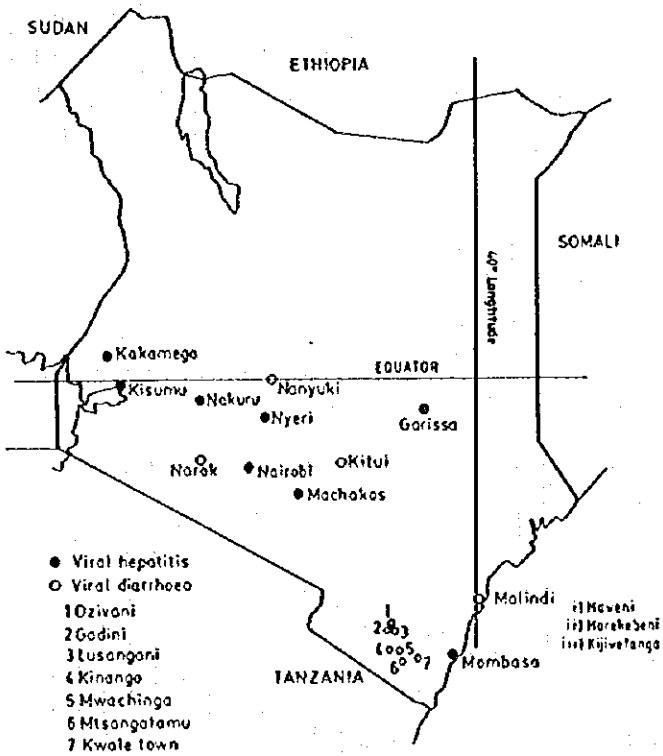
平成８年３月

国際協力事業団
理事　小澤　大二



ケニア共和国位置図

Map of Kenya showing the many areas where KEMRI - JICA collaboration projects are situated.



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1．事前調査団派遣

1－1　調査団派遣の経緯と目的

(1) 調査団派遣の経緯

ケニア共和国（以下、ケニアと略す）ナイロビに我が国の無償資金協力により建設された中央医学研究所（KEMRI）では、昭和60年5月より下痢症研究を中心とした「中央医学研究所プロジェクト」が5年間実施された後、各種感染症の総合的な研究の更なる推進のため、引き続き「感染症研究対策プロジェクト」の要請がなされた。

これを受け、ウイルス性下痢症、ウイルス性肝炎、細菌性下痢症、住血吸虫症、フィラリア症の5分野における基礎研究の推進のために平成2年5月から5年間にわたり、「感染症研究対策プロジェクト」を実施し、平成8年4月30日までの1年間はフォローアップ期間として協力を行ってきている。

ケニア政府は第7次国家3カ年計画（1994～1997年）において、エイズ・人口問題を重点分野とし、エイズについてはその感染予防、研究開発、教育啓蒙を基本政策としており、中央医学研究所はその中心的研究機関としての役割を果たすことを期待されている。係る経緯から、今般ケニア政府は、研究テーマの重点をHIV/AIDSとし、加えて現在ケニアにおいて小児の死亡原因の1/4から1/3を占める急性呼吸器疾患（ARI）及び現在の協力分野の継続となるウイルス性肝炎の研究強化を目的とし、本プロジェクトの次期フェーズ実施に係る要請をしてきた。

(2) 調査団派遣の目的

係る要請を受け、また既に提出されていたKEMRI側の次期フェーズについての活動プロポーザルに基づき、下記の項目を中心として今後の双方の対処方針を明確にし、我が方の協力可能な分野の選定、及び5年間の活動を実施する場合の基本的事項についてケニア側と打合せを行う。

調査・打合せ事項

① 5年間の活動概要及び要請越した3分野（HIV/AIDS、急性呼吸器疾患、ウイルス性肝炎）の活動計画

② ケニア側の実施体制（ローカルコスト負担等を含む）

また、本調査において双方で合意した事項については、ミニッツに記載する。

1－2　調査団の構成

	担　当	氏　名	所　　属
団長	総括	千葉　峻三	札幌医科大学医学部小児科学教室教授
団員	HIV/AIDS	栗村　敬	大阪大学微生物病研究所教授
団員	肝炎	矢野　右人	国立長崎中央病院臨床研究部長
団員	計画管理	三好　克哉	国際協力事業団医療協力部医療協力第二課職員

1－3　調査日程

日順	月日	曜日	移動及び業務
第1日	1／17	水	矢野団員 イスラマバード発(PK141)(01:30) カラチ着 (03:30) カラチ発 (PK781)(07:00) ロンドン着 (13:00)
2日	1／18	木	矢野団員 ロンドン発 (AF817)(17:40) パリ着 (19:45) パリ発 (AF478)(22:55)
3日	1／19	金	矢野団員 ナイロビ着 (09:00)　KEMRI 肝炎分野打合せ
4日	1／20	土	栗村団員 大阪発 (NH1101)(11:30) ロンドン着 (15:25) 千葉団長、三好団員 東京発 (NH201)(11:30) ロンドン着 (15:05)
5日	1／21	日	千葉団長、栗村団員、三好団員 ロンドン発 (BA069)(22:25)
6日	1／22	月	千葉団長、栗村団員、三好団員 ナイロビ着 (09:55)　団内打合せ、JICA 事務所打合せ、 日本大使館表敬、KEMRI 所長表敬
7日	1／23	火	KEMRI 理事会議長表敬、保健省・科学技術省表敬、 KEMRI 施設視察
8日	1／24	水	KEMRI にて協議 (個別、全体)
9日	1／25	木	KEMRI にて協議 (個別、全体)
10日	1／26	金	ミニッツ署名、JICA 事務所、日本大使館報告
11日	1／27	土	資料整理 ナイロビ発 (LH581)(23:50)
12日	1／28	日	フランクフルト着 (06:10)
13日	1／29	月	フランクフルト発 (NH210)(19:30)
14日	1／30	火	東京着 (14:45)

1－4　主要面談者

(1) 日本側

堀内　伸介	在ケニア日本国大使館特命全権大使
阪井　清志	在ケニア日本国大使館一等書記官
田上　　実	JICA ケニア事務所所長
藤江　　顕	JICA ケニア事務所所員

(2) ケニア側

DR. D.K.KOECH	DIRECTOR, KEMRI HQS
DR. ABDULLA	CHAIRMAN, BOARD OF DIRECTORS, KEMRI
PROF. K. MUTAHI	PERMANENT SECRETARY, MRTTT
DR. D.M.N. GAKUNJU	DEPUTY SENIOR DIRECTOR, MEDICAL SCIENCE SECTION, MOH

2．総括報告（千葉団長）

2－1　総括報告

次期フェーズにおける活動計画については、既にKEMRIのDr.GithureとDr.Oregeが研修員として来日中に、またDr.Tukeiが日本エイズ学会に出席のため来日中に、各国内準備委員並びにJICA本部との協議により大筋が合意されていた。したがって、今回の協議においてはそれらの活動計画の再確認及び更に具体的な分野別協議と、プロジェクト実施に際しての基本方針の策定・合意、ケニア側の負担事項の確認に重点を置いて調査がなされた。

(1) 主要面談者に対する要望

1月22日朝ナイロビ到着後、当日午後と翌23日にかけて日本大使館並びにケニア政府各省庁等を表敬訪問した際に主要面談者に対して要望した内容の要点は下記のとおりである。

堀内伸介大使：

① 次期プロジェクトへの理解と支援

② P3ラボ建設の要請

KEMRI所長Dr.Koech並びに各センター長：

① 次期プロジェクト遂行に対する強力なリーダーシップ

② 次期プロジェクト遂行の主役はKEMRIスタッフであることの自覚の啓発

③ リサーチ・プロポーザルを目的が明確で実現可能なものに絞りこむこと

KEMRI理事長Dr.Abdulla：

① 次期プロジェクトへの支持とリーダーシップ

② 日本大使館からの要望書に対するKEMRI側からの回答書に書かれた内容の履行

MRTTT次官Prof.Mutahi：

① 次期プロジェクトに対する支持とリーダーシップ

② ローカルコスト負担の履行

MOH Dr.Gakunjú：

① 次期プロジェクトへのコミット、人的支援

② KEMRIプロジェクトにおける成果の保健計画への利用

おおよそ以上の要望に対する理解と支持を得られたものと思うが、ローカルコスト負担計画など具体的なコミットの履行については今後も折に触れて再確認する必要がある。

(2) KEMRI施設の視察

1月23日午前に行われたKEMRIの各センターの視察は時間に制約があり忙しいツアーとなったが、その中でBSRCのDr.Khanのラボ、VRCの肝炎ラボ、CRCのRDRユニットなどがリサーチ遂行能力の点で優良の印象を得た。

(3) 全体会議における協議と合意事項

既に述べたKEMRIカウンターパート3人の来日中に各国内準備委員との協議による大筋の合意に基づき、3分野ごとの活動計画について個別協議を行い、ある程度の合意に達した後に、1月24日午後と25日に関係者全員による全体会議が開かれ、協議の結果、26日午前に合意事項に関するミニッツの署名が行われた。

主要合意事項は下記のとおりである。

① ６名の長期専門家派遣
② およそ３カ月を派遣期間とする各分野短期専門家派遣
③ 年間６名程度の研修員受入れ
④ 初年度の供与機材については、本部内示８千万円に対して、およそ２倍の額の供与希望が提出されているので、今般作成された現存機材の INVENTORY LIST に基づいて、既存のものについてはそれを活用し、緊急性の高いものから供与予定機材とする。
⑤ プロジェクトには新規に出納管轄、機材管理等の責任者の配置
⑥ プロジェクト運営に当たっての新組織体制
⑦ ケニア側の５年間のコスト負担額
⑧ 各分野の活動項目及び責任者
⑨ 英文プロジェクト名（KEMRI/JICA RESEARCH AND CONTROL OF INFECTIOUS DISEASES IN KENYA-4TH PHASE）
⑩ 各分野ごとの５年間の暫定活動予定
⑪ ナイロビ大学におけるカウンターパートの学位取得実施の促進

(4) 結論

実施調査団（R/D ミッション）派遣時期が３月下旬であることを考えると事前調査団派遣時期としては遅かったが、スムースに調査活動が達成されたと思われる。その主な理由として、①KEMRI カウンターパート来日時の協議で大筋の合意が得られていたこと、②赤井リーダー並びに遠藤調整員と KEMRI 側との間で調整が進められていたこと、③JICA 本部でミニッツのドラフトを用意しておいたことなどが挙げられる。

次期プロジェクトにおいて従来のプロジェクトと最も異る点は、フィールドワーク、ラボワークともに KEMRI 側の主体性を明確に打ち出したことである。しかもエイズ、ARI という新しいテーマがサブプロジェクトとして加わったこともあって、KEMRI 側関係者に従来にない意欲を感じた。しかし、プロジェクトが開始された後も、意欲が維持され、目的の達成に向かって遂行されるか否かについては注意深く見守る必要がある。KEMRI 側に主体性を持たせた分、きちんとした評価をすべきであろう。プロジェクト運営に当たっての新組織体制の編成は今回が初めてであり、KEMRI 側の意欲を示すものであろう。しかし、セクショナリズムが強いことから、新体制が良く機能するかどうかについて、セントラルラボとしての P3 ラボの運営とともにフォローする必要がある。また、Key person としての Dr.Tukei の WHO 停年以後の見通しを立てる必要がある。

ケニア側の５年間のコスト負担額を明示させたことは従来からの懸案に関する大きな進展であったが、コミットメントの履行を求めていく必要がある。

日本側の問題として、P3 ラボの建設については堀内大使の理解も得られたが、早く具体化することが望まれる。チームリーダーとして滋賀県庁に勤める角野氏が内定したので、可能であれば R/D ミッションのメンバーとして同行し、次期プロジェクトと KEMRI の実態を把握することが望まれる。またプロジェクトのスムースな開始のために遠藤調整員の任期を最低数カ月間延期することを要望する。

2－2　ARI（急性呼吸器疾患）

当初予定していた長期専門家の派遣ができなくなり、現在人選続行中であるが、現時点ではプロジェクト開始時の同時派遣は困難であると予想されることから、ARI そのものは本プロジェクトの３本柱の１つとして残しつつ、初年度は短期専門家派遣と研修員受入れ及び機材供与のみの対応とすることにした。今回のミッションに ARI 担当の小林教授が参加されなかったので、赤井リーダーと千葉団長が KEMRI カウンターパートとの個別協議に応じた。１月 25 日午後、リーダー室において ARI コーディネーターの Dr.Odhiambo、CRC の Dr.Wasunna、VBDRC の Dr.Oloo らと次期プロジェクトにおける ARI に関する活動内容に関して話し合いが持たれた。既に小林教授と彼等カウンターパートとの間で大まかに合意されていた事項に沿って討議された内容は別添資料のとおりである。実施計画についてはこれまでの合意内容に従い小林教授との間で煮つめていくことが確認された。

別添

MINUTES OF DISCUSSION HELD IN PROFESSOR AKAI'S OFFICE ON 25TH JANUARY 1996, AT 1430 HOURS.

PRESENT:

1.	Professor Akai	-	KEMRI/JICA project Team Leader
2.	Professor Chiba	-	Japanese Preliminary Survey Team Leader
3.	Dr. Wasunna	-	Director CRC, KEMRI
4.	Dr. Oloo	-	Director VBDRC, KEMRI
5.	Dr. Odhiambo	-	ARI Co-ordinator KEMRI

MINUTES:

MIN. 1/25 ARI PROGRAMME

General Objective

To develop and install basic technical capabilities and capacity for the prevention, control and management of Acute Respiratory Infections (ARI) through multidisciplinary scientific investigations.

Specific Objectives

a) To study the aetiology, epidemiology and risk factors including vaccination status of ARI patients in selected cohorts.

b) To develop appropriate preventive and management strategies for the control of ARI .

c) To develop improved methodologies that distinguish between ARI and other infections, for example malaria.

d) To establish biotechnological techniques for the diagnosis, management and control of ARI

e) To relate antibacterial sensitivity to clinical responses in ARI.

It was agreed that:

1 (a), (b), (c) and (e) objectives can be initiated and implemented by expertise already in existence in KEMRI.

Objective (d) will require a Japanese expert who will be sent on short attachments. Japanese experts will also instal and train local scientists in bronchoscopic techniques.

2 Two cohorts will be established in Nairobi (Kibera) and Kisumu.

MIN. 2/25 KIBERA COHORT

ARI co-ordinator to explore possibility of using the same clinic in Kibera used in the HIV programme. This could be Crescent Medical Clinic or City Council facility. The other option would be to identify land for construction of exclusive JICA/KEMRI ARI project clinic. Funds for this may then be required.

It was agreed that:

1 Further consultations with Professor Kobayashi will be made by Professor Chiba and Professor Akai. Final response to be sent to Nairobi as soon as possible but certainly before March 1996.

2 Activity, meanwhile, to go on immediately regarding identification of study sites and generation of study cohorts. The ARI coordinator to travel to Kisumu to assess infrastructure and resource needs.

3 For Kibera cohort, KEMRI laboratory facilities will be utilized. A mini bus will be provided for patient and laboratory specimen transport.

4 Funds for patient, outpatient and inpatient care will be considered.

5 Facilities related to books/journals on ARI will be arranged for through Internet.

6 Bronchoscopic facilities will be provided in the ARI programme not so much because this is required to manage ARI cases but for the following reasons:

1 Capacity building within KEMRI for investigation and management of lung diseases in Kenya.

2 Investigation of lung disease associated with HIV especially in adult patients, for example PCP, atypical bacteria, viruses, malignancy and others.

7 This was a very useful and important meeting where most of the issues on ARI were clearly and exhaustively presented and discussed.

APPROVED FOR ISSUE _____ CHAIRMAN _____ DATE

CONFIRMED AT THE MEETING _____ CHAIRMAN _____ DATE

3．分野別報告

3－1　ウイルス性肝炎（矢野団員）

ケニア感染症対策研究プロジェクト（1996～2001年）の事前調査団員として過去の研究成果を基礎にこれからの研究計画を討議し、ケニア側・ケニア中央医学研究所（Kenya Medical Research Institute）との間で覚書を交すことを目的にケニアを訪問した。訪問団員は千葉団長、栗村団員と3名であり、この他短期専門家として笠原専門家、JICAより三好担当官が参加した。調査団の中で肝炎プロジェクトに対する今後の在り方を担当した。なお、団員出発に先立ち2日前の1月17日より現地に向かい、肝炎部門の実務担当者と話し合いを行った。

1月19日9時、ケニア着。午後2時30分より、KEMRI Virus Research Centre（VRC）でこの部門のDirector、Dr.Tukei、Dr.Okothを始め全肝炎研究関係者が集まり、2時間にわたり現況及び今後の方針について話し合った。

肝炎部門においては前フェーズよりこの1年間のフォローアップ期間中、ケニア側の手でHBs抗原測定キット、HCV抗体測定キット、肝ガン診断薬としてのAFP診断キットが順調に生産され、国内8 Province Hospitalの輸血血液が順調にスクリーニングされている。現在までの測定検体数は9万3,000検体に達し、3.9%約3,200本のHBs抗原陽性血が感染源血液として輸血より除外されている。一方、肝疾患登録患者はこの1年間のフォローアップ期間だけでも471例に及び、超音波検査、肝炎ウイルスマーカーが測定されている。このうち56例の肝ガン患者、60例の肝硬変患者が診断され、肝ガン患者の約38%がB型肝炎関連であることが実証されてきた。キット生産部門、臨床部門ともに順調に彼ら自身の手で研究を推進している。1月22日午前9時より、肝炎部門において個人個人の今後の研究方針につき検討を行った。その概要は、

1) 基礎部門と臨床部門を区分けする。
2) 基礎部門はHBs抗原、AFPキットの凍結乾燥化を図り、コールドチェーンなしに保存、運搬可能とする。
3) Province HospitalあるいはDistrict HospitalでのHBs抗原スクリーニングについてはMinistry of Health（MOH）にできるだけ移管する。
4) MOHへの移管方法として、この部門に国立ケニヤッタ病院血液銀行所長のDr. Nyamongoへ依頼する。
5) 新しくVirus Hepatitis Diagnostic Centreとして、あらゆるウイルス性肝炎診断に対応できるよう、PCR法を加えた肝炎ウイルスマーカー測定機能を充実させる。
6) Hep Cellキットをアフリカ近隣諸国へ供給し、技術移転とともにKEMRIが肝炎のアフリカにおける中心的研究所になるよう推進する。

これらの点につき各担当者との話し合いを行い、了解を得た。

午後、調査団はJICA事務所長、日本大使の表敬訪問を行い、KEMRI所長への表敬訪問で基本的話し合いを行った。

午後7時30分より調査団、KEMRI所長、JICA担当者を含め、深夜11時まで次フェーズの研究計画策定につき激しい討論が行われた。討論は基本的な問題に触れ、相手国ケニアの人材育成、行政的対応、研究計画のSustainabilityを保つためにいかなる方法を採るか等、今までにな

い議論が行われた。

1月23日、KEMRI理事会代表Dr.Abdulla訪問。肝炎関係では、8 Provincial Hospitalでの輸血血液スクリーニングに関しては研究レベルは達成されたので、本プロジェクトよりMinistry of Health (MOH)の機能へ移すことを前回約束してくれたことに対してその可能性について質問、今後Hep Cellを商業ベースに乗せるよう努力し、MOH機能として更にDistrict Hospitalより下位の輸血施設に置き、routine workとして実施することを現在MOH、MRTTT (Ministry of technology and technological training)と話を進めている。近い将来実現できるであろうとのことである。その後KEMRI各施設の訪問。MRTTT、PS(事務次官)、MOHを表敬訪問する。夜、JICA所長を交え、次期プロジェクトに関する日本側の対応を検討した。今回のプロジェクトはあくまでもケニア側の自主性を尊重し、日本側のアシストを主体とすることが確認された。

1月24日、KEMRI側との第4フェーズに関する細部について話し合いが行われた。KEMRI側Koech所長、Githure新副Co-ordinatorを始めとし各部門のDirector、Co-ordinator約25名、日本側調査団、JICA事務所より9名が参加し、第4フェーズに対する基本的考え方、日本側専門家、器具供与、ケニアカウンターパートよりのプロポーザル、研究責任者組織図、ケニア政府のコミットメント、特にケニア側から出されたプロポーザルに対する各部門の詳細につき、2日間にわたって検討が行われた。第1日目(24日)は総論の確認が行われたが、この項については団長報告参照のこと。

1月25日、KEMRI側との詳細についての討議が続行される。特に、各プロジェクトのKEMRI側プロポーザルに関する日本側との打合せが行われた。この中でVirus Hepatitisプログラムの決定事項は以下のとおりである。

