ザンビア大学獣医学部技術協力計画フェーズII
巡回指導（中間エバ）調査報告書

平成7年1月

国際協力事業団

ザンビア大学獣医学部技術協力計画フェーズII
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平成７年１月

国際協力事業団

序　　文

国際協力事業団は、ザンビア国実施機関との討議議事録（R／D）等に基づき、ザンビア大学獣医学部技術協力計画フェーズⅡを平成4年7月22日から5カ年間の計画で実施しています。

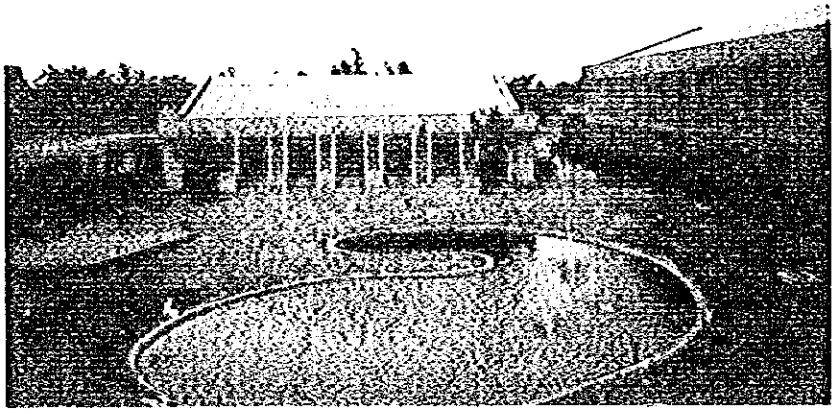
本プロジェクトの協力開始後3年目に当たり、事業の進捗状況及び現状を把握するとともに相手国プロジェクト関係者及び派遣専門家に対し適切な指導と助言を行うことを目的として、当事業団は、平成6年11月13日から11月27日まで東京農工大学農学部教授　小川益男氏を団長とする巡回指導調査団を現地に派遣しました。

本報告書は、同調査団によるザンビア国政府関係者との協議及び現地調査結果等をとりまとめたものであり、本プロジェクトの円滑な運営のために活用されることを願うものです。

終わりに、この調査にご協力とご支援を頂いた内外の関係各位に対し、心より感謝の意を表します。

平成7年1月

国際協力事業団
農業開発協力部
部長　有川通世

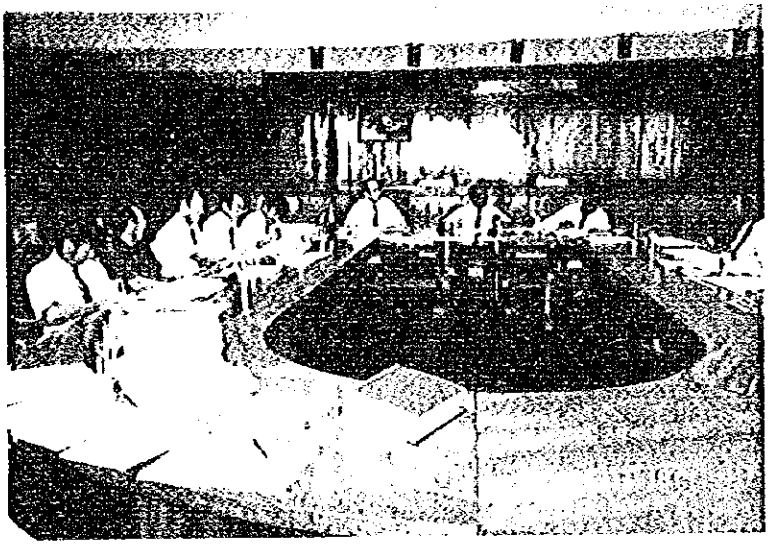


◀ 獣医学部全景

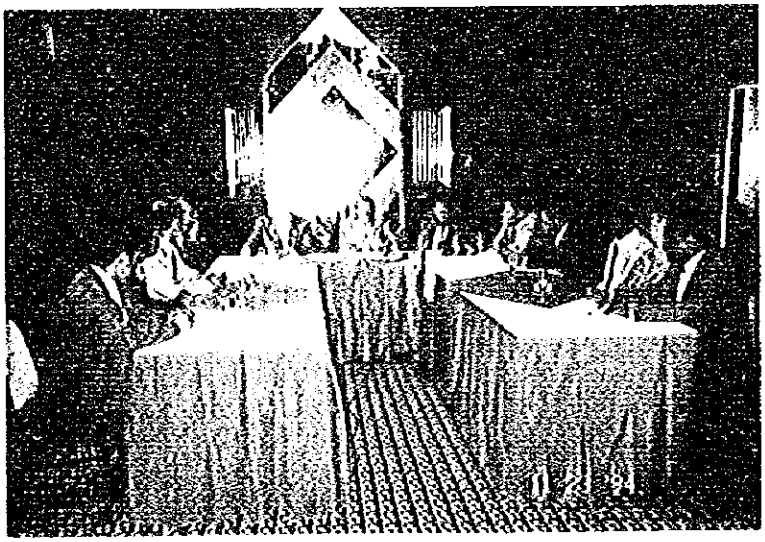
◀ 物品保管状況（Ⅰ）

◀ 物品保管状況（Ⅱ）

◀ 農業省獣医局訪問



◀ 合同委員会



◀ ミニッツ署名

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1－1　調査団派遣の経緯と目的

(1)　プロジェクト概要・経緯

ザンビアは約320万頭の牛を保有する牧畜国であるが、家畜疾病等のため生産性が低く、畜産物を輸入している。また、獣医師の数が少なく家畜衛生対策が遅れている。このため、ザンビア政府はザンビア大学（UNZA ； University of ZAMBIA）に獣医学部を新設し、獣医師の養成を図ることとし、我が国にそのための無償資金協力及び技術協力を要請した。これに対し我が国は、無償資金協力（83年度：24億円、84年度：15億円）と85年1月から7年半に亘る技術協力（プロジェクト方式技術協力；ザンビア大学獣医学部技術協力計画）を実施し、学部教育の体制をほぼ確立することができた。

しかしながら、獣医学部の教官の大半が外国人であったために、ザンビア政府はザンビア人自らの手で学部教育を行い得る教官養成体制の確立を目指し、大学院教育を実施するためのフェーズⅡの協力を引き続き我が国に要請した。これに対し我が国は、92年7月から5年間の技術協力を行うこととした。

フェーズⅡでは、ザンビア人の教官（アカデミック・スタッフ）養成のために獣医学研究と普及活動を強化しつつ、大学院の教育プログラムを確立することと、すでに確立されている学部教育を維持・強化することを目的に、次の活動を実施してきた。

① 大学院（学部卒後）教育プログラム
② 獣医学研究活動
③ 学部教育プログラムの維持・強化
④ 獣医学普及サービスの強化
⑤ 卒後技術補完研修
⑥ ワークショップの確立

(2)　調査団派遣の目的

本プロジェクトが開始後ほぼ2年を経過したことから、今回の巡回指導調査を中間評価調査と位置付け、プロジェクトの進捗状況及び問題点を的確に把握する。そして、その結果をプロジェクトの活動にフィードバックし、今後のプロジェクトの活動内容及び到達目標を適切かつ明確なものとする。また、調査結果を踏まえ、今後の円滑なプロジェクトの活動に資する助言・提言を行うとともに、必要に応じ、暫定実施計画（AWP ； Annual Work Plan）[注]の見直しを行う。

今回の調査団の調査・協議事項は次の通りとした。

① 両国の投入実績（専門家派遣、機材供与、研修員受入、ローカルコスト負担等）

② プロジェクト活動実績及び目標達成度

③ プロジェクト運営管理体制

④ 機材の維持管理体制

⑤ 第三国援助の動向（英国 ODA 等）

⑥ 大学キャンパスの安全対策

⑦ その他（協力隊員による協力活動等）

注）これまでの国内委員会等における資料においては、プロジェクトの活動計画を示すものを TSI（暫定実施計画…TENTATIVE SCHEDULE OF IMPLEMENTATION）としてきたが、計画打合せ調査団がザンビア側と合意した計画は ANNUAL WORK PLAN（AWP）であったので、以後このように表記するものとする。

1－2 調査団の構成

(1) 総　　括（団長）

東京農工大学農学部獣医学科教授　　小川　益男

(2) 獣医学研究

農林水産省家畜衛生試験場東北支場第一研究室長　今田　忠男

(3) 獣医学教育

北里大学獣医畜産学部獣医学科助教授　　竹原　一明

(4) 業 務 調 整

JICA 農業開発協力部畜産技術協力課　　大田　孝治

1－3　調査日程

	月　日	時間	
1	Nov. 13 (Sun.)	13:45 17:40	成田発　BA－008 ロンドン着
2	14 (Mon.)	21:25	ロンドン発　BA－053
3	15 (Tue.)	11:50 15:45	ルサカ着 JICA事務所及び専門家との打合せ(今後の活動方針/改訂AWPについて)
4	16 (Wed.)	9:30 10:00 14:00 15:00 16:00 17:00	獣医学部訪問・学部長表敬 ザンビア大学学長表敬 教育省表敬 農業省表敬 国家開発計画委員会表敬 専門家との打合せ(今後の活動方針/改訂AWPについて)
5	17 (Thu.)	9:00 14:30 16:00	獣医学部との打合せ 在ザンビア日本大使館表敬 プロジェクト視察 専門家との打合せ(ザンビア側への要望事項取り纏め)
6	18 (Fri.)	9:00 PM	合同委員会 団内打合せ
7	19 (Sat.)	終日	資料整理
8	20 (Sun.)	終日	ミニッツ案作成
9	21 (Mon.)	9:00 PM	獣医学部との打合せ 資料整理
10	22 (Tue.)	9:30 19:00	合同委員会 ミニッツ署名
11	23 (Wed.)	15:30 16:30	JICA事務所報告 大使館への報告
12	24 (Thu.)	20:00	ザンビア発　BA－052
13	25 (Fri.)	6:20	ロンドン着
14	26 (Sat.)	19:45	ロンドン発　JL－402
15	27 (Sun.)	15:30	成田着

1－4　主要面会者

ザンビア側関係者

大統領府

Mr. M. C. Soko	計画開発協力事務局長(Director of Planning and Development Cooperation Office of the President)

教育省（Ministry of Education)

Dr. S. M. Kasanda	事務次官（Permanent Secretary)
Mr. C. F. Chiyefa	次官補（Deputy Permanent Secretary 開発協力担当)
Mr. R. Kusag	次官補（Deputy Permanent Secretary 予算担当)

農業省（Ministry of Agriculture)

Dr. H. G. Chizyuki	獣医・ツェツェ防除局長(Director, Department of Veterinary and Tsetse Control Service)

ザンビア大学　University of Zambia

(大学本部)

Dr. A. A. Siwela (Prof.)	副学長（Vice Chancellar) ＊学長は名誉職であり政治家がその職に就いている、従って副学長が実質的な責任者（学長）である。
Mr. P. Mpande	副学長特別事務補佐官（Special Administration Assistant to Vice Chancellar)

(獣医学部　School of Vererinary Medicine)

Dr. C. E. A. Lovelace (Prof.)	学部長（Dean)
Dr. M. M. Musonda (Sen. Lect.)	副学部長／講座主任（Deputy Dean, Head of Paraclinical Studies)
Dr. H. Chitanbo （Lect. I）	学長補佐（Assistant Dean 学部担当)
Dr. T. R. Ayliffe （Aso. Prof.)	学長補佐（Assistant Dean 大学院担当)
Dr. D. A. Hogg （Aso. Prof.)	講座主任（Head of Biomedical Studies)
Dr. G. Pandey （Aso. Prof.)	講座主任（Head of Disease Control)
Dr. J. O. Omamegbe （Aso. Prof.)	講座主任（Head of Clinical Studies)
Dr. A. Nambota （Lect. II）	教官（Disease Control)
Dr. L. Tuchili （Lect. I）	教官（Disease Control)
Dr. E. T. Mwase （Lect. I）	教官（Paraclinical Studies)

日本側関係者

日本大使館

堀内伸介	全権特命大使
石井香織	二等書記官
古賀達郎	二等書記官

JICAザンビア事務所

江島義徳	所長
小淵伸司	所員

プロジェクト派遣専門家

高取一郎	ウィルス学（長期専門家）
馬場栄一郎	臨床病理学（長期専門家）
松川清	病理／免疫学（長期専門家）
藤倉孝夫	公衆衛生（長期専門家）
花井淳一	業務調整（長期専門家）
長林俊彦	細菌学（長期専門家）
安田準	小動物臨床／外科（短期専門家）

2．要　　約

本巡回指導調査団は、これまでのプロジェクトの活動に対して中間評価を実施し、今後のプロジェクトの運営に適切な指導・助言をすることを目的に派遣された。

本調査団は、中間評価の実施にあたり、専門家及びザンビア側実施機関との間で進捗状況を整理、確認し、この結果に基づいて、今後のプロジェクトの円滑な運営を図るためにAWPの改訂を含む必要な事項についてザンビア側と協議し、確認事項をミニッツに取り纏め、調査団団長とUNZA副学長の間で署名交換した。

2－1　進捗状況と問題点

今回の評価の結果、学部教育により獣医師の養成が継続されていること、コースマスター教育が開始されたこと等、「計画打合せ調査」時に策定したAWPに沿った進捗が確認された。しかし、必ずしもAWPに沿ってスムーズに進捗していないと考えられたプロジェクトの活動もあるところ、それらの問題点を次の通り整理した。

(1) 卒後教育におけるSDF（STAFF DEVELOPMENT FELLOW；教官育成奨学金）制度が主に海外留学という形で行われてきたことから、SDFのプログラムの開発などを実施する状況になかったこと。

(2) 学部教育の維持・強化に対する協力から順次撤退する計画であったが、プロジェクトの中間時点におけるスタッフ配置の状況から判断すると現時点においても早急な撤退が困難であること。

(3) 学部教育の維持・強化に関連し、当初の計画には含まれていなかった教育・研究の指導経験の少ない教官に対する協力（指導）が新たに重要な課題として提議され、ザンビア側からも要請されていること。

(4) プロジェクト開始以来、UNZAの研究活動に対する予算が皆無であり、当初計画した研究課題に沿って殆ど研究が実施されていないこと。

(5) 予算・教官数が十分に確保されていないことから、普及活動として他の組織に対する技術支援等が行える状況にないこと。

(6) 予算及び教官不足の問題から、CPD（Continuing Proffesional Development；卒後補完教育）として計画されたセミナーは1度しか実施されていないこと、また、定期的に実施するための検討がなされていないこと。

(7) ワークショップは独自にIn Service Training（学内研修）を実施するだけの組織造り等、必要とされる環境整備が進んでいないこと。

2－2　今後の活動と留意事項

上述したプロジェクト活動の「進捗状況と問題点」、日本側の投入規模（投入能力）及び、ザンビア人教官の配置状況並びに養成計画の進捗状況等を考慮し、終了時に意義のある協力成果が残せるようAWPの改訂を行った。(別添1のANNEX 6参照)。また、次の点についてザンビア側と合意しミニッツにおいて確認した。

(1) 日本側の投入規模を考慮し、日本の協力する分野は主に疾病予防学講座と基礎獣医学講座とする。

(2) 大学院教育は、現在教官が配置されておらず、また、早急に配置が必要な専門分野に適した知識を持つザンビア人教官を養成することを目的とする。

(3) ザンビア側は、専門家から最大限の協力効果が得られるように、専門家に対するC／Pの配置を考慮した上で、適切な教官養成計画を策定し、実施する。

(4) 専門家の学部教育に対する協力活動を徐々に縮小し、その協力活動を研究活動や大学院教育に移行させる。

(5) 専門家の学部教育に対する活動を縮小するために、ザンビア側は学部間協力（獣医学部と医学部や生物学部等他の学部との協力）の強化に必要な調整を行う。

(6) 大学教育の重要な活動である研究活動を活性化するために、ザンビア側は適切な研究予算を確保する。

(7) ザンビア側は機能的な機材台帳の整備を優先事項として取り組むとともに、機材管理にかかるセントラルサービスと各講座間の連携を強化する。

(8) ザンビア側は優先事項として治安の改善を行う。

(9) ザンビア側は学部運営に関する管理運営能力の強化を行う。

(10) ザンビア側は講座間のバランスを維持するように必要な措置を講じる。

(11) 日本側はチームリーダーを早急に派遣する。

3．中間評価結果

3－1　プロジェクトの進捗状況

今回の中間評価から明らかになったプロジェクトの進捗状況等は次の通りである。

3－1－1　プロジェクトへの投入実績

1992年7月22日から1994年10月1日までのプロジェクトに対する両国の投入実績は以下の通りである。

(1) 我が国の投入実績

① 専門家派遣：26名（詳細は別添1の「ANNEX 1」）

長期専門家 …… 12名

短期専門家 …… 16名

② 協力隊派遣： 5名（詳細は別添1の「ANNEX 1」）

③ 研修員受入：10名（平成6年度分を除く。詳細は別添1の「ANNEX 2」）

④ 機材供与：59百万円（平成6年度分を除く）

⑤ ローカルコスト負担事業：4,920,000円

3件（応急対策費×2件、セミナー開催費×1件）

⑥ 調査団派遣：計画打合せ調査団（92年12月）

(2) ザンビア国の投入実績

① 予算措置：プロジェクトに対する予算としては、大学の学部運営にかかる一般的な予算から特別に分離して計上されたものはない。詳細は別添1の「ANNEX 3」に示す。また、予算関連で注目すべき点として、本プロジェクトが開始された前年の1991年以降、研究費が全く計上されていないことがある。この点についてザンビア側の自助努力を促したい。

② 人員配置：獣医学部には、現在、46の教官ポスト（定員）が設定されている。その内、海外で研修・留学中のザンビア人教官が19名おり大きな数を占めている。現在大学に在籍している教官数は、ザンビア人9名のみ（その内教官として登録されているものが7名、SDFとして登録されているものが2名）、我が国を含めた海外からの協力計画で派遣されている教官が14名、ザンビア側が直接雇用している外国人教官が6名で、計27名である（詳細は別添1の「ANNEX 4」）。

3－1－2　プロジェクト活動の進捗状況、問題点

これまでのプロジェクト活動の指針とされているAWP（計画打合せ調査団により1992年12月に作成）に沿ってプロジェクト活動の進捗状況等を調査した。その結果については別添1の「ANNEX 5」に示している。ここでは、調査結果をAWPの中項目ごとに取り纏めて示した。