General Objective

To prevent viral hepatitides and to control for related hepatocellular carcinoma

Specific Objectives

a) To product IInd generation Hep Cell
b) To promote sustainable blood screening and incidence E of viral hepatitides
c) To introduce sensitive molecular diagnostic techniques such as PCR for viral hepatitides
d) To promote widespread utilization of the Hep Cell diagnostic kit in the region
e) To introduce sensitive techniques for the early diagnosis and management of hepatocellular carcinoma

ワクチン生産に関する項は削除することを決定した。

午後、KEMRI・VRCの肝炎部門との協議会を持ち、以下のことが決定された。

1) 肝炎部門はLaboratory部門と臨床部門の2部門とする。実験室部門にはCo-ordinatorとしてDr.Nyamongo (National Kenyatta Hospital)を配置し、臨床部門はDr.Okothが担当する。
2) Co-ordinator、Scientist、Doctorは年3回、研究経過の報告を国内委員(矢野)に行う。
3) Scientist及びChief technologist、Co-ordinatorの研究計画書を2月末日までにまとめ、

3月第1週に Dr.Nyamongo が日本へ持参し詳細を検討する。

4) 第2世代、Hep Cell は直ちに製造に入り4月より使用可能とする。1バイアル 2.5ml とし、100 検体分の規格のみとする。年間生産予定 1,000 バイアルス、約 10 万テスト分とする。

5) IInd generation Hep Cell に関しては包装箱を用意し、かつ使用マニュアルを印刷し体裁を整えて KEMRI より出す。

6) PCR による各種ウイルスマーカー測定機能を充実させ、ウイルスマーカーに関する測定センター機能を充実させるために、初年度の日本研修は Mr.Mathenge とする。

7) 近隣諸国への Hep Cell を中心とする技術交換に関してはザンビアを対象とし、Mr.Kaiguri、Mr.Ocidiana を充て、日本側専門家とともにザンビアへ派遣する。

更に第三国研修として肝炎セミナーを開催し、ケニア、ザンビア、ガーナ、ウガンダ、タンザニアの参加者を得た肝炎セミナーを開催する。更に国内におけるセミナーも中堅技術者を中心に初年度に開催を行う。

8) 臨床データに関し、現在まで 1,000 例以上のプロトコール及び検体が集積されているが、これらの解析が行われていないため Dr.Okoth を中心に解析を行う。

これらの細部につき話し合いを行い、ほぼ具体的内容が確認された。

最終日、両者間でミニッツに署名がなされ調査団の任務が完了した。

3－2　HIV/AIDS（栗村団員）

(1) 派遣目的

1996 年度よりケニア国感染症対策プロジェクトに HIV/AIDS が加わることになり、KEMRI を中心とするケニアのエイズ対策に協力することとなった。そこで、ケニアの現状と KEMRI の活動状況、更には将来の可能性の検討を行った。

(2) KEMRI の対応

今回、HIV/AIDS に関連する調査研究に参加を希望するスタッフは 40 名を超えており、関心の高さを示すものであるが、希望の技術的内容に疑問もあり、型の如く director 達と話をする機会をなるべく少なくし、現場で調査研究を行うスタッフとの対話の時間を増やした。その結果、スタッフのレベルは個人差が大きく、数少ない優秀なスタッフを中心としながら全体のレベルアップに務めることが日本側の活動の重点とならざるを得ないと判断した。特に将来設置予定の P3 ラボの活用と運営のためのかなりの努力が今後重要となろう。

(3) HIV/AIDS 研究の柱

1) HIV の分子疫学

アフリカにおいては HIV-1 型、2型更には、それぞれの亜型の分布が国によって異なっている。そのためケニア及びその周辺国の HIV の分子疫学を行い、同地方におけるエイズ流行の特徴を把握する。P3 ラボにおいてウイルス分離を行う。

2) コホート研究

ブシア (1)、キスム (1)、ナイロビ (2)の4群のコホート研究を行う。その中には妊婦、出産後の母子を含めてケニアにおける流行の実態と特徴（日和見感染症を含めて）を検討する。

3) アフリカの薬草よりの抗HIV物質

アフリカ大陸に存在する薬草についてはKofiを中心とした専門家グループがKEMRIには存在しており、全450種中250種の薬草の抽出が可能な状況にある。最初の2年間はその収集と抽出を行い、P3ラボの完成とともに抗HIV活性のスクリーニングを行う。

4) 抗HIV検査キットの開発

既にB型肝炎グループが抗原テストキットの開発に成功しており、これに倣って、凝集反応を原理とするキットの開発を行う。その担体としては5カ年間の間にゼラチン粒子、赤血球について検討する。なお、P3 ラボ完成後は抗原の自家生産を始めるが、それまでは日本より入手することになる。

(4) HIV/AIDSに関する日本人専門家

現在のところ、大阪大学微生物病研究所、京都府立医科大学微生物学講座、富山医科薬科大学ウイルス学講座、国立呉病院臨床研究部を中心に派閥色をなくし、幅広い有能な人材の投入を考えている。

(5) プロジェクト遂行に当たって注意すべき点

1) HIV検査はB型肝炎検査と異なり、受け入れられ難い場合がある。
2) 日和見感染に必要な分野（結核菌、真菌など）の設備（キャビネット等）が十分でない。
3) 血液スクリーニングなどは地方病院でも完全に行われるようにする必要がある。
4) サーベイランス情報の収集がうまくいっていない。

参考資料

Republic of Kenya

Ministry of Health

Report of the Workshop on the Strengthening and Reorganization of Blood Transfusion Services

WHO Conference Room 6th - 7th June, 1994

Prepared by: National Public Health Laboratory Services
&
National AIDS /STD Control Programme

With
assistance of : WHO/GPA Kenya

1.0 INTRODUCTION

The Laboratory subcommittee in its meeting of 15th May, 1994 recommended that a workshop be held to deliberate on and give recommendations on the re-organisation and strengthening of the Blood Transfusion Services(BTS). This recommendation was arrived at after the following observations:

- the country's blood supply has been showing a steady decline over the years.
- with over eighty(80) centres performing ELISA screening supervision and Quality Assurance has become difficult.
- there is alot of wastage of reagents, especially in centres with low workload, hence the need to rationalise our screening strategy.
- most of the ELISA screening equipment was coming to the end of their lifespan and therefore becoming uneconomical to service.

1.1 Objectives

The objectives of the workshop were:

1.1.1 to study and give recommendations on the organisation and management structure of the BTS.

1.1.2 to develop a blood policy for the country.

1.1.3 to study and give recommendations on effective blood donor recruitment strategies.

1.1.4 to study and give recommendations on ways of rationalising the blood screening programme.

1.2 The workshop was held for two days from 6th to 7th June, 1994 at the WHO conference Room. Participants were drawn mainly from Nairobi with representation from the provinces. It was officially opened on behalf of the Director of Medical Services by Dr. Sang (see Appendix I for opening speech) and closed on the 6th June, 1994 by the WHO Representative to Kenya, Dr. P. Chuke (see Appendix II for closing speech).

1.3 The workshop was divided into plenary and group discussions. The three groups discussed the following topics:

Group I - Blood policy
Organisation and Management structure of the BTS.

Group II - Blood donor recruitment strategies.

Group III - Blood screening programme strategies.

2.0 BLOOD POLICY AND ORGANISATION OF BTS

2.1 Organization

2.1.1 After lengthy discussions it was recommended that, as a matter of priority, the government establish an integrated semi-autonomous National Blood Transfusion Service (NBTS) to be managed as a parastatal.

2.1.2 The NBTS should have a Management Board with a standing Technical Advisory Committee. The Board will be mandated to recruit, develop and deploy personnel working in the service. The NBTS, with a Director as its chief officer, will form the secretariat for the Board.

2.1.3 The NBTS will manage the country's Blood Programme on behalf of the Board following laid down policy guidelines.

2.1.4 The NBTS will have eight(8) Regional BTS(RBTS) and several satellite BTS. The RBTS will, for logistic reasons, be based at the provincial headquarters. In those remote areas where communication to and from the provincial headquarters may be poor, satellite BTS, administered directly from the NBTS, will be established. The Board will from time to time, determine the number and location of the satellite centres (see Appendix IV for Organogram).

2.1.5 The RBTS will be:

- Nairobi
- Nyeri
- Nakuru
- Eldoret
- Embu
- Kisumu
- Kakamega
- Mombasa.

There will be several satellite BTS, among which will be:

- Garissa
- Wajir
- Mandera
- Marsabit
- Moyale
- Hola etc.

2.2 Funding

The NBTS will be a non-profit making and service providing parastatal. Initial start-up capital expenditure from the government will be required. The NBTS is however expected to be self-sustaining. The Board will identify sources of funds for the running of the NBTS. Such sources may be from:

- subventions from the Treasury.
- operation of a cost-recovery scheme.
- medical insurance schemes.
- private organisations and individuals.
- external sources.
- marketing of products.

2.3 Blood Programme

The NBTS will manage the country's Blood Programme on behalf of the Board. It will get its supply of blood from voluntary, non-remunerated blood donors. The NBTS will endeavour to establish a panel of regular safe donors through its Blood Donor Recruitment Programmes.

Each RBTS will collect, process and distribute blood in its area of jurisdiction. The RBTS will determine the blood needs for its region and strive to meet those needs. There will, however, be close co-operation and interaction in the distribution of blood between different RBTS.

No Institution or individual will be allowed to collect, process and distribute blood and blood products without accreditation from the Board.

2.4 Legislation

A law, to be known as the Blood Transfusion Act, to establish, govern and regulate the NBTS will be enacted as a matter of priority.

3.0 <u>BLOOD DONOR RECRUITMENT STRATEGIES:</u>

The Blood Donor Department is the heart beat of any BTS, for without blood there can be no BTS. Hence emphasis should be made in having a vibrant and functional Blood Donor Department within the NBTS.

3.2 The NBTS should develop and implement a Blood Donor Recruitment criteria appropriate to Kenya.

3.3 The Board should establish an enabling environment for proper and active donor recruitment in order to satisfy the country's blood requirement. This will be achieved through the:-

- employment of appropriate staff e.g nurses, technicians, clinicians, IEC specialists etc.
- use of IEC strategies in donor recruitment.

3.4 The NBTS will develop and implement guidelines on post donation care and donor counselling.

4.0 BLOOD SCREENING

4.1 It was noted that although HIV and syphilis screening is now carried out country-wide, Hepatitis B virus (HBV) screening is only carried out at Provincial level and yet it is government policy that all blood intended for transfusion must be screened for the three diseases.

It is recommended, therefore, that all blood be screened for the following diseases:

- HIV
- Syphilis
- HBV
- Other blood transmitted diseases as may be directed by the Board from time to time.

4.2 In view of the problems observed with the present blood screening system which leads to wastage of reagents and is difficult to supervise and quality control, it is recommended that:

4.2.1 ELISA screening equipment be withdrawn from district and (those other hospitals that have received government equipments).

4.2.2 Only RBTS and recognized centres will be allowed to screen blood using ELISA.

4.2.3 The rest of the centres to use rapid/simple assays.

4.2.4 Two different ELISA kits (competitive and non competitive) be available at the RBTS and other recognized centres.

4.3 The RBTS will thus collect, screen, and process blood in a given area and distribute only screened blood to hospitals. There will thus be no need for district and other hospitals to retain ELISA screening equipment. The implementation of this policy is a priority.

4.4 Pre-test and Post-test counselling facilities will be made available to donors. All donors will be encouraged to seek to know their results at which time they will be appropriately counselled.

5.0 RECOMMENDATIONS

5.1 As a priority the government should adopt and implement the recommendations of this workshop as given below:

5.1.1 The government should set-up an integrated semi-autonomous BTS.

5.1.2 The government should set-up eight RBTS and several satellite centres as given in 2.1.5.

5.1.3 The government should formulate a blood policy covering such areas as:

- establishment of a body to manage the BTS
- the sourcing of our blood supply
- enactment of legislation to govern the BTS.

5.1.4 Establishment of an effective blood donor recruitment department which will also provide for donor care and pre-test and post-test donor counselling.

5.1.5 Development of guidelines for the appropriate use of blood.

5.1.6 Provision of adequate supportive services to the BTS.

5.1.7 Identification of sources of funding for the BTS.

5.1.8 Develop Identification of strategies for staff development and retention.

5.2 Short - term recommendations

5.2.1 The government should form a separate BTS department within the Ministry of Health

which will later transform into the integrated semi-autonomous BTS.

5.2.2 Identify a core team to manage this department which will work towards the formation of a full fledged BTS.

5.2.3 Implement the recommended HIV screening strategy as given in 4.2.

5.2.4 Establish a vote for the BTS.

5.2.5 Put the plans for the establishment of a BTS in the forward budget.

5.2.6 Identify office space for the core team.

5.2.7 Provide adequate transport for the core team.

Appendix I

Speech by Professor G.B.A. Okelo, Director of Medical Services on the opening of the workshop on Reorganisation and Strengthening of the Blood Transfusion Services.

LADIES AND GENTLEMEN,

It is indeed my great pleasure to be able to be with you here and to preside over the opening ceremony of this important workshop. Let me take this early opportunity to welcome all of you. It is my hope that your stay here, especially for those from outside Nairobi, will not only be enjoyable but also rewarding and that your deliberations will be fruitful. Each one of you has some expertise that he or she has carried to this workshop: Expertise and Experience which I hope will be useful during your discussions here.

For the next two days you will be discussing a subject of fundamental importance to the ministry of health, that is, ensuring a safe supply of blood and blood products. Let me assure you from the outset that the ministry is looking forward to the suggestions and recommendations of this workshop and will spare no effort to implement those recommendations. Over the years the blood supply in this country has been going down and this is despite the ever increasing patient population and sophistication of the health care delivery system. Infact it is estimated that the demand for blood continues to grow at an annual rate of ten percent while the supply has been diminishing even at a higher rate over the years.

This I hope is one of the problems which you will be discussing with a view to finding solutions to reversing this downward trend. Every effort should be made to motivate people to not only donate blood but also become regular donors. This will ensure that there is always blood in our blood banks and thus avoid situations where a mother arrives at the hospital with a sick child and finds no blood. In this kind of emergency, often occurring at night, the health care worker ends up bleeding the mother. This blood is then, in most cases, hurriedly processed in order to be transfused. In these circumstances valuable time

is often lost and due care may not always be given. It is, therefore, important that blood is routinely available in the blood bank in order to be properly and adequately processed and made ready for the patient.

The ministry has also issued strict instructions that all donated blood must be screened for HIV antibodies, syphilis and hepatitis before transfusion. There is no room for the transfusion of unscreened blood. To meet this goal the ministry has installed HIV screening equipment in all provincial, district and all major mission hospitals. This workshop I hope will critically look at the blood screening system in the country and suggest cost-effective ways of not only sustaining but also strengthening it.

You will I presume, during these two days, also look at our blood transfusion services. The services in this country are mainly hospital based and operate as part of the hospital laboratory service.

Is this the most efficient arrangement? Or do we need to change and reorganise it differently? These are some of the questions you may need to ask yourselves. I am sure you will critically look at this and suggest the most appropriate and workable organisational and management structure for our blood transfusion services.

The ministry attaches great importance to the need to have a safe and adequate blood supply. For this reason the ministry is looking forward to the recommendations that will come out of your deliberations. I want to assure you, once again, that the ministry of health will take seriously and endeavour to implement the recommendations you will make.

With those few remarks, ladies and gentlemen, it is my great pleasure to declare this workshop officially open.

WORKSHOP ON RESTRUCTURING OF BLOOD TRANSFUSION

SERVICES IN KENYA
(Sponsored by the World Health Organisation)

6 and 7 June 1994

OFFICIAL CLOSURE

by

Dr Paul O. Chuke
WHO Representative

Appendix II

LADIES AND GENTLEMEN

Since the inception of the AIDS Control Programme, W.H.O. through its global programme on AIDS has been the main contributor to AIDS control activities to the Ministry of Health including blood safety measures. Recently W.H.O. has been in the process of rationalizing its support to AIDS control programme which implies focus on Planning, Monitoring and Evaluation of activities geared towards the prevention of the epidemic, increased advocacy for AIDS awareness, change of lifestyle and constant availability of test kits for epidemiological surveillance and screening of blood for transfusion. W.H.O will lean more on technical cooperation which is its main mandate and where it has over the years accumulated some degree of experience. It has never been a general donor and the strict financing administration and auditing ensures that funds are used for technical cooperation. W.H.O. cannot by its constitution be a purveyor of funds for core management of any country programme.

The organization of the workshop on restructuring of blood transfusion services in Kenya which is sponsored by W.H.O. should be regarded in the framework of this interpretation of an old policy. W.H.O. has an important role to play in stimulating the development of national strategies and policies vital for the organization and safety of blood transfusion services in Africa in short, medium, and long terms. In Kenya the supply of blood has shown a steady decline over the years. Last year only 70,000 blood units have been collected in the country in spite of the increase of the population and the development and sophistication of health delivery system. The management and coordination of over 80 ELIZA machines scattered all over the country for screening blood has been difficult and not cost effective. The introduction of ELIZA Kits in small peripheral level hospitals has lead to unnecessary wastage of testing Kits, difficulty in maintenance and quality control problems. Consequently an appropriate technology has to replace the ELIZA technique. Serodia has such credentials.

To counter declining availability of blood for patient transfusion there is need for a review and replanning for an appropriately organized and well managed blood transfusion services whose objective will be the provision of not only

adequate blood, but availability of safe blood and blood products. We are happy that your deliberations during the past two days were directed towards the formulation of strategy for the overall management of blood transfusion services. More specifically I have learned that the meeting has recommended the following solutions for sustainable blood supply and safety:

1. *Establishment of an autonomous blood transfusion service operating as a separate entity from the general laboratory set-up. This will give it better focus on supervision and management decision making, quality assurance.*

2. *Setting up approximately twelve regional blood transfusion centres expected to collect, process, and distribute adequate blood products for the hospitals of the region with adequate logistic support.*

3. *Formulation of blood policy covering areas such as:*
   - O *identification of a body solely responsible for blood transfusion services*
   - O *sourcing of blood supply*
   - O *enactment of legislation on blood.*

4. *Establishment of blood donors recruitment department and blood donor officers.*

5. *Development of guidelines especially on appropriate and rational use of blood, resulting in better donor recruitment, blood screening and appropriate use of blood.*

6. *Reorienting of clinicians on rational use of blood to reduce unnecessary transfusions.*

W.H.O. will assist Kenya technically in all these areas. But the implementation of this policy requires medium and long term measures. There are financial implication which the Kenya government would have no difficulty in meeting if a well prepared proposal is available on a comprehensive blood transfusion initiative. For your information, JICA has recently shown a great interest in AIDS and family planning matters in Africa. A delegation is expected in August in Kenya. The recommendations of this workshop can serve as ground work for interesting that mission in blood safety interventions in Kenya.

You have done a commendable work in these two days. The report needs to be written quickly. But we have alot of follow-up to do.

It is now my pleasure to declare this workshop officially closed. I thank you for your attention.

Appendix III

STRENGTHENING BLOOD TRANSFUSION SERVICES
DR. J. NYAMONGO

PREAMBLE

1.1 INTRODUCTION

In terms of development the in Kenya Blood Transfusion services (BTS) is still in its early stages and lags behind other health care delivery systems. Kasili, in his earlier review of the Kenya BTS, once observed that the degree of demand on a country's BTS is a good indicator of the standard of health services in such a country. Hence the need to keep the BTS always one step ahead of the development of health services of a country.

1.2. HISTORY OF THE BTS IN KENYA

1.2.1 No proper record on the history of the practice of Blood Transfusion in Kenya exist. It is however know that a rudimentary BTS started in Kenya in early the thirties based around a single surgical practice in Nairobi.

1.2.2 However, after the second World War, as demand for blood continued to grow, the Kenya Red Cross Society (KRCS) then known as the British Red Cross, took total responsibility over the running of the BTS in the country using technical personnel seconded from the government.

1.2.3 In 1966, after Kenya gained independence, the government took over the responsibility of running the BTS in the country. The KRCS still continues to provide blood donor recruitment propaganda material.

1.3 PRESENT SET-UP

1.3.1 The BTS in Kenya operate as part of the hospital general laboratory service and are under the

administrative responsibility of the Head, NPHLS. On a day today basis the Medical officer of Health administers the BTS in each respective hospital.

1.3.2 There are no designated posts for personnel working in the BTS. The personnel are transferrable from one section of the laboratory to the other. This makes it difficult to recruit and train appropriate personnel.

1.3.3 The BTS, apart from the Nairobi Blood Donor Service, have no voted funds for their activities. This has meant that the service competes for the meager resources under the miscellaneous or patient's food votes. The BTS does not always get priority in the use of this vote.

1.4 BLOOD NEEDS

1.4.1 There are approximately 40,000 hospital beds. of which 30,000 are acute hospital beds in Kenya, serving a population of 25 million people.

1.4.2 To adequately supply these hospitals with blood and blood products an annual collection of 300,000 units of blood will be needed.

1.4.3 With an annual population growth rate of 3.5% it is projected that the demand will be twice this in ten years time.

1.5 BLOOD COLLECTION

The blood supply has shown a steady decline over the years from an annual high of 150,000 units in the early eighties to a low of about 70,000 units last year. This is despite an increase in both the country's patient population and sophistication of the health care delivery system (see table 1).

1.6 The situation thus calls for a strategy to strengthen the BTS through the development of a National Blood Policy and to create managerial and technical capability to oversee the implementation of this policy.

2.0 PROBLEM DEFINITION

2.1 The problem may be defined as inadequate supply of safe blood and blood productsto meet the national needs of our health care system.

The main causes of this may be summarised as:

2.2.0. Ineffective donor recruitment

As seen in table 1 there has been a very rapid decline in the amount of blood collected despite the increasing demand. This can be attributed to:

2.2.1. The fact that BTS does not have its own voted funds to use in the planning and effective execution of a blood donor recruitment programme. Out of all scheduled donor sessions acknowledged over 50% are cancelled due to lack of funds for attending sessions or for donor promotion.

2.2.2 Lack of appropriately trained personnel able to conduct effective donor recruitment and promotion campaigns.

2.2.3. Lack of donor incentives, promotional materials and other supplies. These are most of the time unavailable or at best supplied erratically. For example, the government stopped supplying donor certificates and cards in 1986. Although the KRCS have done their best to fill this gap, their efforts have however not fully met the demand.

2.2.4 HIV/AIDS and the fear of it has contributed a great deal to the decrease in blood donations. This has also been compounded by the need to limit the sourcing of blood to low risk behaviour donor pools.

2.2.5. The family/replacement system which contributes close to 70% of blood used in our hospitals has killed blood donor recruitment as potential donors are "hoarding" blood for their relatives or friends. The family donor, though called voluntary, is in reality a

coerced and in some cases a privately paid individual. The seropositivity rates for various diseases in this group of donors in twice the voluntary donor, which thus leads to high discard rates and compromises in safety as this is not an ideal donor pool.

2.3.0 Increased demand

2.3.1. There is a genuine increase in demand for blood and blood products. Our hospital institutions are offering increasingly sophisticated services, especially with the posting of specialists even to district hospitals. There is an estimated increase in demand for blood and blood products of 10% per year.

2.3.2 The number of Road Traffic Accident victims needing emergency medical care in our hospitals continues to increase.

2.3.3 There has been a rapid increase in the country's population in general and the patient population in particular.

3.0 CONSEQUENCES

3.1 Loss of Life

There are deaths that have been attributed to blood shortage. The victims have been accident casualties or patients suffering from severe anemia, especially those related to acute haemolysis in malaria and those with oncologic or haemorrhagic diseases.

3.2 Compromise in blood safety

Many of the transfusions in our hospitals occur under urgent conditions. The chronic shortage of blood means that blood is obtained and transfused at short notice. This blood is therefore not processed and screened under ideal conditions. The family donors may not always meet the criteria for safe donors and

may due to family pressure, hide the essential information which may otherwise disqualify them as donors. Infact the HIV seropositivity rates among this category of donors is twice the rate among voluntary donors.

3.3 Bed Occupancy

There is a decrease in bed occupancy turn over rates because the patient has to stay longer in hospital. this also leads to longer admission waiting lists or ward congestions.

3.4 Time loss

Scheduled operations are frequently canceled because of shortage of blood leading to loss of many man-hours.

3.5 Socio economic Loss

The patient is, throughout the duration of his/her hospitilisation, economically non productive. Added to this there is the emotional and financial strain on the relatives and dependants on the resources they use for hospital visits.

4.0 RECOMMENDATIONS OF INTERNATIONAL ORGANIZATIONS

4.1 In 1975 the World Health Assembly recommended that:

- each country should endeavour to attain national self-sufficiency in blood supply.
- each country should establish an autonomous BTS to oversee the national blood programme.
- each country should develop a national blood policy.

4.2 This recommendation has since been ratified by many countries Kenya included and has been reiterated by many other international organisations notably the Federation of Red Cross and Red Crescent Societies, The International Society of Blood Transfusion and the WHO Global Blood Safety Initiative.

4.3 In 1989 the Ministers for Health of the Commonwealth Regional Community Health Secretariat (CRHS) for East and Southern African identified the strengthening of the BTS as a priority item. Lack of trained manpower was identified as a handicap in the establishment of BTS. To this end the CRCHS has organised regional courses for various cadres of professional staff and Kenya has already sent seven people to these courses.

5.0 SOLUTIONS

5.1 Establishment of an autonomous BTS

5.1.1 The BTS needs to grow as a separate entity from the general , laboratory set-up because many of its functions transcend the limited technical scope of a laboratory.

The BTS is often:

- Involved in public relation issues when dealing with a large section of the public on donor recruitment, education, care and counselling.

- Involved in the management of the blood programme and implementation of blood policy.

- Closely associated with the management of patients in offering specialist advice on transfusion medicine.

5.1.2 One must admit that the transfer of blood from a blood donor via a blood bank into a patient can be done without any organization and it can save lives. But we all realise that on a national basis, an organised BTS system gives better results.

Such a system has many advantages such as:

- Rapidity of decision making
- better co-ordinated resources
- Proper supervision and management
- Proper quality assurance and monitoring
- Cost effectiveness

5.1.3 A well funded and viable autonomous BTS should be established to oversee the national Blood Policy and manage the country's blood programme. The service should be able to recruit, train and retain its own personnel as well as undertake donor recruitment, bleeding, screening and processing of blood.

A series of Regional Blood Transfusion Centres (BTC) will be set-up with the Nairobi BTC acting both as the National and referral BTC and headquarters of the BTS. The BTC will together comprise the BTS. Each regional BTC will be expected to collect, process and distribute adequate blood and blood products to the hospitals in that region. The hospitals will thus only be involved in the transfusion of blood. In those remote hospitals where it may not be cost effective to be supplied from the regional BTC, the services will still remain hospital based but with close supervision from the regional BTC (see appendix A: for suggested organogram).

5.1.2 The fewer BTC (a maximum of twelve) will be:

- Cheaper to run
- Easier to supervise
- Easier to institute and monitor quality assurance measures.

5.2 Blood Policy

A national blood policy should as a matter or urgency be formulated. Such policy will cover the following areas:

- definition of the body responsible for organising the BTS
- the organisation structure of the BTS
- the source of the blood supply
- the management of the blood programme
- the sourcing of funds for running the BTS
- legislation/regulations related to blood (see appendix B)

5.3 Blood donor recruitment

5.3.1 The greatest deterrents to voluntary blood donation are fear of the unknown, lack of positive motivation and ignorance. The fear is seldom acknowledged and may well be subconscious in many persons.

What is needed is thus an effective publicity campaign to educated and motivate people to not only donate blood but to become regular blood donors. While it is easy to arouse temporary motivation to donate as occurs during the Kenyatta week Blood Donation exercise, it is relatively difficult to convince someone to become a regular blood donor. For this a personal rather than the current impersonal approach appears to work better.

A properly constituted and funded blood donor recruitment department within the BTS is needed. There is need to establish the post of Blood Donor Organiser to oversee the blood donor recruitment activities.

5.3.2 With the advent of HIV/AIDS many health care workers and the general population are pre-occupied with the issues f blood safety. The government has thus installed HIV screening facilities in all our hospitals specifically to screen blood before transfusion. But screening alone does not guarantee safety, other measures need to be put in place.

It has been said elsewhere that the final product is as good as the raw materials. this is also true in the BTS. The quality of the raw material blood, will depend on how selective and effective the donor recruitment programme is. This is the cornerstone of a safe blood supply.

5.4 Blood Transfusion Guidelines

National guidelines on the appropriate and rational use of blqod need to be developed. This will thus complete the triad of ensuring blood safety by

selective donor recruitment, blood screening and appropriate use of blood.

6.0 CONCLUSION

6.1 The raison d'etre of any Blood Transfusion service is the provision of not only adequate but also safe blood and blood products. This can only be obtained from well motivated, well educated and regular non-renumerated voluntary blood donors.

6.2 A blood policy should urgently be formulated and a body to administer this policy identified.

6.3 The blood transfusion services need to be given a statutory definition. an autonomous or semi-autonomous national blood transfusion service (NBTS) should be established. This will ensure that the BTS do not lag behind other health services.

YEAR	PATIENTS IN NEED	PINTS REQUIRED	PINTS ISSUED	DONATIONS FROM BDS
1975	10,000	18,000	9,000	17.700
1976	10,280	21,400	10,840	18,000
1977	13,205	21,466	10,629	18,600
1978	13,648	25,039	12,670	19,300
1979	15,242	25,412	11,972	21,106
1980	16,400	27,659	17,193	23,512
1981	15,300	27,837	15,147	26,684
1982	15,000	22,360	16,635	20,831
1983	18,300	22,434	15,900	20,231
1984	17,400	22,900	12,700	18,845
1985	-	-	-	19,729
1986	12,913	-	-	16,798
1987	-	-	-	17,477
1988	-	-	-	14,216
1990	8,397	13,238	9,686	11,963
1991	6,943	10,252	6,588	10,933

KENYA NATIONAL BLOOD TRANSFUSION SERVICES

SCHEDULE OF DUTIES

COMMISSION

1. Form the national blood transfusion policy.

2. Develop blood transfusion services on a countrywide basis.

3. To manage the country's blood resources.

4. To oversee the education of clinicians on practice of blood transfuion.

5. To advise the Director on ways of fostering medica, scientific and administrative excellence.

6. To raise supplemental funds for the running of the services through the fund raising sub-committee.

DIRECTOR

Responsible to the NBT commission through its Chairman.

1. Implement blood transfusion policy and blood resources management.

2. Effective management, coordination and supervision of blood transfusion services countrywide.

3. Act as a technical adviser to the government on transfusion matters.

4. Secretary to the National Blood Transfusion Commission.

5. Director of the National Blood Transfusion Centre.

6. A.I.E. holder of teh Kenya National Blood Transfusion Services.

DEPUTY DIRECTOR

Responsible to the Director.

1. Shall deputise the Director in his absence.

2. Shall be in-charge of all technical matters in the KNBTS.

3. Shall coordinate technical manpower development and deployment.

4. Any duty as may be assigned by the Director.

ASSISTANT DEPUTY DIRECTOR

Responsible to the Deputy Director

1. Shall be the administrative head of the department under him.

2. Shall be in-charge of all technical matters in his department.

3. Any other duties as may be assigned.

ADMINISTRATIVE SECRETARY

Responsible to the Director.

1. Coordination and management of administrative services of KNBTS.

2. Responsible for supervision of financial management and forward budget in liaison with the Supplies Officer and Accountant.

3. Coordination of supply management including disposal of unserviceable stores and audit queries in liaison with the Supplies Officer and the Principal Technologist.

4. Preparation of KNBTS master plan and project implementation in liaison with the Director.

5. Counter checking of LPOs and authorization of payment vouchers before A.I.E. holder certificate signed.

6. Supervision of non-technical staff.

7. Any other duties as may be assigned by the Director.

PRINCIPAL TECHNOLOGIST

Responsible to the Deputy Director

1. To provide technical guidance and supervision of laboratory services.

2. Standardisation and distribution of laboratory equipment and consumables.

3. Preparation of annual report on laboratory supervisers.

4. Supervision of all technical staff.

5. Any other duties as may be assigned.

SISTER IN-CHARGE

Responsible to the Assistant deputy Director

1. Coordination and supervision of blood donor services.

2. Recruitment of blood donors

3. Administration and supervision of blood donor personnel.

4. Any other duties as may be assigned.

ACCOUNTANT

Responsible to the Administrative Secretary

1. Responsible for all accountable matters in consultation with the Administrative Secretary.

2. Custody of all accountable documents.

3. Revenue collection and safe custody.

4. Imprest holder on behalf of the Director.

5. Preparation of financial statements, vote book control and returns.

6. Any other duties as assigned.

SUPPLIES OFFICER

Responsible to the Administrative Secretary.

1. Control of supplies functions including disposal of unserviceable stores in consultation with the Administrative Secretary.

2. Responsible for all stores documents, procurement, issues of LPOs and LSOs and initiation of payment of stores.

3. Preparation of all types of quotations in liaison with the Director, Administrative Secretary and Accountant.

4. Any other duties as may be assigned.

5. Any other duties as may be assigned.

BLOOD DONOR ORGANISER

Responsible to the sister in-charge

1. Shall be responsible for recruitment of donors.

2. Shall organise mobile sessions by providing transport, incentives refreshments for donors.

3. Shall keep a register of regular voluntary donors at each of the collection centres.

4. Any other duties as may be assigned.

BLOOD TRANSFUSION ACT

ARTICLE 1

The taking human blood for transfusion, the preparation and delivery of human blood or its plasma or their derivatives, are subject to this act.

Human blood, its plasma or their derivatives may be used only under medical supervision strictly for therapeutic medical and surgical purposes.

This rule is not, however, applicable to anti-microbe or anti-toxic sera of human origin.

ARTICLE 2

Human blood may be taken from the person concerned only with his free and conscious consent and without compensation and must be taken by or under the direction and responsibility of a doctor of medicine.

The following shall not be considered as compensation:

- Refreshments
- Replacement of nutritional factors
- Tests to ensure fitness to donate
- Free transport to an approved establishment under this act
- Post donation care
- time off without loss of pay

For all minors the consent of one of their parents or guardians shall be obtained before blood is withdrawn from them.

ARTICLE 3

i. The characteristics of human blood may not be modified before it is taken from the person concerned except by a doctor of medicine operating is approved establishments. Such modification may not be made except with the written consent of the voluntary donor, given after he has been warned in advance of the risks involved.

ii. Subject to article 3(i) above, persons possessing antibodies in their blood which may be used for the manufacture of blood grouping antisera, may have their antibody production enhanced by prior immunisation, before blood withdrawal, with appropriate blood antigens or blood group substances.

ARTICLE 4

Human blood, its plasma and their derivatives may be prepared only by a doctor of medicine or under his direction and responsibility and in establishments approved for this purpose.

A list of the said derivatives is fixed by order of the Minister for Health.

ARTICLE 5

The withdrawal of human blood, the preparation of fractions and sub-fractions, the processing of blood and blood products as well as their storage, distribution and supply may be effected only in establishments approved for this purpose in circumstances fixed by decree. These establishments shall together constitute the National Blood Transfusion Service.

The decree mentioned in the preceding paragraph shall fix the powers and responsibilities of these establishments, the rules of their organisation and their operating procedure.

ARTICLE 6

Human blood, its plasma and their derivations shall be deposited under the supervision of a doctor of medicine or blood transfuion technologist or pharmacist either in the establishments authorised to prepare them, or in hospitals and treatment centres approved by the Minister for Health.

Stable products may, however be deposited in pharmacy dispensaries.

A list of such products and the circumstances in which they may be deposited and preserved are to be fixed by an order of the Minister for Health.

ARTICLE 7

i. No substance, covered by this Act may be issued otherwise than on a doctor's prescription.

ii. No charge shall be made for the delivery of whole blood. The cost of processing, analysing or preserving blood and preparing derivatives shall be recoverable in the circumstances and at the rates fixed by order of the Minister for Planning, Economic and Finance and the Minister for Health and shall not occasion any profit.

iii. Whenever blood or blood products are administered the fee charged for administration, if a charge is made, must be separate from that the treatment given.

ARTICLE 8

The rules for taking, transfusing, preparing and preserving human blood, its plasma and their derivatives, and the standards of quality of human blood, its plasma and their derivatives, shall be enforced under the supervision of qualified individuals or corporate bodies appointed for this purpose by order of the Minister for Health.

ARTICLE 9

A National Blood Transfusion Commission is hereby ordered to be formed. Its composition, powers and responsibilities are fixed by order of the Minister for Health.

ARTICLE 10

Articles t, 6 and 8 of the present Act shall not apply to blood transfuion establishments responsbile o the Ministry of Defence. Procedure for cooperation between military and civilian blood transfusion establishments are fixed by a joint decree of the Minister for Defence and Minister for Health.

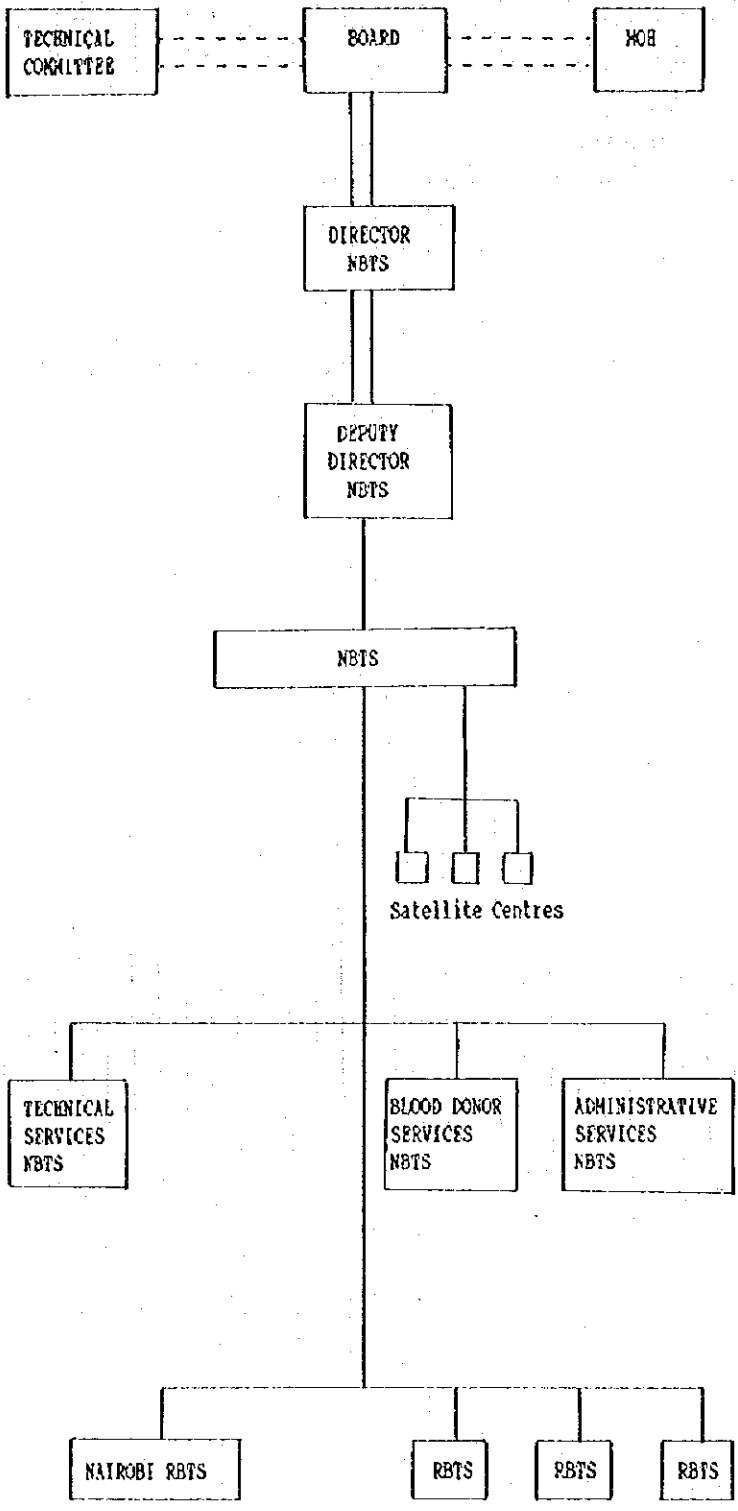
ARTICLE 11

Any infringement of this act or of the rules of its application shall be punishable by imprisonment for not less than six months and not more than twelve months and a fine of not less than w,000 Kenya shillings and not more than 10,000 Kenya shillings, or by both such imprisonment and such fine.

ARTICLE 12

The Minister for Health is charged with the execution of the present Act.