(1) 大学院教育プロジェクト（学部卒後教育）

1）大学院教育（コースマスタープログラム）

1994年の1月より第1期生の4名の学生（3名は既に就職した所属先から派遣されているため教官候補とは考えられないが、残りの1名はその資質からも教官候補として期待されている）を受け入れ、大学院教育としてコースマスターの講義・実習が開始された。コースマスターでの履修形態は、1年目は講義・実習、2年目は研究活動となっており、講義は4コースに分けて構成されている。

この講義・実習は20名の教官によって実施され、3名の日本人専門家（高取、馬場、松川）も講義と実習を受け持った。2年目の研究は、大学によって審査認定されたテーマに沿って実施されるが、本調査団派遣時点において、最終的な研究内容の検討が専門家を含めて行われていた。そして、2名の日本人専門家（藤倉、長林）が研究指導に関与する予定である。研究のテーマは次の通りである。

① Mycobactacterilum bovis viability in sour milk processed by the Ila-speaking people of Namwala (Zambia)・・・藤倉専門家指導予定

② Competitive establishment of African trypanosomes in Zambian cattle

③ Isolation of bacterial pathogens from dead-in-shell chicken embryos from local hatcheries・・・長林専門家指導予定

④ Immunohistochemistry for the diagnosis of rabies virus antigen

このように、大学院としてのコースマスターはそのプログラムも開発され、実施体制もほぼ順調に確立されつつある。

現在は4つのコースに分け講義・実習を行っているが、プロジェクト開始以前は6つのコースを計画していた。しかし、本プロジェクト期間は教官数等を考慮し、今後も現行の4コース制を維持することになった。

なお、学生の募集は毎年行っているが、学生の入学は奨学金の有無に大きく影響され、調査団訪問時は、ちょうど来年度の学生の募集中であったが（募集期限の締め切りは11月末日）、奨学金獲得の目処が立っておらず、応募者はいなかった。従って、次回の学生の受入れは、ノルウェーの奨学金の供与が予定されている96年になるものと見込まれ

ている。この点について、今回の調査において、ザンビア側に奨学金獲得の努力をより一層推進するように申し入れを行った。

2）臨床獣医官教育プログラム（HS ； House Surgeon)

HSとしてこれまで3名が受け入れられてきた。しかしながら、プロジェクト内でのHSプログラムに対しての協力活動は、家畜病院と基礎獣医学講座での専門家の活動（家畜診療と病性鑑定活動）に関連した活動に限定され、それほど活発なものではなかった。

このHS制度は大学院へ進むための1年間の実務経験期間を教官候補生に与えることを目的としていた。しかし、大学院進学希望者がHS制度を活用していないことから、協力活動を進めることの意味が不明確となっている。

3）教官開発プログラム（SDF)

現在、この制度によって11名のザンビア人教官が、上級の教官となるために学位を取得することを目的に大学院教育の機会を与えられている。その内2名（当初は3名であったが1名は死亡）が我が国の大学（北大、大府大）での研究活動とザンビアでの専門家の指導による研究活動で学位取得を目指している（いわゆるサンドウィッチ方式による学位取得)。しかしながら、この2名以外の教育は海外での留学という形で実施され、プロジェクトとしての取り組みは行われていない。従って、UNZA内でのSDFに対するプロジェクト活動として当初計画されていた「プログラムの開発」と「授業の実施」は行っておらず、前述した2名に対するいわゆるサンドウィッチ方式における指導以外プロジェクトの活動として行っていない。

今後、UNZA内でのSDF制度を利用したリサーチマスター等による教官養成を検討する必要があると考えられる。

4）PhD（ドクター)コース・プログラム

プロジェクトの開始当初に計画していた「コースプログラムによるPhD授与のためのプログラムの開発」については、活動はなされていない。また、学部教育の維持・強化が重要であるとされ、コースマスターを開始したばかりの段階でのPhDコース・プログラムへの取り組みは時期尚早と言わざるを得ない。

(2) 卒後技術補完研修（CPD)

この課題に対するプロジェクトの活動は、92年度に「セミナー開催費」を活用して実施したセミナー（Zambian Veterinary General Refresher Course）が唯一のものである。

しかし、大学が開催するスクールセミナー等の開催にかかる活動には専門家も関与している。

(3) 獣医学研究活動

プロジェクトの計画として20課題の研究活動が設定されている。更に、現在学部では別添2に示す26課題に対する研究を進めることとなっている（後者の26課題は大学内の研究に関する委員会(Research Advisory Committee)により、承認されたものである)。しかしながら、これら合計46課題に対して専門家の協力による具体的な研究活動はあまり進められていない。

プロジェクトとして計画された20課題の内5課題に対して活動が行われた（ている）(ANNEX 5参照)。しかし、今後のプロジェクトに対する投入規模を考慮すると、計画通り全課題を実施することは困難であると判断される。

研究に関連した専門家の活動として、PhD、MS学位取得のための研究（ドクター：2研究、マスター：2研究）への支援があるが、関与している専門家は限定されている。

研究費は、既に述べた通り1991年以降、大学の予算として全く計上されていない。従って、研究活動に対する経費は、援助国からの支援等に頼っているのが現状である。

なお、専門家（短期も含む）は、これまで幾つかの研究活動を行っているが、それらの研究の大学への登録手続きを行っていないために、正式な研究として取り扱われていないケースが多い。従って、これまでの実績を早急に登録する必要がある。

(4) 学部教育プログラムの維持・強化

獣医学部の学生及び卒業者数は、別添3に示す通り、順調に推移しており、毎年十数名（20名近い人数）の卒業生（獣医師）を輩出している。

プロジェクトの当初計画では、専門家は1994年から段階的に学部教育の活動から撤退する予定であった。しかし、現在、19名のザンビア人教官が海外で学位取得中であるため、専門家の講義・実習への協力が必要とされている。むしろいまだに、この協力が専門家の主要な活動となっている。従って、この分野への協力の必要性が減少しなければ、他の分野への専門家の協力活動を高めることは困難である。UNZAとしても教官の不足を克服する方法として、大学内での学部間協力として、他の学部から教官を招いて講義を実施するなどの努力をしているが、さらに学部内の教官の効率的活用をはかることなどの努力をすれば、専門家への依存度を少なくできる部分がまだ残されているように思われる。

一方、海外で学位を取得し大学に復帰したものの、それまでに十分な講義の経験を持たない教官に対して、専門家が授業内容等の指導をするという形での協力も求められ始めており、このような活動が今後増加すると考えられる。

(5) 獣医学普及サービスの強化

普及活動としての診断ラボの活動は、各講座が連携しながら実施している。この活動に

は専門家も関与しており、教育や研究の現場にその情報をフィードバックするように努力されている。

セミナーは大学の活動として実施されており、専門家もこれまで講演者等の形で協力している。

普及にかかる出版活動は UNZA VET. が学部の独自の出版物として年2回発行されているほか、95年から Zambia VET. Journal の発行が予定されている。

また、他の組織・機関への技術支援が普及活動の一環として計画されていたが、実施された活動としては、他の学部での講義だけである。しかし、この活動において、専門家はほとんど関与しておらず、プロジェクトの活動とは言い難い。

(6) ワークショップの確立

ワークショップの確立という問題以前に整備する必要がある機材の台帳は、セントラルサービスをはじめ、各講座ごとに整備された。しかし、それらの体制は機能的と言い難く、現在も正確な在庫管理等はなされていない。

機材の維持管理体制についても、技術者のレベルの未熟さ、部品等の資機材購入予算の不足等のため十分機能していない。プロジェクトでは IN-SERVICE TRAINING の実施を計画していたが、現時点ではそのような活動を実施するだけの十分な体制は整っていない。

3－1－3　今後の対応策（AWP の改訂）

前述したプロジェクト活動の進捗状況と今後のプロジェクトへの双方の投入規模等を念頭に置き、また、終了時に意義のある成果が残せるよう配慮して、AWP の改訂を行うこととした。

今回の改訂においては、これまでの AWP が多岐にわたる幅広い活動を目指していたものであったことに対して、本プロジェクトの中心的活動項目である①大学院教育、②学部教育、③獣医学研究活動の3つの項目に対する協力内容が明確になるように配慮した。

それら3つの項目についての活動は、次の通りである。

(1) 大学院教育

今回の調査団派遣の準備段階では大学院教育、特に、コースマスターに対する協力について、派遣中の専門家の過重負担及び教官養成の非効率性（コストパフォーマンス）等から、大学院教育への協力体制の見直しも真剣に検討されていた。しかし、今回の調査によって、派遣中の専門家の大学院教育に対するこれまでの協力実績と、それらに基づく自信と意欲が確認され、また、大学が大学院を有することの意義を長期的な視野から検討した結果、当初の計画通り協力を継続することとした。

(2) 学部教育

学部教育への協力は、依然として長期及び短期専門家の中心的活動となっており、これを早急に縮小、撤退へと結びつけることは現実的な対応ではないと判断した。そこで、今後の協力のあり方として、留学中のザンビア人教官の帰任にあわせて、専門家の授業・実習の実施を徐々に減らしながら、教官の質の向上に対する協力も進めることとした。