Appendix iv


TECHNICAL COMMITTEE
BOARD
MOH
DIRECTOR NBTS
DEPUTY DIRECTOR NBTS
NBTS
Satellite Centres
TECHNICAL SERVICES NBTS
BLOOD DONOR SERVICES NBTS
ADMINISTRATIVE SERVICES NBTS
NAIROBI RBTS
RBTS
RBTS
RBTS

附　属　資　料

① 協議ミニッツ
② ケニア側プロポーザル
KEMRI/JICA TECHNICAL CO-OPERATION PROJECT
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PROPOSED FOURTH PHASE
（JULY 1996 - JUNE 2001）
③ 短期専門家（AIDS 検査キット製作）報告書
④ RESEARCH AND CONTROL OF INFECTIOUS DISEASES
PROJECT 1990 - 1995
⑤ KENYA MEDICAL RESEARCH INSTITUTE
⑥ KEMRI NEWS - DECEMBER 1995
⑦ 外務省年次協議調査団に関する現地新聞記事
⑧ 現行フェーズ評価報告書抜粋
（但し、章番号は同評価報告書のまま）
a．調査結果要約
b．自立発展の見通し
c．評価結果総括
⑨ 調査団持帰り資料一覧

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① 協議ミニッツ

MINUTES OF THE MEETING

BETWEEN

THE JAPANESE PRELIMINARY STUDY TEAM

AND

THE AUTHORITIES CONCERNED OF THE REPUBLIC OF KENYA

ON

JAPANESE TECHNICAL COOPERATION

FOR THE

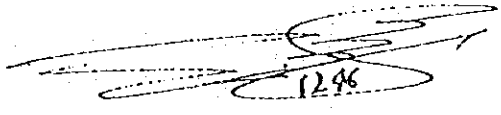
KEMRI/JICA INFECTIOUS DISEASES RESEARCH AND CONTROL PROJECT

4TH PHASE

IN KENYA

22ND - 27TH JANUARY, 1996

NAIROBI, KENYA　　JANUARY 26, 1996



THE MINUTES OF THE MEETING BETWEEN THE JAPANESE PRELIMINARY STUDY TEAM AND THE AUTHORITIES CONCERNED OF THE REPUBLIC OF KENYA ON THE JAPANESE TECHNICAL COOPERATION FOR THE KEMRI/JICA INFECTIOUS DISEASES RESEARCH AND CONTROL PROJECT - 4TH PHASE IN KENYA

The Japanese Preliminary Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Shunzo CHIBA, Professor of Paediatrics, Sapporo Medical University, Japan, visited the Republic of Kenya from 22 January, 1996 to 27 January, 1996 for the purpose of studying the proposed Technical Cooperation on the KEMRI/JICA Infectious Diseases Research and Control Project - 4th Phase in Kenya.

During their stay in the Republic of Kenya, the Team exchanged views and had a series of discussions with the Kenyan authorities concerned.

As a result of the study and the discussions, the Team and the Kenyan authorities concerned came to an agreement on matters referred to in the document attached.

Nairobi, January 26, 1996.

Dr. Shunzo CHIBA
Leader
Preliminary Study Team
Japan International Cooperation Agency
JAPAN

Dr. Davy K. KOECH
Director
Kenya Medical Research Institute
THE REPUBLIC OF KENYA

Prof. Karega MUTAHI
Permanent Secretary
Ministry of Research, Technical
Training & Technology
THE REPUBLIC OF KENYA

Mr. Donald B. KIMUTAI
Permanent Secretary
Ministry of Health
THE REPUBLIC OF KENYA

THE PERMANENT SECRETARY
MINISTRY OF FINANCE
P. O. Box 30007, NAIROBI

Mr. Benjamin K. KIPKULEI
Permanent Secretary
The Treasury
THE REPUBLIC OF KENYA

THE ATTACHED DOCUMENT

1. BACKGROUND OF THE PROJECT

In the third phase (1990-1995) of the Japanese Technical Cooperation with the Kenya Medical Research Institute (hereinafter referred to as "KEMRI"), focusing on schistosomiasis haematobium, filariasis, viral diarrhoea, viral hepatitis, and bacterial diarrhoea, the Project has contributed not only to KEMRI's research development but also to the improvement of the health status in the Republic of Kenya. The Project continued for a follow-up period of one year from April 1995 to April 1996.

In response to the request from the Government of Kenya for further collaboration on the Project, and based on the hitherto achievements of the Project and the priority health needs in Kenya, the Team studied the proposal of the next phase and both the Team and the Kenyan authorities concerned made the following recommendations:-

2. NAME OF THE PROJECT

KEMRI/JICA Infectious Diseases Research and Control Project - 4th Phase.

3. DURATION OF THE PROJECT

The duration of the Japanese Technical Cooperation would be five (5) years from July 1, 1996 to June 30, 2001.

4. OBJECTIVE OF THE PROJECT

To contribute towards the improvement of health status in the Republic of Kenya through strengthening of the research capability and development of human resources at KEMRI.

5. PURPOSE OF THE PROJECT

To contribute to and undertake sustainable research development in the following three (3) areas of the Project:-

1). HIV/AIDS

2). Acute Respiratory Infections (ARI)

3). Viral Hepatitis (VH)

6. PROJECT IMPLEMENTING AGENCY

Kenya Medical Research Institute (KEMRI).

7. RESPONSIBLE ORGANIZATIONS IN THE REPUBLIC OF KENYA

1). The Ministry of Research, Technical Training & Technology bears the overall responsibility for the successful implementation of the Project.

2). The Ministry of Finance bears the responsibility to meet the local running costs of the Project.

3). The Ministry of Health bears the responsibility for application and utilization of the research findings towards the improvement of the health status in Kenya.

4). The Director of KEMRI bears the direct responsibility for the smooth day-to-day operations of the Project.

8. ACTIVITIES OF THE PROJECT

The Team and the Kenyan authorities concerned reached an agreement on the tentative activities of the proposed Project. The final position of the planned activities will be defined in the Record of Discussion (R/D) to be signed in March or April, 1996.

9. GENERAL POLICY OF THE PROJECT

1). The three areas of the Project will be trans-centre and Institute based.

2). The technology transferred during the previous projects will be utilized in the Project.

3). Collaboration with the Ministry of Health, the University of Nairobi and other relevant institutions will be strengthened.

4). Degree training at local universities shall be promoted.

5). The use of facilities and equipment in KEMRI supplied through the Project shall be more centralized.

6). There shall be exchange of curriculum vitaes of Japanese experts and KEMRI counterparts.

7). The Technical Exchange Programme among other JICA projects in Africa will be promoted.

8). A P3 laboratory is indispensable for the research activities of the Project and its construction shall be considered.

9). The Project shall be monitored and evaluated on an annual basis.

10. MEASURES TO BE TAKEN BY THE KENYAN SIDE

The Kenyan side agreed to:-

1). Provide enough number of counterpart personnel on a full time basis to be trained by the Japanese experts within KEMRI and also in Japan, and to ensure that such personnel will continue to work for the Project within the collaboration period.

2). Provide adequate number of support staff (administrative staff, secretaries, drivers, etc).

3). Provide sufficient and suitable offices and laboratories for the Japanese experts.

4). Provide sufficient amount of budget for the implementation of the Project. The Kenya Government in particular commited itself to meet the following:-

a). Local personnel costs.

b). Operation costs (water, petroleum, electricity, postage, telephone, etc).

c). Field operations costs.

d). Maintenance of vehicles and equipment costs.

e). Field and laboratory related materials' costs.

5). Supply or replace machinery, equipment, instruments, vehicles, tools, spare parts and other materials necessary for the implementation of the Project other than those provided

by JICA.

6). Provide means of transport and travel allowance for the official travel of Japanese experts within the Republic of Kenya.

7). Meet expenses necessary for the transportation of the equipment within the Republic of Kenya as well as for clearance, installation, operation and maintenance thereof.

8). Exempt from custom duties, internal taxes and any other duties imposed in the Republic of Kenya the equipment provided by JICA.

9). Ensure that all research proposals and publications are approved by the relevant authorities.

10). Allow JICA Chief Advisor to attend the relevant KEMRI committees.

11). Do all else that is necessary for the smooth running of the Project.

11. MEASURES TO BE TAKEN BY THE JAPANESE SIDE

The Japanese side agreed to undertake the following:-

1). Recruitment of JICA Chief Advisor and Coordinator for the Project.

2). Dispatch of Japanese experts including those mentioned in (1) above.

3). Dispatch of Japanese Advisory Mission to Kenya in accordance with JICA programme.

4). Acceptance of Kenyan counterparts for training in Japan.

5). Provision of the necessary equipment for the Project within the available funds.

6). Support for training at local universities.

7). Support for attendance to relevant conferences subject to availability of funds.

8). Support towards Technical Exchange Programme in the African region.

9). Support towards organization of relevant in-country workshops and seminars.

10). Support in the strengthening of the library and information management system in KEMRI.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

② ケニア側プロポーザル

KEMRI/JICA TECHNICAL CO-OPERATION PROJECT

AGENDA AND PAPERS FOR DISCUSSION ON THE PROPOSED FOURTH PHASE (JULY 1996 - JUNE 2001)

NAIROBI 22ND - 26TH JANUARY 1996

Table of Contents

Programme of the visit to KEMRI by the Japanese Preliminary Survey Team to Discuss the 4th Phase of the KEMRI/JICA Project

Friday	19/1/96	9.00am	-	Dr. M. Yano arrives
		2.30pm	-	Dr. Yano meets the Hepatitis group.
Monday	22/1/96	9.55am	-	Prof. S. Chiba, Prof. T. Kurimura, Dr. Y. Kasahara & Mr. K. Miyoshi arrive.
		2.00pm	-	Courtesy call to JICA Office
		3.00pm	-	Courtesy call to Japanese Embassy
		4.00pm	-	Courtesy call to Director KEMRI
Tuesday	23/1/96	10.00am	-	Meet Chairman KEMRI Board of Management
		11.00am	-	Tour of KEMRI facilities.
		12.30pm	-	Lunch Break
		2.30pm	-	Courtesy call to Ministry of RTTT (PS)
		3.30pm	-	Courtesy call to Ministry of Health (DMS)
		7.00pm	-	Welcome Dinner by Director KEMRI
Wednesday	24/1/96	9.00am	-	Joint Meeting
		12.30pm	-	Lunch Break
		2.30pm	-	Joint Meeting
Thursday	25/1/96	9.00am	-	Joint Meeting
		12.30pm	-	Lunch Break
		2.30pm	-	Informal Consultations
Friday	26/1/96	11.30am	-	Signing of Minutes
		2.30pm	-	Meeting at JICA Office
		7.00pm	-	Dinner by Leader of the Survey Team.
Saturday	27/1/96	11.50pm	-	The Mission Departs

Agenda for the meeting between the Japanese Preliminary Survey Team and the KEMRI Team for discussion on the KEMRI/JICA Project (July 1996-June 2001) to be held on Wednesday and Thursday 24th and 25th January 1996 at 9.00am in the KEMRI HQs Board Room.

1. Apologies

2. Adoption of the Agenda

3. Welcome Remarks by Director KEMRI.

   Remarks by Leader of the Japanese Preliminary Survey Team

   Remarks by JICA Kenya Resident Representative

4. Background information on the proposed 4th phase of the Project (Annex 1)

5. Discussion on the Master Plan

   a) Dispatch of Japanese Experts (Annex 2)

   b) Provision of Equipment (Annex 3)

   c) Training of Counterparts (Annex 4)

   d) Administration of the Project (Annex 5)

   e) Contribution of the Kenya Government to the Project (Annex 6)

   f) Project Activities
      - Name of the Project (Annex 7)
      - General and Specific objectives of HIV, ARI and VH Programmes (Annex 7a)
      - Schedule of Project Implementation (Annex 7b)
      - Budget (Annex 7c)

   g) Project Monitoring and Evaluation Mechanism (Annex 8)

   h) Regional Collaboration (Annex 9)

6. Any Other Business

ANNEX 1

MINISTRY OF RESEARCH, TECHNICAL TRAINING AND TECHNOLOGY

Telegrams: "Scienceresh", Nairobi
Telephone: Nairobi 219420
Fax: Nairobi 223183
When replying please quote
Ref No. AS.01/13/Vol.VI/
and date

P.O. Box 30568
NAIROBI

5th January 96
..... 19.....

The Permanent Secretary,
Ministry of Finance,
Treasury,
NAIROBI.

For the attention of Mr. Nyanumba

REF: KEMRI/JICA MEDICAL RESEARCH PROJECT-APPLICATION FOR FOURTH (4TH) PHASE OF THE PROJECT (1996-2001)

The Kenya Medical Research Institute (KEMRI) has been receiving financial and technical assistance from the Government of Japan, through JICA, over the last sixteen years, since 1979. The third phase of the project expired in March 1995. The project is currently undergoing a one year follow-up period which will expire in March 1996.

The KEMRI/JICA Project has in a very special and unique manner made an immense and invaluable contribution not only to KEMRI's research development but also more profoundly to the improvement of the national health status. In terms of the scope of work coverage and the level of resources directed to the Project, the KEMRI/JICA Project is by far the largest collaborative Project in KEMRI.

KEMRI has made a proposal to JICA for a fourth phase of the Project to cover the period 1996 to 2001. JICA has tentatively agreed to the proposal subject to the usual inter-governmental formalities. Guided by the nascent most pressing national health priorities, the research focus in the fourth phase of the Project will be on HIV/AIDS, Acute Respiratory Infections (ARI) and Viral Hepatitis. JICA's support to KEMRI in research in these three areas will greatly enhance the National capability in the control and management of viral infections.

The purpose of this letter therefore, is to request you to please formally submit, on behalf of the Government, to the Japanese Embassy, our request and proposal for a fourth phase of the KEMRI/JICA Project to cover the period from 1996 to the year 2001. You may wish to note that in the past, the Project has been running from April to March (each of the five year phase), in line with the Japanese fiscal year but year but we would like it to run from July to June to harmonise our budgetary procedures with our financial year.

.../2

We enclose herewith copy of our proposal for the fourth phase of the project, an advance copy of which has already been forwarded to JICA.

Since we are already behind schedule, you are requested to please treat this as a matter of greatest urgency and importance.

With best regards.

BEN J. O. MAK'OSEWE

BEN J. O. MAK'OSEWE
FOR :PERMANENT SECRETARY

C.C.

The Director,
KENRI,
NAIROBI. For the attention of Mr. D.M.Ngumo

THE KEMRI/JICA PROJECT

PROPOSAL FOR THE FOURTH PHASE OF THE PROJECT TO COVER THE PERIOD FROM 1996 TO 2001

A. INTRODUCTION

One of the mandates of KEMRI is to co-operate and liaise with other relevant organizations and research bodies within and outside Kenya in the furtherance of its health research mission. KEMRI collaborates with a number of local and international organizations. Among the international organizations, the greatest collaborator to KEMRI, in terms of research coverage and level of resources directed to the collaboration, is the Japan International Co-operation Agency (JICA).

B. HISTORICAL GROWTH OF THE KEMRI/JICA PROJECT

The KEMRI/JICA Project dates back to the establishment of the Institute in 1979. The project is, therefore, as old as the Institute itself. The following are the past three phases of the Project:-

(1) Phase I - 1979-1984; Communicable Diseases Research and Control Project (CDRCP)

This concentrated on diarrhoeal diseases and schistosomiasis haematobium.

(2) Phase II - 1985-1990; Project of the Kenya Medical Research Institute

This focused on Virology (Viral diarrhoeal and viral hepatitis) parasitology (Schistosomiasis haematobium) and bacteriology.

(3) Phase III - 1990-1995; Research and Control of Infectious Diseases Project

The research fields were as mentioned under phase I above, with filariasis as the only additional field of interest. Research under this phase was multi-disciplinary in nature, incorporating public health education, clinical management and socio-economic aspects. There is a one year follow up (April 1995 - March 1996) to conclude activities of this phase of the Project.

C. FORMS OF SUPPORT TO KEMRI BY JICA THROUGH THE PROJECT

(1) Research collaboration

Since the inception of the Project in 1979, JICA experts have worked alongside KEMRI scientists in priority areas for improvement of health, particularly focusing on infectious diseases of major concern, in Kenya.

(2) Technology Transfer through JICA Experts

KEMRI has benefitted immensely from skills, knowledge and technology imparted by JICA experts to their KEMRI counterparts. This has helped to advance the technological capacity not only of the Institute but the country as a whole.

(3) Provision of Equipment and Research Materials

Over the years, JICA has supplied to KEMRI a wide range of modern research equipment and materials. This has helped in enhancing the Institute's technical and research capability.

(4) Training

One of the objectives of the Project is to support in human resources development in KEMRI. JICA has helped enormously in the training of KEMRI staff. This has helped in stepping up the Institute's trained manpower capacity and also in strengthening the Institute's research capability.

(5) Development of Research Facilities

One of the most important benefits to KEMRI from JICA is in the development of modern research facilities. Most of these facilities equal the best anywhere in the world. These include the KEMRI Headquarters and Central Laboratories Complex completed in 1985 at a cost of about Kshs. 400 million, the Center for Microbiology Research building constructed in 1982 at a cost of nearly Kshs. 5 million, and recently the Malindi Laboratory built at a cost of nearly Kshs. 3 million and the Kwale Laboratory and Staff House, built at a cost of over Kshs. 5 million. These developments have helped not only to uplift the research facilities in KEMRI, but also to strengthen the national medical research infrastructure.

D. CONTRIBUTIONS OF THE KEMRI/JICA PROJECT TO THE IMPROVEMENT OF THE HEALTH STATUS IN KENYA

The Project has made many major contributions of both direct and indirect impact to the improvement of the health status in Kenya. Some of the most outstanding contributions are as follows:-

1. Strengthening of the national health research capacity through training.
2. Strengthening of the national health research capacity through development of modern facilities for health research and the provision of research equipment and materials.
3. Technology transfer in health services and research through Japanese experts involved in the Project.
4. Enhancement of community awareness to disease prevention and control through community-oriented research programmes (such as the Kwale schistosomiasis Project).
5. Dissemination of useful data and information through publications, workshops and seminars for application in health care delivery services.
6. Immunization of new borns against hepatitis B.
7. Nationwide screening of transfused blood with KEMRI Hep cell kit developed locally.
8. Early diagnosis and treatment of hepatocellur carcinoma.

The KEMRI/JICA Project has made a tremendous impact in the improvement of the health status in Kenya and particularly in the management of infectious diseases.

To consolidate further the benefits of the Project, the Kenyan Government would like to request for a fourth phase of the KEMRI/JICA Project for the period 1996 to 2001.

E. THE PROPOSED AREAS OF RESEARCH UNDER THE FOURTH PHASE OF THE PROJECT

The KEMRI/JICA Project was evaluated by JICA sponsored External Evaluation Teams in August and October 1994. Among other observations made by these two teams, it was observed that there was need for a fourth phase of the Project to cover the period from April 1996 to June 2001, to focus research on HIV/AIDS, Acute Respiratory

Infections (ARI) and Viral Hepatitis. These three subjects were selected on the basis of the most demanding national health research priorities.

The selection of the three areas was based on the following justifications:-

1. HIV/AIDS

HIV infection which was first reported in Kenya in 1984 has reached epidemic levels whereby by 1995, over 800,000 individuals are estimated to be infected with the virus. The virus is spreading at an alarming rate and it is estimated that by the turn of the century, over 1.5 million Kenyans will have been infected. KEMRI has the national mandate to research and come up with solutions that the Ministry of Health can utilize to reduce and control the spread of this virus.

The proposed strategies for research on HIV/AIDS

(a) Molecular and epidemiological study of HIV infection in Western, Central and Coastal Kenya. Cohorts from these areas will be established to study:-
   i) Characteristics of the virus
   ii) Disease progression and clinical presentations
   iii) Opportunistic infections
   iv) Immunological parameters
   v) Impact of HIV on the 6 vaccine preventable diseases

(b) Development of diagnostic kits

(c) Investigation of anti-HIV substance in African indigenous medicinal plants

(d) Relationship between HIV infection and nutritional factors, intestinal parasites, malaria and respiratory infections

(e) Relationship between HIV infection and STDs

(f) Vertical transmission of HIV in Kenya

(g) Community-based health education for HIV infection

2. ACUTE RESPIRATORY INFECTIONS

Acute Respiratory Infections are rated second to malaria as the cause of morbidity and mortality in children. This accounts for 20% of all under five deaths. The causes of deaths are different in the neonatal period in which asphyxia, low birth weight, pneumonia and sepsis are the leading causes. ARI are the cause of 40-50% of paediatric

visits to outpatients facilities and 30-35% of hospitals admissions. With the increasing prevalence of HIV infection in infants and children, there will be a considerable increase in the incidence of respiratory infections, in particular pneumonia. KEMRI's main goal in ARI is to reduce morbidity and mortality from pneumonia in children through proper diagnosis and case management.

The proposed strategies for research on ARI

(a) Aetiology and basic molecular microbiological properties of causative agents.

(b) Development of rapid diagnostic kits

(c) Development of cost-effective management and treatment for ARI

(d) Drug resistance in ARI

(e) Malaria and ARI

(f) Establishment of bronchoscopical and cytological examinations for ARI

(g) Examination of micronutrient in ARI

(h) Community-based health education for ARI

3. VIRAL HEPATITIS

Research on viral hepatitis, another study area selected for the next phase is important in KEMRI's mandates for several reasons. Firstly, morbidity and mortality due to liver cancer in Kenya is on the rise and studies have shown a very strong correlation between this disease and hepatitis B virus infection whose prevalence in Kenya is 4%. Secondly, KEMRI has developed a diagnostic kit (KEMRI Hep Cell) for diagnosis of hepatitis B virus and this technology is currently being applied in all provincial hospitals. Thirdly, it is planned that this technology can be disseminated to the African region in order to reduce the transmission of this virus through blood transfusion.

The proposed strategies for research on Viral Hepatitis

(a) Epidemiology of hepatocellular carcinoma related to viral hepatitis.

(b) Early diagnosis of hepatocellular carcinoma.

(c) Intervention studies by incorporation of hepatitis vaccine in KEPI, screening all donated blood to prevent infection through blood transfusion and management of hepatocellular carcinoma.

(d) Widespread application of KEMRI Hep Cell Kit in Africa.

(e) Development of the Center for Hepatic Diseases in Kenya.

JICA's support to KEMRI in research in the three areas will greatly enhance KEMRI's capability and that of the Ministry of Health in the control and management of viral infections.

PROPOSAL FOR GRANT AID SUPPORT IN THE FOURTH PHASE OF THE PROJECT

The Kenyan Government requests the Japanese Government for Grant Aid support for the development of the following facilities:-

1 Molecular Biology and Virology (P3) Laboratory

The P3 laboratory will be used for isolation and characterization of the HIV virus and screening of plant products for antiviral activity. This type of work can only be performed in such a facility where the safety of the researchers is guaranteed. KEMRI currently does not have such a facility.

2. Training Facility Complex

This facility will be used as a:-

a) Centre of excellence in virology in the African region

b) Training of Kenya Medical Training College staff.

c) Training of University students towards MSc., MMed, and PhD.

d) Dissemination of technology acquired from Japan in the African region.

As KEMRI consolidates its research capacity, it also needs to strengthen its training capability to impart the gains of research to others.

KENYA GOVERNMENT COMMITMENT IN THE FOURTH PHASE OF THE PROJECT

The Kenya Government will be responsible for the following costs:-

(1) Local personnel costs

(2) Operational costs (water, electricity, postage and telephones etc)

(3) Field operations costs

(4) Maintenance of vehicles and equipment costs

A breakdown of the budget to be met by the Kenya Governmet over the five year period

(1996-2001) of the Project is attached.

H. SUSTAINABILITY OF THE PROJECT

The Kenya Government is fully committed to the successful implementation and the future sustainability of the project. The Kenya Government will in particular make financial allocations in its forward and annual budgets for the local running costs of the Project and also continually improve the terms and conditions of service to ensure the attraction and retention of qualified staff in the Project.

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KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840, Tel: (02) 722541, Fax: (02) 720030, Tlx. 25696 KEMRI, NAIROBI, Kenya.

Ref: BSRC/ADM/17 September 6, 1995

To: All Directors of Centres

Subject: Proposal outlines of the KEMRI/JICA Project (4th Phase)

Listed below are the proposed outlines we agreed on at the 17th KEMRI/JICA meeting held yesterday.

HIV/AIDS

1) Molecular and epidemiological study of HIV infection in western, central, and coastal Kenya.
   Cohorts from these areas will be established to study:-
   - Characteristics of the virus.
   - Disease progression and clinical presentations.
   - Opportunistic infections.
   - Immunological parameters.
   - Impact of HIV on the 6 vaccine preventable diseases.
2) Development of diagnostic kits.
3) Investigation of anti-HIV-substances in African indigenous medicinal plants.
4) Relationship between HIV infection and nutritional factors, intestinal parasites, malaria and respiratory infections.
5) Relationship between HIV infection and STDs.
6) Vertical Transmission of HIV in Kenya.
7) Community-based health education for HIV infection.

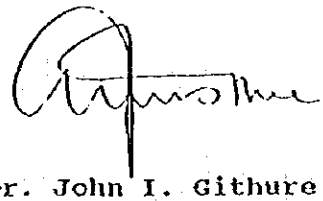
ARI

1) Aetiology and basic molecular microbiological properties of causative agents.
2) Development of rapid diagnostic kits.
3) Development of cost-effective management and treatment for ARI.
4) Drug resistance in ARI.
5) Malaria and ARI.
6) Establishment of bronchoscopical and cytological examinations for ARI.
7) Examination of micronutrient in ARI.
8) Community-based health education for ARI.

HEPATITIS

1) Epidemiology of hepatocellular carcinoma related to viral hepatitis.
2) Early diagnosis of hepatocellular carcinoma.
3) Intervention studies by incorporation of hepatitis vaccine in KEPI, screening all donated blood to prevent infection through blood transfusion and management of hepatocellular carcinoma.
4) Widespread application of KEMRI Hep Cell kit in Africa.
5) Development of the Center for Hepatic Diseases in Kenya .

You are reminded to submit your draft proposals to me on or before 15/9/95.



Dr. John I. Githure
KEMRI/JICA Project Coordinator

cc Director KEMRI
Prof Akai - KEMRI/JICA Project Team Leader.

ANNEX 2

PROJECT INPUTS SUMMARY
CRAFT
JAPANESE EXPERT
Year
ITEMS
1996
1997
1998
1999
2000
Chief Adviser
Coordinator
HIV/AIDS Diagnostic Kits Development
Hepatitis
Hepatocellular Carcinoma
PCP/HIV/AIDS
JUN/AUG
MEDICINAL PLANT/HIV/AIDS
DEC/FEB
MOLECULAR EPIDEMIOLOGY/HIV/AIDS
MAR/MAY
ANTI-VIRUS AGENTS/HIV/AIDS
APR
SEPAM RANK/HIV/AIDS
JUL
BRONCHOSCOPY/API
SEP/DEC
BACTERIOLOGY/API
JAN/MAR
HEPATOCELLULAR CARCINOMA/VH
APR/SEP
VIRAL HEPATITIS/VH
APR/SEP
DIAGNOSTIC KITS PRODUCTION/VH
OCT/APR

ANNEX 3

業務計画付属書3-⑥

プロジェクト

(HIV-1)

番号	機材名	仕様	メーカー名	数量	見積	価格	所管課	備考
1	Capirally Electrophoretsis Equipment.	P/ACE 5510 DAD complete with P/ACE 5510 DAD w/computer/printer	BECKMAN	1	Ks 4,152,401.00	Ks 4,152,401.00		Ex factory
		477173 P/ACE 5510 w/Cooled Samples Tray/diode Array Detector	BECKMAN	1				
		477163 DAD Software PAK	BECKMAN	1				
		338451 Precut Capillary	BECKMAN	1				
		338453 Precut Capillary	BECKMAN	1				
		338431 Consumable Kit	BECKMAN	2				
		338437 eHRe Capillary Test Kit	BECKMAN	1				
		359976 Fluoranele Fl 450ml Cool	BECKMAN	1				
		359980 Autosampler Kit	BECKMAN	1				
		33000513 IBM Advance Computer Data Station	BECKMAN	1				
		23099902 Demo-English	BECKMAN	1				
		33430081 Epson FX-870	BECKMAN	1				
		33010018 Paper, PK2000 12" PX/MX80	BECKMAN	5				
		33010017 Epson Ribbon FX-80/85 LX-850	BECKMAN	2				
2	Low Pressure Chromatography		PHARMACIA BIOTEC	1	Ks 790,075.00	Ks 790,075.00		
		18-1993-01 Gradifrac Fraction Collector	PHARMACIA BIOTEC	1				
		19-1993-05 Chromatography Rack	PHARMACIA BIOTEC	1				
		19-4610-02 Peristaltic Pump P-1 (220V)	PHARMACIA BIOTEC	1				
		18-1003-66 UV-1 Monitor	PHARMACIA BIOTEC	1				
		19-2504-02 Flow Cell, 10mm	PHARMACIA BIOTEC	1				
		19-2433-01 Filter Kit 280nm	PHARMACIA BIOTEC	1				
		18-1001-43 Recorder REC-102	PHARMACIA BIOTEC	1				
		18-1001-44 1 Chart Paper, 1 Roll of 25M	PHARMACIA BIOTEC	10				
	計				4,942,476.00			

(HIV-2)

(1 式)

番号	品名	仕様	メーカー名	数量	単価	金額	摘要
		19-6700-01 Mixer GP 250	PHARMACIA BIOTEC	1			
		19-1996-01 Valve IV-7	PHARMACIA BIOTEC	1			
		18-5897-01 Sample Loops 1 ml, 2ml	PHARMACIA BIOTEC	1			
		17-1166-01 Hiprep 16/60 Sephacryl S-200 HR(17-1073-01)	PHARMACIA BIOTEC	1			
		17-1167-01 Hiprep 16/60 Sephacryl S-300 HR(17-1074-01)	PHARMACIA BIOTEC	1			
		17-1064-01 Hiload 16/10 Q Sepharose HP	PHARMACIA BIOTEC	1			
		17-1137-01 Hiload 16/10 SP Sepharose HP	PHARMACIA BIOTEC	1			
		18-8774-01 Column XK 16/40	PHARMACIA BIOTEC	1			
		18-8775-01 Column XK 16/70	PHARMACIA BIOTEC	1			
		18-1000-72 XK 26/20 Incl. One AK Adapter	PHARMACIA BIOTEC	1			
		18-8768-01 Column XK 26/40	PHARMACIA BIOTEC	1			
		10-0700-01 Pack Reservoir RK 10/20	PHARMACIA BIOTEC	1			
8	Refrigirated Centrifuge	1-02551-05 Refrigerated Universal Centrifuge 240V, 50Hz	COLE PALMER	1	Ks 412,500.00	Ks 412,500.00	
17	Co2 Incubator	P0620-5371 Model C027, 153lt, 623x680x855mm, 50 deg.C	NB SCIENTIFIC	1	Ks 242,000.00	Ks 242,000.00	
18	Eppendorf Centrifuge	5FC-120-0100 Cap. 4x100ml, 8000rpm, F/cupel, 220-240V 50-60Hz	EPPENDORF	1	Ks 44,811.00	Ks 44,811.00	
19	Inverted Microscope	MIRB/E Transmitted light for tissue culture	KAPPA/GERMANY	1	Ks 302,500.00	Ks 302,500.00	
20	Microscope Ordinary	MIC-700-0104 Built in 6V 20W Halogen lamp, 220-240V,50/60Hz	LEICA	1	Ks 126,830.00	Ks 126,830.00	
		250x200x270mm, Mass 5Kg Highpoint Periplan eyepiece x10/18					
		計				1,128,641.00	

プロジェクト

番号	機材名	仕様	メーカー名	数量	見積書作成				備考
22	ELISA Reader (MR7000)	DL2000 Fully automatic, single/dual wave length w/printer	DYNATECH LAB	1	Ks	385,000.00	Ks	385,000.00	
		and five (5) filters, 240V, 50Hz							
23	ELISA Washer	AM565 Automatic, Washes Plates or Strips, 50 - 450ul No. of	DYNATECH LAB	1	Ks	220,000.00	Ks	220,000.00	
		wash/aspirate cycle: 1-9							
26	Portable Autoclave	No. 302-0700/00 Die cast aluminium 15ltrs 1850W	MERCK	1	Ks	99,000.00	Ks	99,000.00	
42	Thermal Cycler	BLD-200-010X 4 to 99 deg C. 330x350x210mm Model SPCR1	STUART SCIENTI	1	Ks	123,750.00	Ks	123,750.00	
45	Electrophoresis	Submarine Minigel	SIGMA	1	Ks	22,000.00	Ks	22,000.00	
47	Eppendorf Centrifuge	H7282 Non Refrigerator 5415C (SIGMA)	SIGMA	1	Ks	170,500.00	Ks	170,500.00	
48	Polaroid Camera	DS-34 Direct Screen Hand-Held	SIGMA	1	Ks	55,000.00	Ks	55,000.00	
			SIGMA	1					
50	Liquid Nitrogen Containers	1) 3 for 180ltrs, 2) 5 for 50ltrs	SIGMA	1	Ks	110,000.00	Ks	110,000.00	
100	Wash Bottle 250ml	WBS-660-0250 Narrow neck, Pack/5	SACO	4	Ks	338.25	Ks	1,353.00	
144	Microplate Washer	72-376401	BDSL	1	Ks	150,500.00	Ks	150,500.00	
147	Microplate Incubator & Shaker	AM80E Shaker Incubator variable speed	DYNATECH	1	Ks	110,000.00	Ks	110,000.00	
149	4 Plate Platform (Rocker)	P100-ROTATEST 406x311x165mm,	LAB INSTRUMENT	1	Ks	2,750.00	Ks	2,750.00	
01	FACScount	No. 340098870 Measure absolute CD4/CD8/CD3 Reagent Kit	BECTON DICKINS	1	Ks	1,897,500.00	Ks	1,897,500.00	
	Accessories for above (01)	No. 340167 Reagent Kit, 50 Tests	BECTON DICKINS	1	Ks	33,000.00	Ks	33,000.00	
03	High Speed Refrigerated Centri	Himac CR 26H (Centrifuge)	HITACH	1	Ks	2,850,000.00	Ks	2,850,000.00	
06	Gel Electrophoresis Systee	N030-2774 , 100g/Bottle	PERKIN ELMER	2	Ks	8,525.00	Ks	17,050.00	
		N030-2107, 'Minnie the Gel-Cicle' Agarose Gel System	PERKIN ELMER	1	Ks	13,585.00	Ks	13,585.00	
		N030-2109, Gel Casting Tray	PERKIN ELMER	1	Ks	1,650.00	Ks	1,650.00	
		N030-2100, Gel Running Plate	PERKIN ELMER	1	Ks	1,650.00	Ks	1,650.00	
		N030-2110, Gel Comb 8 teeth, 1.0mm	PERKIN ELMER	1	Ks	1,320.00	Ks	1,320.00	
		31						7,274,608.00	

(HIV-4)

プロジェクト

番号	機 材 名	仕 様	メーカー名	数量	見積金額		備考
					0,000,000.00		
		N930-2111 Gel Comb 12 teeth, 1.0mm	PERKIN ELMER	1	Ks 1,320.00	Ks 1,320.00	
		N930-1374 Gel Comb, 8 teeth, 1.5mm	PERKIN ELMER	1	Ks 1,320.00	Ks 1,320.00	
		N930-1375 Gel Comb 12 teeth, 1.5mm	PERKIN ELMER	1	Ks 1,320.00	Ks 1,320.00	
		N930-2112 Gel Comb Back, with Screws	PERKIN ELMER	1	Ks 995.00	Ks 995.00	
10	Deionized Water System	WL105-6	BECKMAN	1	Ks 207,900.00	Ks 207,900.00	
	Accessories for Above (11)	WL160-10 Deionizer Unit ADH	BECKMAN	1	Ks 16,335.00	Ks 16,335.00	
		WL164-08 Disposible Cartridge ADI pack/3	BECKMAN	1	Ks 11,825.00	Ks 11,825.00	
13	Solid Co2 Dry Ice Maker	IC410-25 30 pellets 500gm	SNOPARK	1	Ks 18,370.00	Ks 18,370.00	
14	Liquid Scintillation Counter	Model DPM/PSA System 1411-001 900x700x600m, 105Kg w/Printer	WALLAC	1	Ks 2,200,000.00	Ks 2,200,000.00	
21	ELISA Reader	73-5110050 Multiskan MS no internal Printer, Inclusive of	ADGL	1	Ks 302,500.00	Ks 302,500.00	
		Filter wheel w/3 standard filter: 405,450 & 492					
06	PCR-Thermal Cyler	Cat No. PTC-100-96	MJ RESEARCH	2	Ks 219,725.00	Ks 439,450.00	
08	Electorphoresis Unit	Cat. No.E0638 Submarine Gel	SIGMA	7	Ks 16,080.00	Ks 98,560.00	
09	Power Supply	Cat. No. Z25, 691-3 IBI Model MBP 300	SIGMA	2	Ks 24,112.00	Ks 72,336.00	
10	UV Transilluminators	Cat. No. T2201 UV (10 x 2)) P/Supply 220, 50Hz	SIGMA	2	Ks 79,277.50	Ks 160,555.00	
12	pH Meter	Cat. No. Z25, 110-5 HANNA HI9025	SIGMA	2	Ks 25,905.00	Ks 51,810.00	
14	Nucleic Acid Sequencing Unit	Cat. No. Z25, 185-7 33 x 52cm (w x h) Gel size	SIGMA	2	Ks 65,295.00	Ks 196,185.00	
19	Gel-Sealing Tape	Cat. No. T6781 (1 x 72 yds)	SIGMA	3	Ks 1,000.00	Ks 3,000.00	
22	Autoclave Steriliser	Cat. No. 14-505-24 (cap. 0,8 Cubic feet)	FISHER	1	Ks 230,395.00	Ks 230,395.00	
24	Precision Balance	Cat. No. B2155	SIGMA	1	Ks 74,250.00	Ks 74,250.00	
25	Fridge/Freezer	Cat. No. 9050-150	THOMAS	1	Ks 50,840.00	Ks 50,840.00	
26	Fume Hood	Cat. No. 5165-M22 (Blower Capacity 960CFM, Sweight 400lb)	THOMAS	1	Ks 326,150.00	Ks 326,150.00	
27	Shaker Water Bath	Cat. No. 540-40 Generic Research Instrumentation	GRI	1	Ks 110,000.00	Ks 110,000.00	
21						4,580,256.00	

(HIV-5)

プロジェクト

番号	機材名	仕様	メーカー名	数量	見積金額				備考
					0,000,000.00				
28	High Centrifuge Refrigerated	Cat. No. CR6000 Temp. 5 to 40 deg C. Plus Rotors C/N3507.240V	GRI	1	Ks	330,000.00	Ks	330,000.00	
		Max. Speed =6000rpm. Vol. =4x100ml. 13amp single phase							
29	DNA Sequencer	09-18-1033-13 Alf Express. System 1. Includes 1 Standard &							
		1 Short Gel Cassette. Alf manager 3.0 Control/Accessories	BOSI	1	Ks	3,491,042.50	Ks	3,491,042.50	
31	DS.34 Camera	GRI Gel	GENETIC RESEAR	1	Ks	275,000.00	Ks	275,000.00	
	Photographic Hood	(C/N 616172-120x1055)	GENETIC RESEAR	1	Ks	385.55	Ks	385.55	
32	Gel Documentation System	Cat. No. DGS5000	GENETIC RESEAR	1	Ks	55,000.00	Ks	55,000.00	
33	Developing Tank	Cat. No. 00792	SIGMA	1	Ks	38,500.00	Ks	38,500.00	
35	Rapidry Gel Dryer	Cat. No. AE.3750 Genetic Research Instrumentation	GRI	1	Ks	55,000.00	Ks	55,000.00	
36	Magnestic Stirrer	Cat. No. 364-968 Curtin Matheson	CURTIN MATHESO	1	Ks	16,940.00	Ks	16,940.00	
37	Multichannel Pipette	Cat No. 272-930 Curtin Matheson	CURTIN MATHESO	1	Ks	32,560.00	Ks	32,560.00	
		計						4,294,428.05	

[illegible] 3-⑥

プロジェクト

(HIV-6)

番号	機材名	仕様	メーカー名	数量	見積価格				備考
05	PCR Thermal Cycler	Cat. No. PTC-100-96	MJ RESEARCH	2	Ks	219,725.00	Ks	439,450.00	
06	Electrophoresis Unit Submarine	Cat. No. E0638 Mini-Gel	SIGMA	3	Ks	14,080.00	Ks	42,240.00	
07	Power Supply	Cat. No. Z25,691-3 IBI Model MBP 300	SIGMA	3	Ks	24,182.50	Ks	72,550.50	
08	pH Meter	Cat. No. Z25,110-5 HANNA HI 9025	SIGMA	2	Ks	25,905.00	Ks	51,810.00	
01	Inverted Microscope	MIC-800-010P DM IL outfit for phase contrast. 350x108x450mm	FISHER	1	Ks	211,090.00	Ks	211,090.00	
	Accessories for Above	MIC-804-500U Slide to Accept Relief Contrast PTC segments	FISHER	1	Ks	4,400.00	Ks	4,400.00	
		MIC-804-510R Relief Contrast PTC segments	FISHER	1	Ks	11,000.00	Ks	11,000.00	
02	Fluorescent Microscope	MIC-600-030C 526 Photo System x 0.67 to 4.0 zoom w/CCTV	FISHER	1	Ks	105,380.00	Ks	105,380.00	
06	Fraction Collector Model 2111	Multi Rac LKB	LKB	1	Ks	1,375,000.00	Ks	1,375,000.00	
	Accessories for Above (06)	Cat. No. LKB 2065 Recorder 6-Channel		1					
		Cat. No. LKB 2138 UV Detector/Monitor UVICORDS		1					
		Cat. No. LKB 2115 Multiperpex . Peristaltic Pump		1					
07	Gradient Mixer	MPR-460-030C Tilting tube roller, 10 rollers	STUART SCIENTI	1	Ks	23,925.00	Ks	23,925.00	
13	Separation Columns	No. 2137-016 Column Kit, Column 2136-011 A2136-025	LKB	1	Ks	440,000.00	Ks	440,000.00	
18	Vacuum Pump	PVR-580-011J P x 10 Sq. 3m Cube/hr.	FISHER	2	Ks	23,925.00	Ks	71,775.00	
19	Cold Cabinet	RFP-400-020C Model UR27V	FISHER	1	Ks	22,550.00	Ks	22,550.00	
23	Water Distillation Apparatus	WGS-921-020C	FISHER	1	Ks	107,250.00	Ks	107,250.00	
32	Dessicator	DES-250-070C Vacuum Pattern, Borosilicate Glass w/stopcock	FISHER	2	Ks	6,820.00	Ks	13,640.00	
34	Autoclave Machine	AUX-480-010A Electrically heated vertical autoclave w/low	FISHER	1	Ks	265,925.00	Ks	265,925.00	
		cut-out adjustable temp. A Time Control, Pressure gauge							
01	Culture Dishes	C6421 60 x15mm Treated Surface Area, Case/500	SIGMA	10	Ks	6,221.00	Ks	62,210.00	
16	L-Malic Acid	M1000 /500g	SIGMA	1	Ks	6,765.00	Ks	6,765.00	
04	Freeze Dryer System	F10101000 Modulyo 4K Freezer Dryer 220/240V 1 PH 50Hz	SCIENTRONIC	1	Ks	183,480.00	Ks	183,480.00	
	計							2,571,940.50		