(3) 獣医学研究活動

獣医学研究活動については、活動内容（研究課題）の絞り込みを行うこととした。具体的な研究課題は今後の検討事項としたが、大学教育に役立つような研究課題を選択すべきであると考えられる。つまり、ザンビア大学獣医学部としては、ザンビア国内（南部アフリカ）における畜産業に貢献できる獣医学の知識を持った獣医師の養成が先ず重要であり、それを可能にするような研究成果を生み出せる研究活動が重要と考えられる。そのためには、野外における家畜衛生にかかる要請に応え得る実際的な調査研究活動に優先的な取り組みを行うことが、現時点で重要であると考えられる。

3－2　プロジェクトの運営実施体制

3－2－1　運営実施体制

プロジェクトの開始以来、機構改革等は行われていない。

運営実施体制は、学部長をヘッドに学部教育と大学院教育を担当する学部長補佐が1名ずつ任命されている。そして各講座の主任が講座内のとりまとめを担当している。しかし、講座内及び講座間の調整は十分でなく、学部運営や講義の実施にかかる情報（シラバス等）の整理・蓄積も不十分であり、専門家を含む全教官の活動等に悪影響を与えている。

3－2－2　各種会議・委員会

現在、学部を運営するために、スクールミーティングが、専門家を含めて月に1回程度開催されている。

また、カリキュラム検討委員会（Curriculum Review Committee）や研究諮問委員会（Research Advisory Committee）等の委員会が設置されており、専門家（長期）も必要に応じて出席を依頼され、その運営に携わっている。しかしながら、これらの委員会は十分機能しておらず、シラバスの適切な整備（作成、改訂）等も進められていない。

3－2－3　援助機関の動向

UNZA 獣医学部に対しては日本のみならず、英国、ベルギー、ノルウェー等の援助が入っている。しかも、これらの援助機関の活動は、本プロジェクトの活動と密接に関係するところが多い。従って、今後のプロジェクトの運営において他の援助機関との調整は極めて重要なものになるものと考えられる。

① ODA（英国）

臨床学講座と生物医学講座に対して実施されていた英国 ODA の支援は、予定通り1996年11月までに終了する予定である。従って、これまで ODA が供与してきた教官養成のための留学の機会もなくなることになった。

② ベルギー

これまで研究活動を中心に獣医学部の協力を行ってきたベルギーが、教官養成をも考慮した大学院教育への協力を検討しており、今後の教官養成活動において我が国との調整の必要性が生じる可能性がある。

③ NUFU（ノルウェー）

NUFU の大学院教育に対しての支援は、奨学金や教官への講義料の援助という形で続けられている。なお、獣医学部大学院教育へのこれらの協力は基本的に隔年実施となっている。

3－3　プロジェクト実施上の問題点と今後の留意点

3－3－1　プロジェクト実施上の問題点

今回の評価の結果から、今後の円滑なプロジェクトの実施を阻害する恐れのある問題として次の事項が考えられる。

(1) 両国の投入規模に対する過剰な協力課題の設定

(2) 学部運営・管理能力（教務事務管理能力）の未熟さ

適切な教官養成計画の策定、シラバス等の学部運営に必要な情報の整理、教官配置の現状や講義日程を勘案した適切な分野の専門家の要請等を行うための教務事務管理能力の未熟さ

(3) ザンビア側の予算の不足

(4) ODA の撤退（講座間のバランスが維持できなくなる可能性の存在）

(5) チームリーダーの不在

1993年７月以降、チームリーダーが不在のまま現在に至っているという事態は、本プロジェクトの存否にもかかわりかねない深刻な問題である。このことが、プロジェクト全体の進捗状況やプロジェクトを取り巻く状況の把握、専門家の意見の取り纏め、ザンビア側

実施機関との調整などにさまざまな悪影響を与え、正常なプロジェクトの運営を困難にしてきたことを認識し、早急に対処すべきである。

また、ザンビア側も、チームリーダーの早期派遣を強く望んでいる。

3－3－2　プロジェクト実施上の今後の留意点

(1) チームリーダーへの支援

チームリーダーの派遣が急務であるが、派遣できた場合においても、チームリーダー不在期間に蓄積していると思われる各種問題の解決には、多大な労力が必要と考えられるところ、各方面からの最大限の支援が必要である。

(2) 協力対象講座について

我が国の投入規模を考慮して、協力の対象は、従来通り基礎獣医学講座と疾病予防学講座を中心とすることと、非対象講座間との格差が生じないようにザンビア側は必要な措置を取ることで、双方が合意した。現在の教官配置状況と英国ODAの撤退等を考慮すると、協力の対象とはしていない生物医学講座と臨床獣医学講座への協力が必要となることも予想されるが、その協力実施については慎重に対処すべきであると考えられる。

(3) 青年海外協力隊の派遣について

本プロジェクト開始以来常時5名の協力隊員が本プロジェクトに派遣されてきたが、現在は2名に減少している。

ザンビア側は今後とも協力隊の派遣を希望していたが、協力隊事務局及びザンビア事務所は、適格な協力隊員のリクルートが困難であること、隊員レベルの技術移転は全て完了したと判断している。従って、今後の協力隊派遣は特別な場合を除いて実施しないものとする。

(4) 学期制度の変更

これまで1月から始まる3学期制により大学は運営されてきたが、1995年より前期・後期の2学期制による運営に変わる予定である。これに伴うシラバスの変更は、1995年に入学する学生から段階的に実施される予定で、獣医学部では1996年の第2学年の学生に対するシラバスから変更が必要となってくる。

なお、95年度の講義・実習に関するスケジュールは別添6の通りである。

(5) 専門家の位置付け

専門家がUNZAに派遣される時の職位（教授、助教授等）については、国内委員会の委員長からの職位についての推薦状を基に学内の会議の場において決定されている。しか

し、UNZAの規程により大学での教育経験の有無が職位決定の基準の一つとされるため、国内委員会委員長の推薦内容と異なり、専門家の専門分野での業績と職位に整合性が保たれていないケースが僅かであるが生じている。このような問題を解決するためには、専門家の派遣に先立ち、国内委員会委員長やJICAからの適切な取り扱いが受けられるよう文書で申し入れることを検討する必要もある。

(6) 教官に対する評価システム

UNZAは質の高い教育を実施することと、教官の旺盛な勤務態度を引き出すために、学生による教官の評価システムを導入することを決定し、94年の第3学期から実施することになった。

この評価システムは、教官の勤務管理（労務管理）を行う客観的な指標とすることも目的としており、昇格等の資料に使われるとともに、94年に問題となった教官のストライキ等が発生した場合の処罰等のための参考資料にも使われる予定であると言われている。別添4は、評価を行う際の様式である。

この評価の対象には専門家も含まれており、今後、専門家のリクルートに不利な材料となる可能性もあるが、現時点では特に問題が生じていない。しかし、この評価については専門家の意向等を十分聞いた上で、場合によっては、何らかの改革を申し入れることも必要である。

(7) 安全管理

プロジェクトで発生している供与機材の盗難問題も含めた治安問題に対し、ザンビア側も大きな関心を示しており、学内に警察詰所を設置することや、警備員の連絡体制を改善するための無線機の購入など、具体的な措置を実施中である。しかしながら、今後とも治安状況に対しては留意する必要がある。

4．総　　括

4－1　中間評価結果総括

(1) 教官養成の進捗状況（学部教育のザンビアナイゼイション）

ザンビア人教官として採用されている28名中、19名のザンビア人教官が海外に留学中であるため、現在のザンビア人教官の配置は９名である。従って、現時点では十分な数のザンビア人教官の配置は実現されていない状況にある。しかし、本プロジェクトの協力期間が終了する1997年末には、現在留学中の教官のほとんどが帰国予定であることから、少なくとも28名のザンビア人教官が確保される見通しである。この教官数は現在獣医学部で活動している全ての教官数（27名…専門家等外国人を含む）を上回るものであり、現在の教育内容を維持し得る最低限の教官の確保は可能と考えられる。

今後の教官養成については、現在採用しているザンビア人教官の数とザンビア大学が独自に雇用する外国人教官の数（現在６名）を考慮した上で、養成すべき教官数を検討する必要があるが、その数は10～15名程度になると考えられる。なお、今後の教官養成計画を策定する際には、教官の不足している分野等を十分に考慮する必要がある。

学部教育への協力は、依然として長期及び短期専門家の中心的な活動であり、ザンビア側からも当分野への協力に対する強い期待が示されていた。従って、学部教育への協力から早急に撤退することは、現実的な対応ではないと判断された。

今後の学部教育への協力活動としては、海外留学から帰国した教育経験の少ないザンビア人教官への指導協力も重要になることが予想される。

(2) 大学院教育の進捗状況

２年間のコースマスターの教育が1993年１月より開始され、４名の学生に対して１年目の履修科目である講義・実習を終了し、２年目の研究活動の準備を行っている。従って、コースマスターの実施体制は、ほぼ整備されたものと考えられる

教官養成のための大学院教育（コースマスター）の確立が本プロジェクトの主要課題であり、ザンビア側もこの分野への協力を望んでいたが、依然として学部協力から手を抜けない現状と我が国からの投入規模を考慮すると、コースマスターを含めた大学院教育への関与が専門家の荷重負担に繋がる可能性について危惧されていた。そして、大学院学生の数の少なさに起因する非効率性も検討課題と考えられていた。しかし、今回の調査において専門家と意見交換したところ、専門家の努力によりコースマスター教育への協力を継続することが可能であると判断されるとともに、長期的な視野に立った場合、教育研究機関としての大学が