_____プロジェクト

番号	機械名	仕様	メーカー名	数量	単価		金額		備考
		F0568000 Drum manifold (16ports with 16 3/4" Rubber Valves.	SCIENTRONIC	1	Ks	67,375.00	Ks	67,375.00	
		F05632000 Acrylic Lid required							
		F05632000 Acrylic Lid fused with Drum manifolds F05621000 &	SCIENTRONIC	1	Ks	18,150.00	Ks	18,150.00	
		F05628000 also Acrylic Cylinder F05652000							
01	Refrigerated Centrifuge	L-02551-05 Refrigerated Universal Centrifuge 240V, 50HZ	COLE PALMER	1	Ks	412,500.00	Ks	412,500.00	
02	Bench Top Centrifuges	CEK-157-010V Mitral 2000 mse	FISHER	2	Ks	165,000.00	Ks	165,000.00	
03	Vortex Mixture	SGP-202-010J	FISHER	1	Ks	11,000.00	Ks	11,000.00	
04	Magnetic Stirrer	SWT-365-010R Stuart Scie SMS	FISHER	1	Ks	22,000.00	Ks	22,000.00	
06	Freezer -20 Deg. C	RFT-270-010R Model HOF-USR1 upright	FISHER	1	Ks	440,000.00	Ks	440,000.00	
07	Water Bath	BLE-12--050J Model SUB14 Grant	FISHER	1	Ks	110,000.00	Ks	110,000.00	
09	Coulter Counter		COULTER COUNTE	1	S	1,210,000.00	Ks	1,210,000.00	
26	Analystical Balance	0.1g to 200g	UNIVERSAL PHAR	1	Ks	27,000.00	Ks	27,000.00	
27	Incubator	P0620-5371 Model C027, 153ltr 623 x680x855 50 deg C	NB SCIENTIFIC	1	Ks	69,252.75	Ks	69,252.75	
32	Blood Gas Analyser compact-1	Nimikan Ltd	LOCAL	1	Ks	1,716,740.10	Ks	1,716,740.10	
33	Blood Gas Analyser AVL 995Mb	Nimikan Ltd	LOCAL	1	Ks	3,451,214.40	Ks	3,451,214.40	
	計							7,714,333.25	

プロジェクト

番号	機材名	仕様	メーカー名	数量	見積金額		調達先国	備考
01	Thermocycles	Takara TP3200		2	Ks 655,500.00	Ks 1,311,000.00		
02	Electrophoresis Equipment	Mupid 0-2		4	Ks 17,400.00	Ks 69,600.00		
03	Dark Room	King/Assembly set		1	Ks 50,500.00	Ks 50,500.00		
04	DNA Synthesis	OLIGO 1000 (No.607001		1	Ks 1,425,000.00	Ks 1,425,000.00		
05	Clean Bench	PCV-1303 BNG (No. 01-1006) (SANSYO)		2	Ks 565,000.00	Ks 1,130,000.00		
06	Saftey Cabinets	SCV-1304 EC118 (MP-109Y)		2	Ks 932,500.00	Ks 1,865,000.00		
07	Microplate Reader	L-5111717		1	Ks 1,450,000.00	Ks 1,450,000.00		
08	Microplate Washer	Model 1250 No. 1706680 (BIO-RAD) Immuno washer	BIO-RAD	1	Ks 380,000.00	Ks 380,000.00		
09	Shaker	MK2000 (232182)		1	Ks 127,500.00	Ks 127,500.00		
10	IF Microscope	PM-2-RFCA (OLYMPUS)	OLYMPUS	1	Ks 1,165,000.00	Ks 1,165,000.00		
11	Ultra Centrifuge	HRX-152 TOMY	TOMY	1	Ks 395,000.00	Ks 395,000.00		
12	Centrifuge	PI-101 (TOMY)	TOMY	1	Ks 225,000.00	Ks 225,000.00		
13	Freezer -20 Degrees	MDF-V53A (SANYO)	SANYO	1	Ks 185,000.00	Ks 185,000.00		
14	Refrigerator	MPR-411FR (SANYO)	SANYO	1	Ks 220,000.00	Ks 220,000.00		
15	Deep freezer -80 degrees	DF-430LM		1	Ks 2,300,000.00	Ks 2,300,000.00		
16	Co2 Incubator	MCO-175 (SANYO)	SANYO	1	Ks 525,000.00	Ks 525,000.00		
17	Dry Incubator	MIR-162 (SANYO)	SANYO	1	Ks 100,000.00	Ks 100,000.00		
18	Autoclave	MLS-3020 (SANYO)	SANYO	1	Ks 237,500.00	Ks 237,500.00		
19	Water Bath	BW200		2	Ks 95,000.00	Ks 190,000.00		
20	DNA Sequencer	ABI 377	ABI	1	Ks 9,750,000.00	Ks 9,750,000.00		
計						Ks 23,161,100.00		

番号	機械名	仕様	メーカー名	数量	見積金額			
							交換部品	備考
01	Broncho-fiberascope for Adults	Instru Channel 2mm, Direction view 0, Angle 110,54cm, 005,0mm	KARL STORZ	1	Ks 399,000.00	Ks 399,000.00		
	2707788 Case							
	11001 KL Biopsy forceps,	Double action jaws, flexible 1,7mm, length 120cm						
	11002 KS Grasping forceps	Double action jaws, flexible 1,7mm length 120cm						
	11025 E Pressure Compensation	Cap for ventilation during gas sterilization						
	13242 XL Leakage Tester	with bulb and manometer						
	27651 B Cleaning Brush	flexible for 2mm instrument channel						
	13272 Mouth Piece							
02	495 NB Fiber Optic Light Cable	Size 4,8mm, length 180cm	KARL STORZ	1	Ks 20,748.00	Ks 20,748.00		
03	10434 C Hurly Irrigator and	Aspirator; including 11013 Silicone Suction Tube with LUER	KARZ STORZ	1	Ks 9,006.00	Ks 9,006.00		
04	110200 Ventilation Attachement	disposable for use with tracheal catheter Pack/10	KARL STORZ	1	Ks 7,524.00	Ks 7,524.00		
05	11078S Brush for Cytology	with handle 13266H and tube 11007S	KARL STORZ	1	Ks 4,006.00	Ks 4,006.00		
06	11007E Brush		KARL STORZ	1	Ks 13,110.00	Ks 13,110.00		
07	11007S Tube	for Brush 11007BS	KARL STORZ	1	Ks 5,814.00	Ks 5,814.00		
08	13266H Handle		KARL STORZ	1	Ks 1,266.00	Ks 1,266.00		
09	11008 Suction Catheter,	1,7mm with connector 10479A	KARL STORZ	1	Ks 888.00	Ks 888.00		
10	11008E Catheter, 5 Fr.,	without connector 10479A, for 11008	KARL STORZ	1	Ks 221.80	Ks 221.80		
11	10479F Adapter for Suction	Catheter, 10468D/10478D	KARL STORZ	1	Ks 288.00	Ks 288.00		
12	Paediatric Broncho-Fiberscope	Worklength 54cm, O.D. 3,7mm	KARL STORZ	1	Ks 383,040.00	Ks 383,040.00		
13	9265S Color Monitor	Color system PAL, MTBC screen 26cm P/S 100-240VAC, 50/60Hz	KARL STORZ	1	Ks 172,214.00	Ks 172,214.00		
		A00A Main Card						
26	Autoclave	AUX-900-020P Midas 55L Autoclave, 100-130 deg C, 220-240V, 50Hz	ELSONIS	1	Ks 847,450.00	Ks 847,450.00		
		計				1,865,299.80		

プロジェクト

番号	機 械 名	仕 様	メーカー名	数量	見積金額		摘要	備考
01	Autoclave	Cat. No. 285-581 STME-L	CMS	1	Ks 527,850.00	Ks 527,850.00		
02	Balances	Cat. No. 289-275 TP4005 Electronic	CMS	1	Ks 79,750.00	Ks 79,750.00		
03	Centrifuges (Refrigerated)	Cat. No. 2520-540 SPBR	THOMAS SCIENTI	2	Ks 286,875.00	Ks 573,750.00		
06	Freezer & Accessories	023-411 -86 Deg.C Sanyo	FISHER	1	Ks 400,350.00	Ks 400,350.00		
07	Electrophoresis Machine	Cat. No. 4312-110 EC1001	THOMAS SCIENTI	1	Ks 202,575.00	Ks 202,575.00		
08	Fridges	Cat. No. 314-838 2 Door Glass	CMS	1	Ks 359,125.00	Ks 359,125.00		
		Cat. No. 13-988-326c	FISHER	1	Ks 242,250.00	Ks 242,250.00		
09	Hoods	Cat. No. 5165-K22 Protector THAR	THOMAS SCIENTI	2	Ks 468,350.00	Ks 468,700.00		
10	Incubators	Cat. No. 299-768 Equatherm	CMS	1	Ks 865,640.00	Ks 865,640.00		
		Cat. No. 6119-065 6Ltr	THOMAS SCIENTI	1	Ks 302,575.00	Ks 302,575.00		
12	Ordinary Microscope	MIC-700-010A Build in 6V Halogen lamp, 220-240V, 50/60Hz	LEICA	1	Ks 126,830.00	Ks 126,830.00		
20	Water Bath	735, 769-7 5.5ltr	SIGMA	1	Ks 38,445.00	Ks 38,445.00		
21	Microcentrifuge	Cat. No. M7157	SIGMA	1	Ks 75,817.50	Ks 75,817.50		
25	Liquid Nitrogen Cylinder	East African Oxygen	LOCAL	1	Ks 42,500.00	Ks 42,500.00		
26	Carbon Dioxide Cylinders	East African Oxygen	LOCAL	1	Ks 42,500.00	Ks 42,500.00		
31	Cool Boxes	Model S-460 Cap : about 25lts	DAIWA	3	Ks 25,500.00	Ks 76,500.00		
31	Distiller (Complete with	Components parts and accessories	CMS	1	Ks 562,550.00	Ks 562,550.00		
32	ELISA Reader	MR7000 Fully Automatic Single/Dual Wavelength with printer	DYNATECH	1	Ks 412,500.00	Ks 412,500.00		
		5 filters 410,450,490, 570,630nm						
						9,402,207.50		

(VE-1)

プロジェクト

番号	機械名	仕様	メーカー名	数量	見積金額		摘要
01	PCR Equipment	GeneAmp 9600 Elmer Thermocycler Cat. No. 09-N801-002	PERSL	1	Ks 892,750.00	Ks 892,750.00	
		Microfuses T8911 pack/500	PERKIN ELMER	5	Ks 4,400.00	Ks 4,400.00	
		Microphoresis Equipment - Power supply unit	PERKIN ELMER	1			
		Electrophoresis Tank	PERKIN ELMER	1			
		Gel Carriage	PERKIN ELMER	2			
		Gel Punch Carriers	PERKIN ELMER	2			
		DTU Dry Thermo-Unit (37 deg c & 65 deg C)	PERKIN ELMER	1			
		Vacuum Dryer with Pump	VORTEX MIXER	1			
		Oven OVL-570-010J 31ltr. 220-240V. 50-60HZ	FISHONS	1	Ks 144,000.00	Ks 144,000.00	
		Polaroid Camera DS-34 Direct Screen Hand-Held	SIGMA	1	Ks 9,000.00	Ks 9,000.00	
		UV Transimullator (UPV, Inc)		1			
		Polaroid films		1			
計						1,051,150.00	

(別紙付属資料-A)

プロジェクト

PROCUREMENT IN JAPAN (VH-2)

番号	機材名	仕様	メーカー名	数量	見積金額			
							[illegible]	備考
01	Ultrasound Equipment	Aloka SSD 500 Convex UST 934N 3.5		1	Ks 2,000,000.00	Ks 2,000,000.00		
02	Micro Convex	UST-9448-3.5		1	Ks 789,473.70	Ks 789,473.70		
03	Echo Copier	SSZ-307		1	Ks 125,263.20	Ks 125,263.20		
04	Recording Paper	5 in each box		10	Ks 6,315.80	Ks 63,158.00		
05	Gene Amp PCR System	ROCHE 9600R		1	Ks 978,947.40	Ks 978,947.40		
06	Small Fridge Centrifuge	(Rapid Freezing) HITACHI CF150	HITACHI	1	Ks 398,947.40	Ks 398,947.40		
07	Untrapped Power Supply Unit	Stabilized Current) Cosmobile No. 3115 (1500V, 200mA		1	Ks 84,210.50	Ks 84,210.50		
08	Electrophoresis Gel Photoset	TUCHI	TUCHI	1	Ks 255,421.10	Ks 255,421.10		
09	Transilluminator (Ultra-Violet	TUCHI	TUCHI	1	Ks 197,894.70	Ks 197,894.70		
10	Flat Agarose Gel	(Electrophoresis Tab) IWAKI EPM-8420	IWAKI	1	Ks 44,736.80	Ks 44,736.80		
11	Personal Centrifuge	Japan Silopolia Limited XX42 CF060	JAPAN SILOPOLI	1	Ks 22,105.30	Ks 22,105.30		
12	Gene Amp DNA amplification Kit	Takara PJ5100	TAKARA	3	Ks 52,631.60	Ks 157,894.80		
13	Reverse Transcriptase	BRL (8025A)	BRL	20	Ks 15,789.50	Ks 315,790.00		
14	Random Primer	Takara (3801)	TAKARA	20	Ks 6,842.10	Ks 136,842.00		
15	Ribonuclease Inhibitor	Takara (2310A)	TAKARA	20	Ks 9,473.70	Ks 189,474.00		
16	Taq DNA Polymerase	Takara (2531)	TAKARA	20	Ks 22,105.30	Ks 442,106.00		
17	Nusieve GTG Agarose	Takara (5190P)	TAKARA	10	Ks 28,421.05	Ks 284,210.50		
18	Gene Amp DNA Amplification	Takara (PJ5100)	TAKARA	10	Ks 52,631.60	Ks 526,316.00		
19	Tubes for PCR 9600 with caps	Japan ROCHE 0.2ml 1000pcs.per box	ROCHE	10	Ks 26,315.80	Ks 263,158.00		
20	Micro spits 1.8ml	Sanko Junyaku SJ215-502	SANKO JUNYAKU	10	Ks 5,263.20	Ks 52,632.00		
21	Micro spits 0.6ml	Sanko Junyaku SJ215-501	SANKO JUNYAKU	10	Ks 6,842.10	Ks 68,421.00		
22	Centrifuge Tubes 50ml PP	NUNC (229807)	NUNC	5	Ks 14,315.80	Ks 71,579.00		
23	Instant Pack Film	Japan Polaroid 2 pack/20 exposures, B/W 5.5 x 10.8cm	POLAROID	20	Ks 1,315.80	Ks 26,316.00		
	[illegible]							

番号	機材名	仕様	メーカー名	数量	見積書価格		備考	
24	Glycogen	Boehringer (901393)	BOERIGER	10	Ks. 7,368.10	Ks 73,681.00		
25	GTC	Fluka (50990)	FLUKA	5	Ks. 5,368.40	Ks 26,842.00		
26	Fenol (Crystal)	Wako (168-12721)	WAKO	10	Ks. 789.50	Ks 7,895.00		
27	dATP	Takara (4026)	TAKARA	3	Ks. 5,789.50	Ks 17,368.50		
28	dGTP	Takara (4027)	TAKARA	3	Ks. 5,789.50	Ks 17,368.50		
29	dCTP	Takara (4028)	TAKARA	3	Ks. 5,789.50	Ks 17,368.50		
30	dTTP	Takara (4029)	TAKARA	3	Ks. 5,789.50	Ks 17,368.50		
31	Ferries	BRL (5504 UA)	BRL	10	Ks. 2,315.80	Ks 23,158.00		
32	Zalactl	Fluka (61747)		5	Ks 3,284.20	Ks 16,421.00		
33				3	Ks 2,263.20	Ks 6,789.60		
34	Sero-Crate Anti HBc	Kaketsuken (200 tests)		5	Ks 20,000.00	Ks 100,000.00		
35	Sero-Crate Anti HBs	Kaketsuken (200 tests)		5	Ks 18,421.05	Ks 92,105.25		
36	AFP-RHA Kit	Fuji Iewio (200 tests)		10	Ks 11,052.60	Ks 110,526.00		
37	HBe Antigen EIA Kit	Pinecest (100 tests)		5	Ks 49,473.70	Ks 247,368.50		
38	HCV Antigen Kit	Immunocheck (80 tests)		5	Ks 38,947.40	Ks 194,737.00		
39	Fraction Collector			1	Ks 780,472.70	Ks 780,472.70		
計						2,243,548.45		

プロジェクト

(Administration)

番号	機材名	仕様	メーカー名	数量	見積金額		供与機材	備考
01	Photocopiers	Xerox 5334 Duplex with 10 Bin Sorter Support Kit for 100000	RANK XEROX	2	Ks 353,595.00	Ks 707,190.00		
28	Toyota Hiace Petrol	Model RZN114 2000cc 18 Seater, Radio + Speaker Mul-i-Lock	TOYOTA KENYA	1	Ks 1,515,900.00	Ks 1,515,900.00		
30	Toyota Corolla Station Wagon	Model EP105 1300cc Mul-i-Lock Registration Charges,5 seater	TOYOTA KENYA	1	Ks 1,122,950.00	Ks 1,122,950.00		
31	Mitsubishi Pajero GL	2000cc. Aircondition, 9 seater, Water Cooled Petrol Engine,	CMC KENYA	4	Ks 2,021,244.00	Ks 8,084,976.00		
		5 speed gearbox Power Steering, 4 wheel drive						
34	Fax 950	Hewlett Packard	BI-TECH ENG.	1	Ks 55,000.00	Ks 55,000.00		
計						11,486,016.00		

EQUIPMENT 1996/97 JICA

1.HIV/AIDS	33,468	
	23,161	(P.in Japan)
2.ARI	7,287	
3.VH	1,051	
	9,243	(P.in Japan)
4.P/C	11,486	
TOTAL 合計	85,696	

Unit:1,000 Kshs

ANNEX 4

THE KENYAN COUNTERPART PERSONNEL IN THE NEXT KEMRI/JICA PROJECT

	NAME	DESIGNATION
Administration		
1.	Dr. D.K. Koech	Director, KEMRI HQS (Project Director)
2.	Dr. J.I. Githure	Director, BSRC (Project Co-ordinator)
3.	Mr. D.M. Ngumo	Chief Administrative Officer (Administrator)
4.	Mr. J.N. Kariuki	Senior Principal Administrative Officer (RD)
5.	Mr. G.A.O. Seko	Principal Administative Officer (RM)
6.	Mr. B. Mureithi	Supplies Officer
Engineering and Maintenance		
1.	Mr. J. Lelei	Senior Inst. Engineer
2.	Mr. J. Kuura	Electronic Engineer
3.	Mr. J. Mwaura	Clerks of Works
HIV Programme		
1.	Dr. P.M. Tukei	Director, VRC (HIV Co-ordinator)
2.	Mr. E.M. Songok	Asst. Research Officer,VRC
3.	Mr. J.N. Kanyara	Research Officer, VRC
4.	Ms. S.A. Oogo	Technologist, VRC
5.	Ms. C. Mutura	Technologist, VRC
6.	Dr. B. Khan	Principal Research Officer, BSRC
7.	Mr. Kimani Gachuhi	Principal Research Officer, BSRC
8.	Mr. J. Mwatha	Senior Research Officer, BSRC
9.	Dr. G.M. Mkoji	Senior Research Officer, BSRC
10.	Ms. S. Omar	Asst. Research Officer, BSRC
11.	Ms. M.G. Kinyanjui	Chief Laboratory Technologist, BSRC
12.	Prof. J.K. Mati	Chief Research Officer, CRC
13.	Dr. L. Kirumbi	Senior Research Officer, CRC
14.	Dr. J.J. Ochola	Senior Research Officer, CRC

15.	Dr. F. Muriu	Research Officer, CRC
16.	Dr. A. J Oloo	Director, VBCRC.
17.	Dr. N.I. Adungo	Senior Research Officer, VBCRC
18.	Mr. I.K. Seroney	Senior Research Officer, VBCRC
19.	Dr. K. Abok	Senior Research Officer, VBCRC
20.	Mr. S.O. Ondijo	Chief Laboratory Technologist, VBCRC
21.	Dr. P.M. Orege	Director, ALSDRC
22.	Dr. W. Ohenga	Senior Research Officer, ALSDRC
23.	Ms. F. Odhiambo	Research Officer, ALSDRC
24.	Dr. W.M. Kofi-Tsekpo	Director, TMDRC
25.	Dr. R. Mbindyo	Research Officer, TMDRC
26.	Mr. A. Okoth	Asst. Research Officer, TMDRC
27.	Mr. C.N. Mathaura	Technologist, TMDRC
28.	Dr. P.G. Waiyaki	Director, CMR
29.	Dr. W. Nderitu	Research Officer, CMR
30.	Ms. E. Bukusi	Senior Research Officer, CMR
31.	Mr. W. Sang	Research Officer, CMR
32.	Mr. S. Saidi	Asst. Research Officer, CMR
33.	Dr. C. Bii	Asst. Research Officer, CMR
34.	Dr. B.C. Chirchir	Research Officer, MRC
35.	Mrs. L. Mwaura	Senior Public Health Nurse, MRC
36.	Mrs. M. Mariara	Senior Public Health Nurse, MRC
37.	Ms. J. Alaii	Asst. Research Officer, MRC
38.	Mr. E. Muniu	Research Officer, MRC
39.	Mr. M. Karama	Public Health Officer, MRC
40.	Mrs. F. Kingori	Clinical Officer, MRC

ARI Programme

1.	Dr. J. Odhiambo	Senior Research Officer, CRC (ARI Co-ordinator)
2.	Dr. K. Wasunna	Ag. Director, CRC
3.	Dr. P. Nyakundi	Senior Research Officer, CRC
4.	Dr. J. Rashid	Research Officer, CRC
5.	Mr. G. Kirigi	Clinical Officer, CRC
6.	Mr. J. Mbugua	Clinical Officer, CRC
7.	Dr. J. Chakaya	Research Officer, CRC
8.	Dr. C. Mwachari	Research Officer, CRC
9.	Ms. W. Githui	Research Officer, CRC
10.	Mr. K. Gachuhi	Principal Research Officer, BSRC
11.	Dr. P. Mbati	Research Officer, BSRC
12.	Mr. W. Tonui	Asst. Research Officer, BSRC
13.	Dr. W. Ochieng	Senior Research Officer, VRC
14.	Mr. J. Magana	Research Officer, VRC
15.	Ms. B. Apollo Obanda	Asst. Research Officer, CMR
16.	Dr. D.L. Mwaniki,	Ag. Director, MRC
17.	Mr. J.N. Muttunga	Senior Research Officer, MRC
18.	Dr. Y. Kombe	Senior Research Officer, MRC
19.	Ms. M. Amyunzu	Research Officer, MRC
20.	Mr. L. Muthami	Research Officer, MRC
21.	Mr. I. Mwobobia	Research Officer, MRC
22.	Mr. R. Agwanda	Research Officer, MRC

Viral Hepatitis Programme

1.	Dr. F. Okoth	Principal Research Officer, VRC (VH Co-ordinator)
2.	Mr. J. Muli	Chief Laboratory Technologist, VRC
3.	Mr. J. Tuei	Asst. Research Officer, VRC
4.	Mr. E. Mathenge	Asst. Research Officer, VRC

ANNEX 5

ORGANIZATION STRUCTURE OF KEMRI/JICA PROJECT V PHASE
DRAFT ONLY
PROJECT DIRECTOR
PROJECT COORDINATOR
JICA CHIEF ADVISOR
JICA COORDINATOR
ADMINISTRATIVE OFFICER
SUPPLIES OFFICER
ACCOUNTANT
STOREMAN
C. LAB COORDINATOR
RESEARCH OFFICER
CHIEF TECHNOLOGIST
TECHNOLOGISTS
HIV COORDINATOR
JICA EXPERTS
RESEARCH OFFICERS
TECHNOLOGISTS
ASTI COORDINATOR
JICA EXPERTS
RESEARCH OFFICERS
TECHNOLOGISTS
VL COORDINATOR
JICA EXPERTS
RESEARCH OFFICERS
C. LAB:Central Laboratory

ANNEX 6

KEMRI/JICA Mtg 8 14(12/97) 819

KENYA GOVERNMENT COMMITMENT IN THE FOURTH PHASE OF THE KEMRI/JICA PROJECT

COST ITEM	1996/97	1997/98	1998/99	1999/2000	2000/01	TOTAL
A LOCAL PERSONNEL COSTS	K£ 92,839	K£ 96,552	K£ 100,414	K£ 104,430	K£ 108,607	K£ 502,842
B I. OPERATIONAL COSTS						
(a) Communication (Postage, Telephone, Fax etc)	8,000	9,000	10,000	10,000	12,000	49,000
(b) Electricity	9,000	10,000	12,000	14,000	16,000	61,000
(c) Water and Conservancy	3,000	4,000	4,400	5,000	5,500	21,900
II. FIELD OPERATION COSTS	30,320	32,052	35,057	38,362	41,998	177,789
III. MAINTENANCE COSTS						
(a) Maintenance of Equipment	8,000	7,000	7,400	7,600	7,800	37,800
(b) Maintenance of research vehicles.	4,000	6,000	7,250	8,500	9,750	35,500
(c) Maintenance of P3 Laboratory	-	-	4,500	6,500	6,000	17,000
IV. PROCUREMENT OF FIELD AND LABORATORY RESEARCH MATERIALS	9,400	10,000	12,000	14,700	16,000	62,100
SUB-TOTAL I+II+III+IV	71,720	78,052	92,607	104,662	115,048	462,089
T O T A L (A + B)	164,559	174,604	193,021	209,092	223,655	964,933

ANNEX 7

Title of the 4th phase of the KEMRI/JICA Project

Titles that were considered and discussed for the next Phase of the KEMRI/JICA Project on 8/11/95.

1. Infectious Diseases Research Project towards the year 2000 and beyond.
2. Current Infectious Diseases Research Project towards the year 2000 and beyond.
3. KEMRI/JICA Medical Research Project.
4. KEMRI/JICA Infectious Diseases Research Project.
5. **KEMRI/JICA Infectious Diseases Research Project** (towards the year 2000 and beyond)

ANNEX 7a

KEMRI/JICA Project Objectives

HIV/AIDS Programme

General Objective

To develop and install basic technical capabilities and capacity for the prevention, control and management of HIV/AIDS through multidisciplinary scientific investigations.

Specific Objectives

a) To develop sustainable cost-effective diagnostic kits and sensitive techniques for the diagnosis of HIV

b) To isolate and characterize the virus for serotyping and mapping of the genotypes

c) To screen plant substances for antiviral activity and in vitro drug sensitivity testing

d) To study the natural history, aetiology, clinical management, prevention and control of HIV/AIDS and related infections in the selected cohorts

ARI Programme

General Objective

To develop and install basic technical capabilities and capacity for the prevention, control and management of Acute Respiratory Infections through multidisciplinary scientific investigations

Specific Objectives

a) To study the aetiology, epidemiology and risk factors of ARI in selected cohorts

b) To develop appropriate preventive and management strategies for the control of ARI

c) To develop improved diagnostic methodologies that distinguish between ARI and other infections

d) To establish biotechnological techniques for the diagnosis, management and control of ARI

e) To relate antibacterial drug sensitivity to therapeutic responses in ARI and to screen plant compounds for antimicrobial activities

Viral Hepatitis Programme

General Objective

To prevent viral hepatitides and to develop the capability of early diagnosis and treatment of hepatocellular carcinoma

Specific Objectives

To promote sustainable blood screening of viral hepatitides

To promote the development of Hepatitis B vaccine

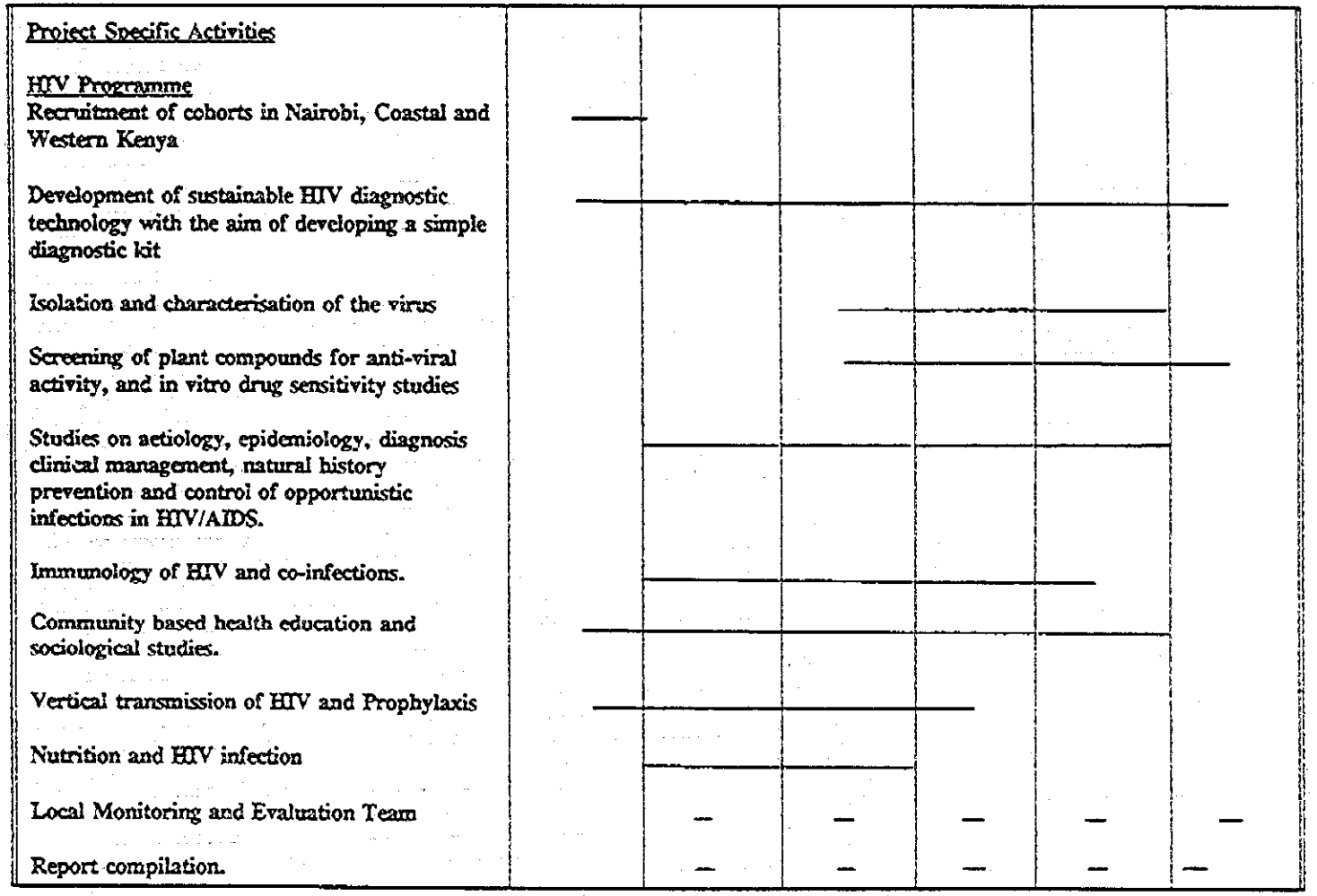
To introduce sensitive molecular diagnostic techniques such as PCR for viral hepatitides

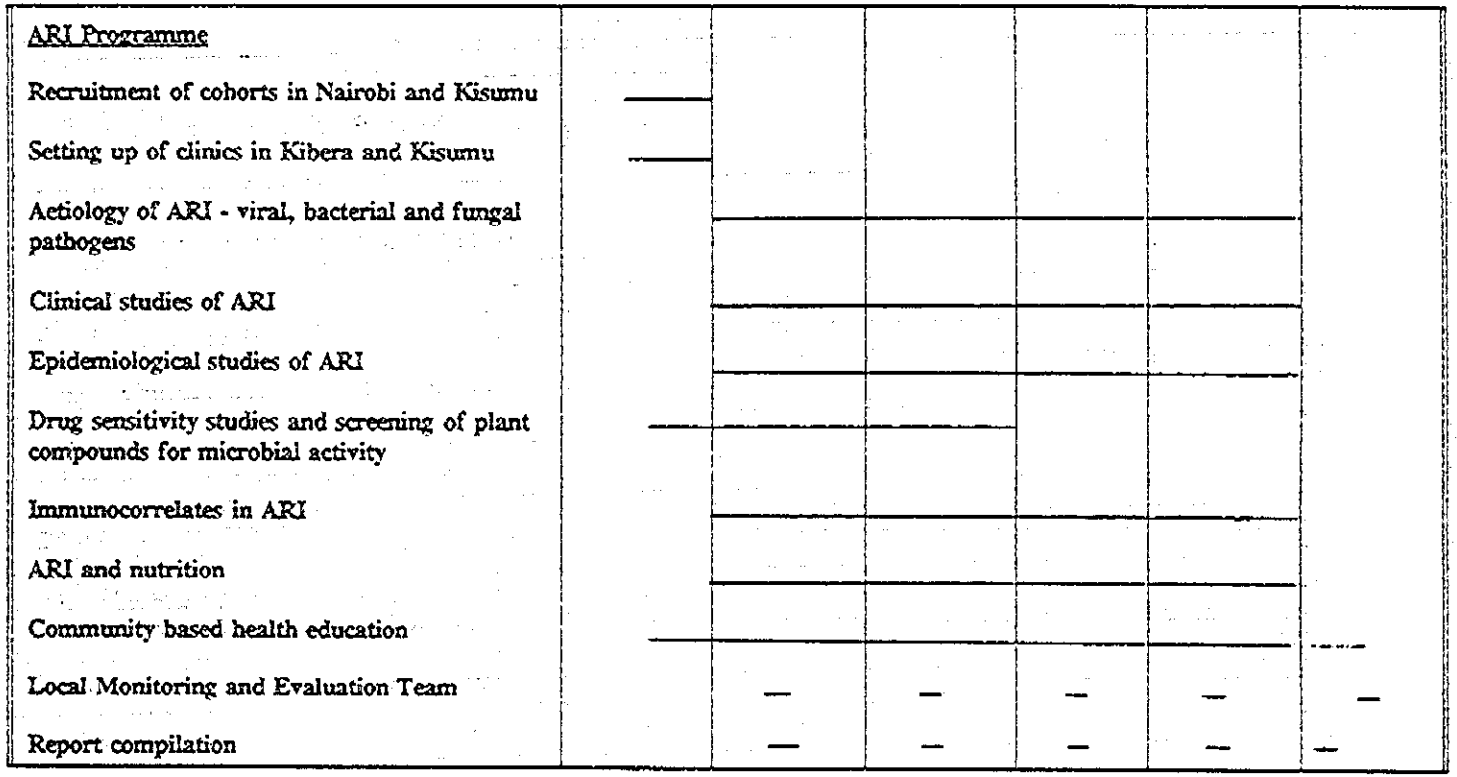
To promote widespread utilization of the Hep Cell diagnostic kit in the region

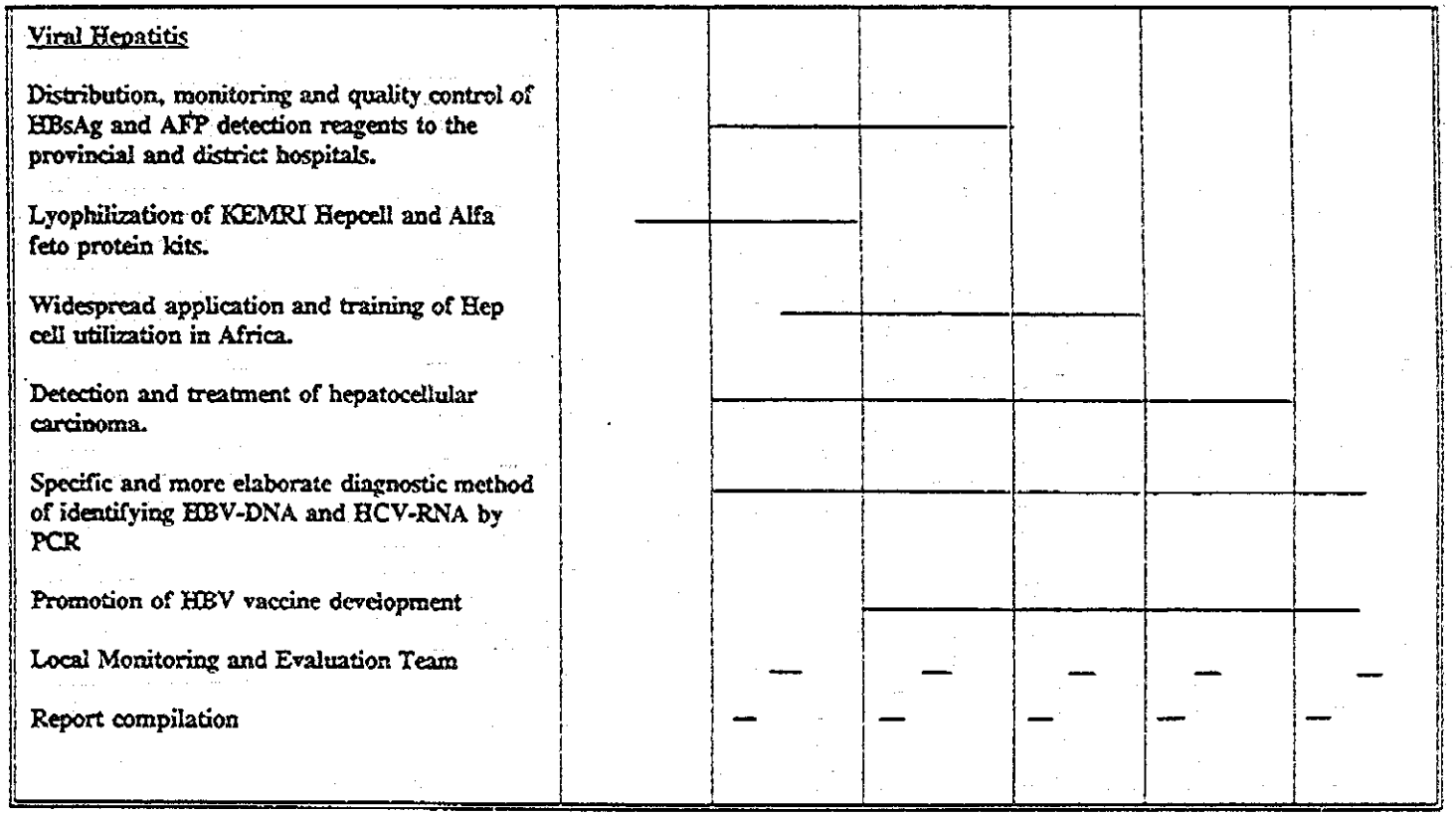
To introduce sensitive techniques for the early diagnosis and management of hepatocellular carcinoma

Tentative Schedule of Project Implementation

Main Activities	1996	1997	1998	1999	2000	2001
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Counterpart Training	6	6	6	6	6	6
Provision of Equipment		—	—	—	—	—
Dispatch of Japanese Experts						
JICA Chief Advisor	—	—	—	—	—	—
JICA Coordinator	—	—	—	—	—	—
HIV Experts	—	—	—	—	—	—
ARI Experts	—	—	—	—	—	—
VH Experts						
Japanese Advisory Mission	—	—		—	—	
Local Monitoring and Evaluation Team		—	—	—	—	—
External Evaluation Team				—		—


Project Specific Activities
HIV Programme
Recruitment of cohorts in Nairobi, Coastal and Western Kenya
Development of sustainable HIV diagnostic technology with the aim of developing a simple diagnostic kit
Isolation and characterisation of the virus
Screening of plant compounds for anti-viral activity, and in vitro drug sensitivity studies
Studies on aetiology, epidemiology, diagnosis clinical management, natural history prevention and control of opportunistic infections in HIV/AIDS.
Immunology of HIV and co-infections.
Community based health education and sociological studies.
Vertical transmission of HIV and Prophylaxis
Nutrition and HIV infection
Local Monitoring and Evaluation Team
Report compilation.