大学院を有していることの意義が再確認され、当初の計画通り、大学院教育への協力を今後とも継続することとした。

(3) 研究活動

1991年以降、獣医学部の研究に対するザンビア側の予算は全く計上されていない。このような状況にもかかわらず、UNZA 獣医学部は多くの研究課題を掲げているが、実際には研究活動が全く行われていないものが少なくない。

本プロジェクトにおいて計画された研究活動項目は極めて多岐にわたっており（20課題がプロジェクトの研究活動として計画されていた）、日本側の投入規模、ザンビア側の教官配置状況と研究予算の実態を考慮すると、その内容について再検討する必要があると判断された。

また、当プロジェクトの目的が獣医学教育に関するものであることから考えて、研究成果は大学教育に役立てられるべきものであり、南部アフリカでの獣医学に対する社会の要請に応え得る知識を持った獣医師の養成を可能にすることが重要であると考えられる。そのためにはザンビアのフィールドにおける情報の収集・解析に焦点を当てた調査研究活動を重視する必要があると考えられる。

4－2 提　言

(1) 適切な教官養成計画の策定

これまでザンビア側は、プロジェクトの目的である教官養成を主に海外留学という方法で行ってきた。しかし、大学院教育が UNZA 内で開始され成果を上げつつあること、そして、英国 ODA が獣医学部に対する協力から撤退することによって、今後、海外留学の機会が著しく減少することなどを考えると、UNZA 内で教官を養成するシステムを確立することが重要かつ現実的であり、これがザンビアナイゼイションへの道でもある。

また、教官養成に関し、これまで UNZA は数の確保に重点を置き、専門分野のバランスについてはあまり配慮してこなかった。そのために、特定の専門分野での教官の重複や不在という現象が生じている。従って、近い将来の教官数の確保にある程度の目処が立った現在、UNZA は獣医学部の教育機能を偏りなく充足するために欠くことの出来ない分野の教官を優先的に養成することを考えなければならない。

(2) コースマスターにおける研究課題

コースマスターの２年次の課程では研究活動を行う。その研究の課題は大学により審査認定されるものであるが、基本的に学生が希望する研究を行うことになっている。従って、学生の選択した課題によっては学生に対する指導教官役を専門家が担当しないことが予定され

る。このことは専門家の協力活動を学部教育から大学院教育や研究活動に移行させることと相反するものである。また、教官養成の観点からは、専門分野に関する計画性を無視した教官養成に繋がる。従って、研究課題の選択期間となる1年次の課程において、専門家が十分な指導が行えるようにカリキュラムの変更も必要であると考えられる。

(3) リーダーの業務について

ザンビア側は、チームリーダーにも専門分野の技術指導を希望している。しかし、本プロジェクトにおけるチームリーダとしての業務は極めて多様かつ重要なものであることを考慮すると、チームリーダーによる専門分野への技術指導の実施（兼務）は慎重に対応すべきであると考える。

(4) セミナー開催に対する支援の強化

プロジェクトが開始されてから、大学の活動としてスクールセミナー等が数回開催されている。この活動に対する専門家のかかわりは大きなものではなかったが、これらのスクールセミナーの開催は大学の活性化のためにも重要なものと考えられる。また、これまでの現地業務費によるセミナー開催に対する支援が小規模であったことを考えると、今後のプロジェクト活動の中で、協力成果の普及・広報等の目的で現地業務費による支援の強化を検討する必要がある。

(5) そ の 他

今回の中間評価に際し、評価に対するザンビア側と日本側の考え方に食い違いのあることが明らかになった。即ち、日本側は評価をプロジェクトの枠組みの中で、行うべきと考えているのに対し、ザンビア側はプロジェクトの枠組みを超えて学部全体の活動の中で評価しようとした。つまり、ザンビア側は、多数の教官(教官候補生を含む)を海外留学させながらも、専門家の支援により順調に学部運営が行われ、また、大学院教育も実施できていることを高く評価したが、このような評価は、技術協力に対する正しい評価とは言い難く、むしろ役務供与に対する評価になりかねない。従って、今回に調査では、プロジェクト活動が、役務供与でなく技術協力であること、評価はプロジェクトの枠組みの中で行われるべきものであることをザンビア側に説明し、理解してもらうところから協議が始まった。従って、今後のプロジェクトの運営に対しても、技術協力の枠組みを適切に理解してもらえるような努力を継続することが重要である。

このような誤解が生じた原因は、本プロジェクトが大学における教育活動も協力活動としたもので、一般の技術協力案件（プロジェクト方式技術協力）とは異なった性格を有することにもかかわっている。

添　付　資　料

1．調査団ミニッツ

2．研究課題リスト

3．学生数リスト

4．卒業生の就職先

5．教官評価の様式

6．95年の学期予定

7．獣医学部ハンドブック

添付資料１．調査団ミニッツ

MINUTES OF DISCUSSIONS BETWEEN THE TECHNICAL GUIDANCE TEAM AND THE AUTHORITIES CONCERNED OF THE REPUBLIC OF ZAMBIA ON THE UNIVERSITY OF ZAMBIA; VETERINARY EDUCATION PROJECT(PHASE II)

The Japanese Technical Guidance Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as" JICA") headed by Prof. Masuo Ogawa, Professor, Department of Veterinary Medicine, Faculty of Agriculture, Tokyo University of Agriculture and Technology, visited the Republic of Zambia from November 15th 1994.

The Team conducted an overall review and interim evaluation on the performance of the University of Zambia; Veterinary Education Project (Phase II)(hereinafter referred to as "the Project") and to provide necessary advice for the smooth implementation of the Project.

The Team had a series of discussions with the relevant authorities of the Government of the Republic of Zambia from the technical and administrative points of view and jointly held the Joint Coordinating Committee.

As a result of the discussions, the Team and the Zambian authorities agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Lusaka, November 22, 1994

Prof. Masuo Ogawa
Leader
Technical Guidance Team
Japan International Cooperation Agency
Japan

Prof. Andrew A. Siwela
Vice-Chancellor
University of Zambia
Republic of Zambia

witnessed by:

Mr. M. C. Soko
Director(ETC)
Planning and Development Cooperation
Office of the President
Republic of Zambia

The Attached Document

I. Summary of Interim Evaluation

1. Project Description

In the Republic of Zambia the Livestock Industry has been one of the important sectors for the development of the country's economy. To enhance the Livestock Industry, an increase in the number of veterinarians and strengthening of the animal health system was required.

In 1982 the Government of the Republic of Zambia requested the Government of Japan for the grant aid of the facilities of the School of Veterinary Medicine (hereinafter referred to as "the School") to the University of Zambia (hereinafter referred to as "UNZA") and the Project Type Technical Cooperation to establish veterinary education in the country.

In response to the request of the Government of Zambia, the Government of Japan donated the grant aid total amounting to 3,883 million Japanese Yen from 1984 to 1985 and implemented the Project Type Technical Cooperation from January 22, 1985 to July 21, 1992.

The title of this technical cooperation is the University of Zambia; Veterinary Education Project (hereinafter referred to as "the Phase I Project"), and the objective of the Phase I Project was the establishment and maintenance of internationally recognized standards of veterinary education at the University of Zambia. During the period of the Phase I Project, the basic Undergraduate Education Programme was established and 59 veterinarians graduated.

However, the education programme was carried out with cooperative activities of many non-Zambian academic staff, so that, there was necessity of establishment of academic staff development programme at the school. In this circumstance the Government of the Republic of Zambia requested the Project Type Technical Cooperation ; University of Zambia, Veterinary Education Project (Phase II) which aimed at producing Zambian academic staff, and the Government of Japan and the Government of the Republic of Zambia signed the Record of Discussion (hereinafter referred to as "the R/D") for the Project on July 8, 1992. The period of the Project is from July 22, 1992 to July 21, 1997.

The outline of the Project described in the R/D is as follows.

(1) Objectives of the Project

The Project aims, through technical cooperation, at establishing the postgraduate education programme in order to produce Zambian academic staff, while strengthening the veterinary research and extension activities.

At the same time, the Project also aims at maintaining and strengthening the undergraduate education programme which had been already established.

(2) Activities of the Project

To achieve the objectives of the Project, the following cooperative activities are carried out.

1) Establishment of postgraduate education programme
2) Strengthening of research activities
3) Maintenance and strengthening of undergraduate education programme
4) Strengthening of extension services

Along the R/D and the Annual Work Plan (hereinafter referred to as "AWP") formulated on December 18, 1992, the Project has been implemented to date.

2. Objectives of Interim Evaluation

The aims of this Interim Evaluation is to assess the accomplishment of the Project at the middle of the Project period and to make recommendations on the Project activities in the remaining period of cooperation to the relevant authorities of both Governments.

3. Method of Interim Evaluation

This evaluation was conducted in accordance with the R/D and AWP by the Team and Zambian authorities through interviews and discussions with personnel involved in the Project.

The following items were considered for evaluation;

(1) Input to the Project

(2) Project activities(along AWP)

4. Evaluation result

(1) Input to the Project (From January 22,1992 to date).

1) From the Japanese side

a) Dispatch of experts and JOCV members

12 Long term experts, 36 Short term experts and 5 JOCV members have been dispatched. The detail is shown in ANNEX 1.

b) Acceptance of Couterpart Trainees

8 Zambian staff have been accepted and trained under counterpart training programme. The detail is shown in ANNEX 2.

c) Provision of Equipment

Equipment valued at 75million Japanese Yen were provided to the Project from July 22 1992 to date.

d) Local Running Costs

i) Equipping the Lifting Gantry and the Mobile Operation Table at the Post-Mortem Room

1,460,000 Japanese Yen was spent on the equipping the Lifting Gantry and the Mobile Operation Table at the Post-Mortem Room using the JICA Emergency Expense Budget in 1992 fiscal year.

ii) Rehabilitation of the Sewage Treatment Facility

2,530,000 Japanese Yen was spent on the rehabilitation of the sewage treatment facility using the JICA Emergency Expense Budget in 1993 fiscal year.

iii) Assistance for Seminar

930,000 Japanese Yen was spent for conducting the seminar in the School using the Seminar Holding Funds in 1992 fiscal year.

e) Dispatch of Survey Mission

i) Consultation Survey Mission

Consultation Survey Mission consisting of 4 members was dispatched from 10 to 24 December, 1992 in order to formulate the AWP.

2) From the Zambian side

a) Allocation of Budget

The budget for the Project is not separated from the School general budget, and therefore it is difficult to indicate the actual budget allocated to the Project. The details of the School general budget for the School is shown in ANNEX 3.

b) Allocation of Personnel

Allocation of academic staff is shown in ANNEX 4. As of November 22, 1994, 20 academic staff excluding House Surgeon and Japanese personnel and 38 technicians are in appointment. 20 Zambian academic staff are currently abroad for their training. By November 22, 1994 only 2 Zambian academic staff are allocated as the counterpart personnel to 2 Japanese experts, and 2 Zambian technicians are allocated as the counterpart personnel to JOCV members.

(2) The Project Activities

The Project activities which have been implemented to date are described in ANNEX 5.

(3) Conclusion

1) The main objective of the Project can be interpreted as the staff development of Zambian counterpart personnel through technical guidance by the Japanese experts at UNZA. However, in the current situation of the Project, Japanese experts seem to be expected to give lectures directly to the undergraduate students instead of Zambian academic staff who are under the overseas training. This situation might be continued until Zambian academic staff will return to UNZA after completion of the overseas staff development training. However this is not the intention of the Project objectives. Therefore the establishment and implementation of the intended staff development plan is necessary in order to derive maximum efficient result from cooperation activities.

2) However, it is important to note that there are a number of positive achievements under Phase II of the Project.

3) Zambian academic staff undergoing Ph.D. training both in Japan and elsewhere has increased as has number of staff undergoing M.Sc. training, so that a total of seventeen Zambian staff are expected to take up their teaching duties over the next three to four years. In all, the complement of Zambian staff has over the last eight years risen to over fifty percents, including those on training.

4) With the assistance of Japanese experts a number of research project have been undertaking and published. Collaboration with other agencies has been growing under the guidance of Japanese experts.

5) Currently there are six postgraduate students in the University, two in collaboration with Japanese universities at Ph.D. level, and four locally at M.Sc. level under the guidance of Japanese experts.

6) Workshop inventory system has been developed though not yet functional. Number of technical staff have also undergone specialized training in Japan.

7) Though 9 areas of Veterinary Research Activities in the Project are identified in the current AWP, only limited activities have been carried out due to budgetary constraints. Also although number of JICA experts carried out substantial amount of research, they have not been published due to time constraints. Other remaining activities seem to be difficult to be implemented in the remaining period. This situation has been caused by both budgetary constraints and high turn over of academic staff.

8) According to current AWP, contribution of Japanese experts should be gradually decreased in the direct lecturing to the undergraduate students from the third year of the Project period and shifted to other areas towards the end of the Project. However Japanese experts are still requested to give lectures to the undergraduate students directly until there are sufficient Zambian academic staff.

9) Though efforts have been made towards technology transfer for maintenance of equipment by Japanese experts, the Workshop inventory system has not been well developed. In-Service Training has not been done due to lack of suitable Zambian counterparts.

10) The computerized inventory system established is not yet functional so that stock of the equipment and consumable items are not being monitored efficiently.

11) Most of the Project activities connecting to CPD and the extension services have been carried out by the School in collaboration with Veterinary and Tsetse Control services, Veterinary Association of Zambia and Commercial Farmers Union with the assistance of major livestock producers in the country and JICA Experts.

12) The reasons for stated constraints on the implementation of the Project can be attributed to the lack of clarity in some of the cooperative activities and their stipulated targets, and too many items of the Project activities in the current AWP. Therefore, the current AWP should be clarified with substantial modification, taking into account of the capacity of inputs by both sides.

13) Japanese cooperation activities to the undergraduate education programme have contributed significantly to maintaining the programme.

II. The Undertaking

1. In consideration of the above mentioned evaluation results, the revised AWP is formulated as shown in ANNEX 6 and the Project will be implemented along this new AWP.

2. Taking into consideration of the constraints in the Project and the capacity of input from Japanese side, Japanese technical cooperation should focus mainly on the Departments of Paraclinical and Disease Control as specified in the R/D.

3. The Project activities for postgraduate education programme should aim at supplying the immediate demands for Zambian academic staff development within the framework of the R/D.

4. The Zambian side should formulate and implement an intended and adequate plan for development of Zambian academic staff and technicians in order to allocate counterpart personnel to Japanese experts so as to derive maximum benefits from the cooperation.

5. The Japanese contribution to the direct lecturing to the undergraduate students will be gradually reduced, and shifted to other areas including technology transfer, research and postgraduate training.

6. In order to assist the reduction of undergraduate teaching by Japanese staff, the Zambian side should make arrangements for strengthening inter-Departmental lecturing cooperation.

7. An adequate budget is necessary for further promotion of research activities, which is a significant component of veterinary education in the school. As a matter of priority, the University will provide funding to support research.

8. The Zambian side should as a matter of priority establish functional inventory system for the equipment and should take necessary action to establish a linkage between the Central Services and each Department for efficient use of the equipment.

9. The Zambian side should improve security in the school as a matter of priority.

10. The Zambian side should enhance administrative capability of the School.

11. The Zambian side should take the necessary measures to keep a balance among all departments in respect of budget, staff allocation, etc.

12. The Japanese side should dispatch a Team Leader as soon as possible and strive to maintain full complement of Japanese experts of staff.

Ⅲ. Others

1. The following comments on the research activities were stated by both sides;

(1) The Team stated that the epidemiologic survey on animal diseases and research on appropriate diagnostic technology should be promoted.

(2) The University felt that animal diseases of economic importance should be a priority, and that the School would benefit from advanced diagnostic and other research techniques available in Japan, it is expected that Japanese professors would collaborate with Zambian staff and postgraduate students in research, as students should be involved in survey work.

Dispatch of long-Japanese Experts

No.	Name	Speciality	Period
1	Prof. Yoshiatu TSUTSUMI	Leader & Parasitology	1992/07/22--1993/07/22
2	Prof. Takashi KAJI	Virology	1992/07/22--1993/04/13
3	Prof. Ichiro TAKATORI	Virology	1992/01/27--(1995/01/26)
4	Prof. Kosaku KOBAYASHI	Paraclinical	1992/11/01--1993/12/31
5	Mr. Osamu KOSEGAWA	Coordinator	1992/07/07--1992/08/26
6	Mr. Keizo EGAWA	Coordinator	1992/08/11--1994/10/11
7	Mr. Mitsuaki KADONO	Maintenance of Equipment	1992/07/07--199401/21
8	Prof. Eiichiro BABA	Clinical Pathology	1993/12/12--(1994/12/11)
9	Prof. Kiyoshi MATSUKAWA	Pathology	1994/05/22--(1996/05/21)
10	Prof. Takao FUJIKURA	Public Health	1994/06/15--(1996/06/14)
11	Prof. Toshihiko NAGABAYASHI	Bacteriology	1994/09/15--(1996/09/14)
12	Mr. Junichi HANAI	Coordinator	1994/09/25--(1996/09/24)

( ) Projected

Dispatch of Short-Japanese Experts

No.	Name	Speciality	Period
1	Prof. Misao ONUMA	Parasitology	93/02/14--95/05/07
2	Prof. Tadao IMADA	Avian Disease	93/05/09--93/08/01
3	prof. Bunei SYUTO	Pathology	93/05/18--93/08/14
4	Prof. Takao KOTANI	Chical Pathology	93/05/23--94/08/27
5	Prof. Syoji YAMAZAKI	Veterinary Education	93/05/18--93/08/20
6	Prof. Keiichiro KAWATA	Animal Reproduction	93/07/27--93/11/12
7	Prof. Hiroshi KITAKAWA	Veterinary Education	93/07/18--93/10/17
8	Prof. Toshikatsu HASEGAWA	Public Health	93/08/03--93/10/01
9	Prof Nobuo HASHIMOTO	Public Health	94/02/06--94/03/31
10	Prof. Chihiro SUGIMOTO	Microbiology and Immunology	94/06/22--94/09/09
11	Prof. Kiyoshi TAKAHASHI	Clinical Pathology	94/07/19--94/09/30
12	Prof. Yoshiharu HASHIMOTO	Histology	94/07/19--94/08/29
13	Prof. Hiroyuki SUNAGAWA	Environmental Public Health	94/07/19--94/10/16
14	Prof. Hiroshi KODAMA	Poultry Diseases and Aquatic Animal Medicine	94/07/10--94/09/30
15	Prof. Mitsutoshi YOSHIDA	Reproduction	94/07/19--94/10/16
16	Prof. Jun YASUDA	Small Animal Medicine	94/09/20--94/12/08