ARI Programme
Recruitment of cohorts in Nairobi and Kisumu
Setting up of clinics in Kibera and Kisumu
Aetiology of ARI - viral, bacterial and fungal pathogens
Clinical studies of ARI
Epidemiological studies of ARI
Drug sensitivity studies and screening of plant compounds for microbial activity
Immunocorrelates in ARI
ARI and nutrition
Community based health education
Local Monitoring and Evaluation Team
Report compilation


Viral Hepatitis
Distribution, monitoring and quality control of HBsAg and AFP detection reagents to the provincial and district hospitals.
Lyophilization of KEMRI Hepcell and Alfa feto protein kits.
Widespread application and training of Hep cell utilization in Africa.
Detection and treatment of hepatocellular carcinoma.
Specific and more elaborate diagnostic method of identifying HBV-DNA and HCV-RNA by PCR
Promotion of HBV vaccine development
Local Monitoring and Evaluation Team
Report compilation

DETAILED SCHEDULE OF PROJECT IMPLEMENTATION

HIV Programme

1. **Recruitment of cohorts in Nairobi, coastal and western Kenya for studies on HIV (Dr. Y. Kombe, Dr. N. Adungo, Dr. W. Ohenga)**

   - Census and demographic survey July - Sept. 1996.

   - Mapping and registration of households - October-November 1996.

   - Sample size determination Nov.- Dec. 1996.

   - Follow-up of cohorts Jan. 1997-June 2001

2. **Development of sustainable HIV diagnostic technology with the aim of developing a simple diagnostic kit (Dr. B. Khan, Mr. E. Songok)**

   - Blood, semen saliva and urine sample collection Jul - Dec. 1996

   - Testing for HIV in these samples using ELISA and Western Blot Jul - Dec. 1996

   - Primer synthesis locally at ILRI and/or acquired from Japan Jul - Sept. 1996

   - Optimizing nucleic acid extraction technique for PCR Oct - Dec 1996

   - Optimizing antigen extraction for Particle Agglutination Oct - Dec 1996

   - Optimizing PCR reactions by varying parameters eg primers, $MgCl_2$ concentration, cycling parametes etc Jan - March 1997

   - Piloting antigen coating of particles Jan - March 1997

   - Evaluation of methods (ethidium bromide-stained agarose gel electrophoresis, isotopic

and colorimetric) for PCR product detection April - June 1997

- Testing of the Particle Agglutination kit April - June 1997

- Simplifying procedure for nucleic acid extraction, PCR and product detection July - Dec 1997

- Field testing the Particle Agglutination kit July - Dec 1997.

- Testing of PCR and PA kits in a laboratory setting Jan 1988- July 1999

- Comparison of NASBA and PCR Jan - Dec 1999

- Testing of PCR and PA in a hospital setting - Aug. 1999-Dec.1999.

- Testing of kit in a health facility - Jan.2000-Jul.2000

- Final evaluation, review and dissemination of results through workshops, semiars and publications July 2000 - June 2001

3. **Isolation and characterisation of the virus (Mr. M. Songok)**

-Characterization by serotypes and PCR July 1996 - June 2000

- Blood collection

- Routine ELISA testing Western blotting

- Serological and molecular characterization using specific peptides and heteroduplex mobility assays

- Viral isolation and cultures Jan. 1998 - Dec. 2000

- Establishment of a P3 facility

- Training in P3 utilization

- Biological characterization and genotyping

- Data analysis and report preparation -Mar - May 1997.

4. **Screening of plant compounds for anti-viral activity, and in vitro drug sensitivity studies (Dr. W.M. Kofi-Tsekpo)**

- Collection of plant materials - July 1996 - Dec. 1997

- Preliminary phytochemical screening - July 1996 - June 1997.

- Animal experimentation - July. 1996 - June. 1997

- Preparation of extracts for in vitro anti-HIV and anti-microbial studies July 1997 - Dec. 1997.

- Fractionation of extracts and isolation of compounds - Jul 1997- Dec. 1997

- In vitro anti-HIV and anti-microbial sensitivity tests- Dec. 1996 - June. 1997

- Further fractionations and isolations - July 1996 - Dec. 1996.

- Purification of compounds isolated and structural elucidation Jan 1997-Dec 1998.

- Animal toxicity tests - Jan 1998 - Dec. 1998

- Structural modifications and derivatizations - July 1997 - June 2000

- Data analysis, evaluation and report preparation - Mar -May 1997.

5. **Studies on aetiology, epidemiology, diagnosis, clinical management, natural history prevention and control of opportunistic infections in HIV/AIDS in the established cohorts (Dr. Wasunna, Dr. M Chakaya, Dr. P. Waiyaki, Dr. K. Abok, Dr. P. Orege)**

- Clinical studies and counselling 1996-1997

- Sample collection, processing, microscopy and culture

- Characterization of opportunistic pathogens using microscopy, biochemical and molecular techniques 1997-1999

- Drug sensitivity studies and determination of minimum inhibitory concentration 1999 - 2000

- Clinical intervention and follow-up of patients 1998-2000

- Data analysis and report preparation Mar - May 1997.

6. **Immunology of HIV and co-infections (Mr. Kimani Gachuhi)**

- HIV and immunizable childhood diseases (Dr. J. Ochola)

- Clinical examinations and immunological assays to document the effect of vaccination on HIV progression in children 0-2 years 1996 - 2000.

- HIV and parasitic infection (Mr. Kimani, Mr. Muhoho, Dr. Adungo)

- Cellular and antibody responses in *S.haematobium*, *S.mansoni*, filariasis, *T.gondii*, malaria, *Strongyloides*, hookworm, amoebiasis, *Ascaris* in normal and HIV sero-positive individuals 1996-2000

- Characterization of parasite strains using molecular markers 1997- 2000

- Investigation of the potential role of genital schistosomiasis in the predisposition to HIV 1996-1997.

- Viral/immunological co-factors for susceptibility in HIV infection and development of AIDS (Mrs. Kinyanjui, Mr. Kimani)

- Sample collection July - Dec 1996

- HLA primers acquisition July - Sept 1996

- Analysis of samples for HLA class I antigens using a microcytotoxicity test 1997-1998

- Analysis of samples for HLA class II antigens using PCR technique - 1997 - 1998

- Analysis of viral and immunological markers that lead to infection, discordant immunity and disease progression

- Data anaysis and report preparation Mar - May 1997.

7. **Community based health education and sociological studies - (Dr. M. Amuyunzu, Mr. M. Karama, Mr. W. Kisingu,)**

- Interviews with People with AIDS Jul. - Dec. 1996

- Develop FGD guidelines and field testing Jul - Dec 1996

- Follow up counselling and documentation July 1996 - Dec. 2000

- Clinical and pathological diagnosis July - Dec.1996

- Development of questionnaire July - Dec 1996.

- Administration of questionnaire Dec - Mar 1997

- Evaluation of questionnaire Jun - Sep. 1997.

- Design and development of health education strategies Feb - Aug. 1998

- Piloting of developed health education models Aug - Dec. 1998

- Follow-up counselling and documentation Jan - Mar 1998

- Health education for doctors/clinicians Jan.1999-Dec.2000

- Data analysis and report preparation Mar - May 1997

8. **Vertical transmission of HIV and Prophylaxis - (Prof. J. Mati, Dr. L. Kirumbi)**

- Recruitment of mothers July 1996 - June 1997

- Follow up of mothers and their babies Aug 1996 - Jan 1998

- Continuation of baby follow up Feb 1997 - Aug 1999

- Data analysis and report preparation Mar - May 1997

9. **Nutrition and HIV infection (Mr. J. Muttunga) 1997 - 1998**

- Hookworm and depletion of vitamin A in relation to progression of AIDS

- Data analysis and report preparation Mar- May 1997

10. **Annual Project monitoring and Evaluation (Mr. J. Muttunga)**

11. **Report compilation Annual every May-June by Dr. P. Tukei**

ARI Programme

1. **Recruitment of cohorts in Nairobi and Kisumu (Dr. Y. Kombe, Dr. K. Abok) July - Dec. 1996.**

   - Census and demographic survey

   - Mapping and registration of households

   - Sample size determination

   - Follow up of cohorts.

2. **Setting up of clinics in Kibera and Kisumu (Dr. J. Odhiambo, Dr. K. Abok) July - Sept. 1996.**

3. **Aetiology of ARI** - **Viral** - **(Dr. W. Ochieng) 1997 - 2000**

   - **Bacterial - (Dr. J. Odhiambo) 1997 - 2000**

   - **Fungal aetiology (Ms C. Bii) 1997 - 2000**

4. **Clinical Studies of ARI -(Dr. M. Chakaya, Dr. K. Abok) 1997 - 2000**

   - Description of clinical syndromes and severity

   - Performance of diagnosis and therapeutic procedures

   - Determination of therapeutic responses and ARI outcomes

5. **Epidemiology of ARI -(Dr. Y. Kombe) 1997 - 2000**

   - Prevalence and incidence data

- Socio-cultural data

6. **Drug sensitivity studies and screening of plant compounds for viral & bacterial activity (Dr. W.M. Kofi-Tsekpo) 1996 - 2000**

- Collection of plant materials - July 1996 - Dec. 1997

- Preliminary phytochemical screening - July 1996 - June 1997.

- Animal experimentation - July. 1996 - June. 1997

- Preparation of extracts for in vitro anti-HIV and anti-microbial studies July 1997 - Dec. 1997.

- Fractionation of extracts and isolation of compounds - Jul 1997- Dec. 1997

- In vitro anti-HIV and anti-microbial sensitivity tests- Dec. 1996 - June. 1997

- Further fractionations and isolations - July 1996 - Dec. 1996.

- Purification of compounds isolated and structural elucidation Jan 1997-Dec 1998.

- Animal toxicity tests - Jan 1998 - Dec. 1998

- Structural modifications and derivatizations - July 1997 - June 2000

- Data analysis, evaluation and report preparation - Mar -May 1997.

7. **Malaria and ARI - (Dr. J. Odhiambo, Dr. A. Oloo) 1997 - 2000**

- Parasitological data

- Clinical correlates and outcomes

8. **Immunocorrelates in ARI (Mr. K. Gachuhi) 1997 - 2000**

   - Immunoglobulins in ARI
   - T cell subsets in ARI
   - Cytokines in ARI
   - Atopy in ARI
   - Other factors eg surfactants in ARI

9. **ARI and nutrition (Mr. J. Muttunga) 1997-2000**

   - Micronutrients in ARI, baseline data
   - Micronutrient supplementation

10. **Community based health education (Dr. M. Amuyunzu, Mr. M. Karama)** 1996-2001

    - Developing FGD guidelines and field testing
    - Designing and development of health education strategies
    - Piloting and development of health education models
    - Training of trainers

11. **Project monitoring and evaluation (Mr.J. Muttunga)**

12. **Report compilation Annual every March - June by Dr. J Odhiambo**

Viral Hepatitis Programme

1. **Distribution, monitoring and quality control of HBsAg and AFP detection reagents to the provincial and district hospitals. (Mr. E. Mathenge) 1997-1998**

2. **Lyophilization of KEMRI Hepcell and Alfa feto protein kits (Mr. P. Kaiguri) 1996-1997**

3. **Widespread application and training of HEP cell utilization in Africa (Dr. F. Okoth) 1997-1999**

4. **Detection and treatment of hepatocellular carcinoma (Dr. F.Okoth) 1997-2000**

5. **Specific and more elaborate diagnostic method of identifying HBV-DNA and HCV-RNA by PCR - (Mr. J. Tuei) 1997-2001**

6. **Promotion of HBV vaccine development (Dr. F. Okoth) 1998-2001**

7. **Project monitoring and evaluation (Mr. J. Muttunga)**

8. **Report compilation Annual every March - June by Dr. F. Okoth**

PROJECT INPUTS SUMMARY

DRAFT

As of 17/01/96

BUDGET/EQUIPMENT

Year	1996		1997		1998		1999		2000	
ITEMS	7 8 9 0 1 2 1 2 3 4 5 6		7 8 9 0 1 2 1 2 3 4 5 6		7 8 9 0 1 2 1 2 3 4 5 6		7 8 9 0 1 2 1 2 3 4 5 6		7 8 9 0 1 2 1 2 3 4 5 6	
EQPMT Major Equipment Provision	HIV/AIDS	20,000,000	HIV/AIDS	15,000,000	HIV/AIDS	834,000	HIV/AIDS	834,000	HIV/AIDS	5,000,000
	ART	10,000,000	ART	750,000	ART	833,000	ART	833,000	ART	5,000,000
	HEPATITIS	10,000,000	HEPATITIS	750,000	HEPATITIS	833,000	HEPATITIS	833,000	HEPATITIS	5,000,000
	TOTAL	Kshs 40,000,000	TOTAL	Kshs 30,000,000	TOTAL	Kshs 25,000,000	TOTAL	Kshs 25,000,000	TOTAL	Kshs 15,000,000
Expts'Equip.		Kshs 4,000,000		Kshs 5,000,000		Kshs 5,000,000		Kshs 5,000,000		Kshs 2,000,000
LOCAL COST FUNDING	Kenya	1,200,000	Kenya	1,400,000	Kenya	1,700,000	Kenya	2,000,000	Kenya	2,500,000
	Japan	6,300,000	Japan	6,600,000	Japan	6,800,000	Japan	7,000,000	Japan	5,000,000
	Total	Kshs 7,500,000	Total	Kshs 8,000,000	Total	Kshs 8,500,000	Total	Kshs 9,000,000	Total	Kshs 7,500,000
S.COMMITTEE		NOV		NOV		NOV		NOV		NOV
JICA MISSION		NOV				NOV			[Evaluation]	NOV

NB. ①The local cost funding includes such direct cost for research operations as field work accommodation allowance, vehicles fuel, casual field workers employment, laboratory consumables (reagents/chemicals,etc.), vehicles/laboratory equipment maintenance, vehicles insurance, communication cost, etc., but it excludes such logistic cost as salaries for counterpart officers, institute water and power, institute building maintenance and other institute administrative cost.The amount means estimation and does not mean approved amount.

②S.COMMITTEE:STEERING COMMITTEE

ANNEX 7c

MINISTRY OF RESEARCH, TECHNICAL TRAINING AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: Nairobi 219420
Fax: Nairobi 223187
When replying please quote
Ref No A8.01/13.Vol.VI/
and date

P.O. Box 30568
NAIROBI
18th January 96
....., 19.....

The Permanent Secretary,
Ministry of Finance,
Treasury,
P.O. BOX 30007,
NAIROBI.

For the attention of Mr. Nyanumba

APPLICATION FOR JICA GRANT AID SUPPORT FOR CONSTRUCTION OF A P 3 LABORATORY AND IMPROVEMENT OF TRAINING FACILITIES UNDER THE FOURTH PHASE OF THE KEMRI/JICA PROJECT 8196-2001)

As you are aware, we have already submitted to the Treasury our proposal for the fourth phase of the KEMRI/JICA Project to cover the period from 1996-2001.

Within the proposal we have included the development of a P3 laboratory which is a highly specialised facility, essential for conduct of research studies on the HIV virus and other highly pathogenic organisms. We require the P3 laboratory with the necessary equipment for handling the highly specialised and sensitive laboratory activities on viral diseases planned to be carried out during the fourth phase of the Project. Once developed, this will be the only medical laboratory of its kind in Africa. As part of the proposal, KEMRI also wishes to request JICA for assistance in the improvement of its training facilities. KEMRI, besides fulfilling its national research mandates, also plays a very important role in the trainingof scientists and technical staff from the African region.

The purpose of this letter therefore, is to request you to please kindly submit to the Embassy of Japan our request for Grant Aid support for the development of a P3 laboratory and improvement of the project at KEMRI. You may wish to note that it is technically difficult to carry out the planned activities of the fourth phase of the project without the facilities quoted herein above. The whole proposed development embracing the P3 laboratory, a Pathology Unit, Offices for the JICA collaborators, a data handling Unit and training facilities is all estimated to cost about K£12.5 million or K.Sh. 250 million.

.../2

Kenya Agricultural Research Institute have already hold premiliminary discussions with the JICA Advisory Committee and they have indicated that KEMRI can apply for Grant Aid from Japan for development of the said facilities, subject to a declaration of the Kenya Government that it will be able to sustain the facilities once developed.

In the light of the foregoing, we would be most grateful if the project could be included in the agenda for the forthcoming Kenya/Japan 1996 annual bilateral discussions. Your immediate response will be highly appreciated.

BEN J. O. MAK'OSEWE

BEN J. O. MAK'OSEWE
For: PERMANENT SECRETARY

c.c.

The Director,
KEMRI. Att: Mr. D.M.Nguno

GRANT AID APPLICATION TO JICA

A. P3 Unit and accessory equipment

	Estimated Cost Kshs.
P3 Unit 37.5m^2 imported from Japan	26,500,000
Safety cabinet (small)	1,005,000
Safety cabinet (large)	1,867,500
Deep freezer (-90°)	1,005,000
Autoclave	6,500,000
Small autoclave	305,000
Ultra centrifuge	2,400,000
CO_2 incubator	1,050,000
Refridgerators (3)	787,500
Central expt. table	400,000
Small expt. table	100,000
Clean locker	270,000
Thermocyclers (3)	1,966,500
Backup generator	1,500,000
Electophoresis apparatus	17,400
Oven	100,000
Sub-total	45,773,900

B. Training facility complex

2 demonstration laboratories, 6 offices, lecture theatre, pathology unit, computer room, equipment room, 2 stores, guest house, generator room	
Sub-total	204,226,100
Grand total	250,000,000

ANNEX 8

Project Monitoring and Evaluation Committee (PMEC)

1. Functions of the Committee

The PMEC will meet at least once a year or whenever the necessity arises, and discuss.

1. To formulate the annual work plan of the Project in line with the Tentative Schedule of Implementation formulated under the framework of the Annex 7b.

2. To review the overall progress of the Project as well as the achievements of the above-mentioned annual work plan;

3. To review and exchange views on major issues arising from or in connection with the Project; and

4. To discuss any matters to be mutually agreed upon as necessary concerning the Project.

2. Composition

1) Chairman/Convenor: Director KEMRI (or his/her representative)

2) Members:

Kenyan side:

a) Permanent Secretary, Ministry of Research Technical Training and Technology, Responsible for the affairs of KEMRI (or his/her representative)

b) Permanent Secretary, Ministry of Foreign Affairs (or his/her representative).

c) Director of Medical Services, Ministry of Health (or his/her representative)

d) KEMRI/JICA Project Coordinator

e) HIV, ARI and VH Programme Coordinator

f) Other Key Counterparts.

g) Chief Administrative Officer, KEMRI.

h) Other personnel mutually agreed upon as necessary

Japanese side

a) KEMRI/JICA Project Chief Advisor

b) KEMRI/JICA Project Coordinator

c) Other experts

d) Other personnel to be dispatched by JICA

e) Resident Representative of JICA Kenya Office.

Note: Officials of the Embassy of Japan in the Republic of Kenya may attend the PMEC as observers.

ANNEX 9

REGIONAL COLLABORATION

Most countries in Africa are faced with common problems relating to infectious diseases. JICA supports a few of these countries in health sciences research and has made some efforts to bring scientists together to work for a common goal in the management and control of infectious diseases. This approach started in Kenya in February 1992 when JICA facilitated four senior officers in KEMRI to visit the Noguchi Memorial Institute of Medical Research, (NMIMR) Ghana to deliberate on the issue of institutional collaboration. It was at this meeting that the idea of tripartite collaboration between NMIMR, KEMRI and University of Zambia (all JICA supported institutions) was discussed.

The first tripartite meeting between these three institutions was held in Lusaka, Zambia in August, 1993. The second meeting was held in KEMRI in February 1995 while the third is scheduled to be held in NMIMR, Accra in 1997. The aims of these biannual tripartite meetings are:

- to promote the exchange of scientific staff, knowledge and ideas between the three institutions
- to help in the inter-institutional motivation of personnel in the three institutions
- to initiate new strategies for health promotion for the people not only of the three participating countries but also other countries in Africa.

The three institutions have signed a Memorandum of Understanding and agreed to collaborate in the folLowing areas; schistosomiasis, viral hepatitis, diarrhoeal diseases, electron microscopy, HIV/AIDS, Expanded Programme on Immunization, acute respiratory infections, malaria, medicinal plants, filariasis and medical equipment. Institutional and Project Coordinators were appointed to exchange information and to develop joint scientific proposals.

KEMRI has expressed gratitude to JICA for facilitating these encounters and hopes that this noble effort will continue and also expand to the neighbouring countries for more effective regional cooperation in disease control within and across the borders.

Scientists in KEMRI are committed to developing their research capabilities so that the Institute can become a Centre of Excellence and Training in the management and control of infectious diseases.