( ) Projected

Dispatch of JOCV Members

No.	Name	Speciality	Period
1	Dr. Kei HIROWARTARI	Public Health	92/07/22--93/12/09
2	Dr..Miyako HIRAI	Clinical Pathology	92/07/14--94/07/13
3	Dr. Tsutomu KAKUTA	Parasitology	92/07/14--94/07/13
4	Dr. Masami HASEGAWA	Virology	92/12/08--(94/12/07)
5	Dr. Masayuki YOSHIMA	Pathology	93/07/13--(95/07/12)

( ) Projected

ANNEX 2

Training Counterpart in Japan

No.	Name	Subject	Period	JICA/JOCV
1	Ms. J. MULEYA	Small Animal Medicine	92/07/01--93/03/14	JICA
2	MS. E.T. MWASE	Entomology	92/07/13--92/10/29	JICA
3	Mr. H. SINSUNGWE	Lab. Diagnostic method in Parasitology	92/07/27--93/03/31	JICA
4	Dr. A. NAMBOTA	Vet.Parasitology	93/06/21--94/03/21	JICA
5	Dr. L.M. TUCHIRI	Poultry Diseases	93/06/21--94/03/21	JICA
6	Mr. F. CHITANDO	Pharmacy	93/06/21--94/03/21	JICA
7	Mr. A. CHOTA	Lab.Dagnostic in method in Parasitology	93/06/21--94/03/21	JICA
8	Mr. G. SIKAZWE	Vet.Physiology and Phamcology	93/07/12--94/04/20	JICA
9	Mr. S. TINGIYA	Vet.Clinical Technology	92/06/05--93/03/31	JOCV
10	Dr. M.NYAMBE	Vet. Medecine	94/06/01--(95/03/31)	JOCV

ANNEX 3 Budget of the School of Veterinary Medicine

		91	92	93	94 (Budget)	95 (Proposed Budget)
Administration	Personnel	2,642,652	9,083,216	16,282,561	26,201,940	
	Fuel. Electricity	273,000	512,038	564,248	2,400,000	
	Materials	153,518	359,676	699,131	2,780,853	
	Others	3,716,022	1,186,419	5,887,096	18,109,000	
	Sub Total	6,785,192	11,141,349	23,433,036	49,491,793	
Biomedical Sciences	Personnel	2,496,823	6,846,665	33,119,641	41,112,720	
	Material	23,975	170,695	737,804	6,102,166	
	Research	-	-	-	-	
	Fuel. Electricity	-	-	-	-	
	Maintenance	-	-	-	-	
	Others	18,600	187,560	160,000	1,312,000	
Panaclinical Studies	Personnel	1,546,576	5,185,354	21,481,708	38,346,732	
	Material	229,236	1,053,651	761,125	3,099,100	
	Research	-	-	-	-	
	Fuel. Electricity	-	-	-	-	
	Maintenance	-	-	-	-	
	Others	18,600	131,292	11,250	34,000	
Disease Control	Personnel	1,678,430	5,103,253	23,833,610	21,431,708	
	Material	26,065	285,256	1,386,617	4,894,375	
	Research	-	-	-	-	
	Fuel. Electricity	-	-	-	-	
	Maintenance	-	-	-	-	
	Others	18,600	187,560	160,000	400,000	
Clinical Studies	Personnel	1,889,924	5,995,754	36,022,743	46,961,496	
	Material	111,727	1,176,140	1,908,055	10,348,819	
	Research	-	-	-	-	
	Fuel. Electricity	-	-	-	-	
	Maintenance	-	-	-	-	
	Others	15,500	129,166	1,160,000	2,700,000	
Control Service	Personnel	1,518,067	2,123,708	18,868,814	38,362,116	
	Material	-	-	4,040,611	30,709,000	
	Research	-	-	-	-	
	Fuel. Electricity	-	-	-	-	
	Maintenance	-	-	-	-	
	Others			160,000	1,250,000	
GRAND TOTAL		23,202,507	50,858,752	190,678,850	350,213,025	

ANNEX 4
Staff Allocation of The School of Veterinary Medicine

DISEASE CONTROL *Establishment: 11*

Staff						Staff development (previous & present)									
Post	Name	Position	Degree	Nationality	Sponsor	Training Institution	Higher degree	Sponsor	Training period	Presence at UNZA 94	95	96	97	98	Remarks
Clinical Pathology	G.S. Pandey	Assoc Prof	DVM MVSc	Indian	UNZA										PGP
Clinical Pathology	E. Baba	Assoc Prof	DVM PhD	Japanese	JICA										PGP
Clinical Pathology	M. Syakalima	Lect. III SRF	BVetMed MSc	Zambian	UNZA	Edinburgh Hokkaido	MSc PhD	ODA Japan	91-92 93-97	P	P	P	P	P	
Public Health	T. Fujikura	Assoc Prof	DVM PhD	Japanese	JICA										PGP
Public Health	R. Mulala	SDF	BVetMed	Zambian	UNZA	London	MSc	ODA	94-95	M	M	M	M	??????	
Virology	I. Takatori	Prof	DVM PhD	Japanese	JICA										PGP
Virology	A. Mweene	Lect. III SRF	BVetMed MSc	Zambian	UNZA	Surrey Hokkaido	MSc PhD	ODA Japan	89-90 92-96	P	P	P	P	P	
Virology	H. Hasegawa	Lect. III	DVM	Japanes	JOCV										
Microbiology	L. Tuchili	Lect. I	DVM MSc	Zambian	UNZA	Surrey Osaka	MSc PhD	FAO Jap/UNZA	88-89 93-97	P	P	P	P	P	
Parasitology	A. Nambota	Lect. II	DVM MSc	Zambian	UNZA	Leipzig Hokkaido	MSc PhD	GRZ Jap/UNZA	85-86 93-97	P	P	P	P	P	
Epidemiology	K. Samui	Lect. II SRF	DVM MSc	Zambian	UNZA	USA Louisiana	MSc PhD	FAO UNZA	85-86 92-96	P	P	P			
Epidemiology	P. Chilonda	SDF	BVetMed	Zambian	UNZA	Reading	MSc	ODA	93-94	M	M	M	??????	??	Possible sandwich PhD at UNZA /Reading
Epidemiology	J. Mlangwa	Sen. Lect.	BVM MSc PhD	Tanzanian	UNZA								??????	??	

Staff Development Fellows (SDF) are not on staff as lecturers until appointed after returning.
Staff Development fellows are sponsored while away by both their scholarship and their UNZA salary.
SRF = Special research Fellow; M = Master's training; P = PhD training; PGP = teaching on Postgraduate Programme. GRZ = Zambian Government.
? = Unknown future regarding next contract or next training.

PARACLINICAL STUDIES

Establishment: 10

Staff

Staff development (previous & present)

Post	Name	Position	Degree	Nationality	Sponsor	Training Institution	Higher degrees	Sponsor	Training period	Presence at UNZA 94	95	96	97	98	Remarks
Pathology	M.M. Musonda	Sen. Lect.	DVM PhD	Zambian	UNZA	Azabu	PhD	Japan	86-90	----	----	----	----	----	PGP
Pathology	K. Matsukawa	Prof	DVM. PhD	Japanese	JICA					----	----	----			PGP
Pathology	R.N. Sharma	Prof	MVSc PhD	Indian	UNZA					----	----	----	??	?????????	PGP
Pathology	I. Bhaiyat	SDF	BVetMed	Zambian	UNZA	Hokkaido	PhD	Japan	89-95	PPPPPPP	----	----	----	----	
Pathology	Oshima	Lect. III	DVM. MSc	Japanese	JOCV					----	----				
Entomology	E. Mwase-Ngulube	Lect. I	BSc PhD	Zambian	UNZA	London	PhD	FAO	85-87	----	----	----	----	----	PGP
Protozoology	H. Chitambo	Lect. I	BSc PhD	Zambian	UNZA	Osaka	PhD	Japan	87-90	----	----	----	----	----	PGP
Parasitology	A. Mulenga	Lect. III SRF	BVetMed MSc	Zambian	UNZA	Liverpool Hokkaido	MSc PhD	ODA Japan	92-93 94-98	---PPP	PPPPP	PPPPP	PPPPP	PPPPP	
Microbiology	T. Nagabayashi	Prof	DVM PhD	Japanese	JICA					----	----	----			
Immunology	B. Namangala	SDF	BVetMed MSc	Zambian	UNZA	London	MSc	ODA	93-94	MMM-	----	----	?	?????????	
H/Surgeon	C. Nyeleti	H/Surgeon	MSc	Zambian	UNZA	-	-	-	-	----	--				

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? = Unknown future regarding next contract or next training.

BIOMEDICAL SCIENCES

Establishment: 11

Staff development (previous and present)

Post	Name	Position	Degree	Nationality	Sponsor	Training institution	Higher degrees	Sponsor	Training period	Presence at UNZA 94	95	96	97	98	Remarks
Anatomy	DA. Hogg	Assoc Prof	BVMS PhD	British	UNZA/ ODA					------	------				
Anatomy	R.K. Gupta	Lect. I	MVSc	Indian	UNZA					----------		???	?????	?????	
Anatomy	G. Muwanga	Lect. II	MSc	Ugandan	UNZA					----------		?????	?????	?????	
Anatomy	C. Mowa	SDF	BVetMed	Zambian	UNZA	Glasgow	MVM	ODA	93-94	MMM-	----------	-------	?????	?????	
Anatomy	D. Liswaniso	SDF	BVetMed	Zambian	UNZA	Glasgow	MVM	ODA	95-96	------	MMMM	----------	----------	?????	
Biochemistry	C.E.A. Lovelace	Assoc Prof	BSc PhD	British	UNZA/ ODA					----------		----	?????	?????	PGP
Biochemistry	Z. Nhungulu	Lect. II	BSc PhD	Zambian	UNZA	UNZA/ ILRAD	PhD	UNZA/ ILRAD	86-92	----------					
Physiology	C. Bishonga	Lect. III	BVetMed MSc	Zambian	UNZA	Aberdeen	MSc	ODA	92-93	----------	PPP	PPPPP	PPPPP	PPPPP	
Physiology	K. Makondo	SDF	BVetMed	Zambian	UNZA	Glasgow	MVM	ODA	95-96		MMMM	----------	----------	??????	
Pharmacology	K. Choongo	Lect. III/SRF	BVetMed MSc	Zambian	UNZA	Surrey Edinburgh	MSc PhD	ODA Sait Trust	91-92 94-97	------	PPPPPP	PPPPP	PPPP-	----------	

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? = Unknown future regarding next contract or next training.

CLINICAL STUDIES *Establishment: 14*

Staff | Staff development (previous & present)

Post	Name	Position	Degree	Nationality	Sponsor	Training Institution	Higher Degree	Sponsor	Training period	Presence at UNZA 94	95	96	97	98	Remarks
Surgery	J.O. Omamegbe	Assoc Prof	DVM MSc	Nigerian	UNZA					----------	----------	----	????????	??????	
Surgery	J. Muleya	Lect. II SRF	BVetMed MVM	Zambian	UNZA	Glasgow Tokyo	MSc PhD	ODA Japan	90-91 94-98	----P	PPPPPP	PPPPPP	PPPPPP	PPPPP	
Medicine	P.D. Sayer	Assoc Prof	BVMS FRCVS	British	UNZA /ODA					----------	----------	----------			
Medicine	J. de Sont	Sen. Lect.	?	Belgian	Belgium					----------	----------	----------			
Medicine	T. Mwanza	Lect. II SRF	DVM MSc	Zambian	UNZA	Leipzig Hokkaido	MSc PhD	? Japan	? 93-97	PPPPP	PPPPPP	PPPPPP	PPPPPP	----------	
Medicine	I.G.K. Phiri	Lect. II SRF	DVM MSc	Zambian	UNZA	Leipzig Edinburgh	MSc PhD	? C'wealth	? 93-96	PPPPP	PPPPPP	PPPPPP	----------	----------	
Medicine	P. Meeuws	Lect. III	?	Belgian	UNZA/ VVOB					----	----------	----------			
Medicine	Yasuda	Short term	DVM PhD	Japanese	JICA					----					
Medicine	M. Mumeka	SDF	BVetMed	Zambian	UNZA	Edinburgh	MSc	ODA	94-95	M	MMMMM	----------	----------	??????	
Medicine	K. Nalubamba	SDF	BVetMed	Zambian	UNZA/ Belg	UNZA	MSc	UNZA/ Belg	94-95	MMM	MMMMM	----------	----------	??????	
Medicine	C. Hankanga	SDF	BVetMed	Zambian	UNZA	Glasgow	MSc	ODA	94-95	M	MMMM	----------	----------	??????	
Theriogenology Pharmacology	T.R. Ayliffe	Assoc Prof	BSc BVetMed PhD	British	UNZA /ODA					----------					PGP
Theriogenology	A. Mwanza	Lect. II	DVM FRVAC	Zambian	UNZA	Sweden	FRVAC	SIDA/ FAO	89-90	----------	???????	?????	?????		
Theriogenology	O.V. Patel	Lect. III SRF	BVetMed MVM	Zambian	UNZA	Glasgow Tokyo	MVM PhD	ODA Japan	89-90 91-96	PPPPP	PPPPPP	----	----------	----------	
Theriogenology	V. Zulu	SDF	BVetMed	Zambian	UNZA	Edinburgh	MSc	ODA	94-95	M	MMMM	----------	----------	?????	
H/Surgeon	L. Chiti	H/Surgeon	BVetMed	Zambian	UNZA					----------					
H/Surgeon	M. Muzyamba	H/Surgeon	BVetMed	Zambian	UNZA					----------					

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ANNEX 5

PROJECT ACTIVITIES

PROJECT ACTIVITIES	ACTIVITIES IMPLEMENTED	REMARKS
1. Postgraduate Education Programme (1) Master Course Programme i) Programme Development ii) Course Establishment	i),ii) The M.Vet.Med.programme has been developed and consisted of 4 taught courses and research. There were 4 students.	i),ii) The current programme aims to produce M.Vet. Med. graduate with speciality in Diagnostic Veterinary Medicine. Research guidance within the programme should be strengthened. In future new programme for producing M. Sc holders as academic staff with speciality should be considered.
iii) Lecture to the Postgraduates - Diagnostic Pathology - Clinical Microbiology - Clinical Parasitology -Scientific Methodology	iii) 20 academic staff gave lectures to the students. 3 of these 20 academic staff were Japanese experts.	iii) The contribution from Japanese experts besides lecture should be considered. Two Japanese experts are to be appointed as supervisors for research activities.
iv) New Course Development	iv) As the Project activities, no specific activities has been done.	iv) In consideration of staffing, development of existing programme has a priority.
(2) House Surgeon Programme i) Programme Development ii) Lecture to the Postgraduates	i),ii) The 3 HS were accepted since July 1992. The special lecture to HS were not given. HS were trained on their practical duties. Japanese experts have contributed in small way.	i),ii) This is an informal programme and is not connected to staff development.

PROJECT ACTIVITIES	ACTIVITIES IMPLEMENTED	REMARKS
(3) SDF Programme i) Programme Development ii) Lecture to the Postgraduates	i),ii) During phase I and II (to date), 11 Zambian academic staff have, or are being, trained with Japanese assistance to Ph. D. level. Two of these are undergoing JICA C/P training (Collaborative Research Programme). Training of 14 Master's level students has been supported by ODA with two to go in January, 1995. While Zambians are training abroad, the Japanese experts cover their duties.	i),ii) Training to obtain degree in the School is to be planned. Though 3 Zambian were trained initially under Collaborative Research Programme, one of them passed away and training was terminated.
(4) Ph.D. Course Programme i) Programme Development	i) As the Project activities, no specific activities has been done.	i) In consideration of current under staffing, it is not adequate to start the course.
2. Continuing Professional Development (1) Advance Course Programme i) Programme Development ii) Lecture to the Postgraduate	i),ii) As the Project activities, no specific activities has been done.	i),ii) Almost all activities related to CPD can be carried out as activities of the School, if budget is available.
(2) Refresher Course Programme i) Programme Development ii) Lecture to the Postgraduate	i),ii) A seminar was held successfully held in Feb. 1993 with 26 participants. Academic staff, including Japanese experts, gave lectures and practices.	i),ii) Almost all activities related to CPD can be carried out as activities of the School, if budget is available.
(3) Special Course Programme i) Programme Development ii) Lecture to the Postgraduate	i),ii) As the Project activities, no specific activities has been done.	i),ii) Almost all activities related to CPD can be carried out as activities of the School, if budget is available.

PROJECT ACTIVITIES	ACTIVITIES IMPLEMENTED	REMARKS
3. Veterinary Research Activities (1) Development of Disease Control Technology in Cattle i)Field Survey ii)Development of diagnostic Method iii)Development of Control Measure (2) Development of Disease Control Technology in Poultry (3) Development of Disease Control Technology in Goats and Sheep (4) Development of Inspection and Quality Control Technology in Public Health i)Meat/Stock Farm Products ii)Milk/Dairy Products iii)Eggs iv)Fish v)Drinking Water vi)Zoonosis (5) Development of Breeding Technology for Experimental Animals i) Chicken ii) Mouse/Rat iii) Hamster iv) Dog/Cat v) Guinea Fowl/Quail (6) Development of Disease Control Technology in Wild Life	3. Veterinary Research Activities has been carried in the following areas; 3.(1) i), 3.(2), 3.(4) v) 3.(4) vi), 3.(6).	3. Though 9 themes were determined all over the School, limited research has not been carried out due to budgetary constraint, and Staffing Limitation. In terms of the research, Japanese experts were involved the following activities; 1) Supervising research activities of Doctorated research for 3 Zambian (one of them passed away and the research was terminated in Oct. 1993). 2) Advice on experimental technic to a research master student. 3) Transfer of research technology to staff and SDF

PROJECT ACTIVITIES	ACTIVITIES IMPLEMENTED	REMARK
(7) Development of Breeding Technology for Ectoparasites i) Tick/Mite ii) Mosquito/Fly iii) Tsetse Fly		
4. Maintenance and Strengthening of Undergraduate Education Programme		
(1) Curriculum Development	(1) The Curriculum Review Committee was established, the review is in progress.	(1) Japanese cooperation should be considered with capacity of input of the Japanese side.
(2) Lecture to the Students (3) Practical for the Students	(2),(3) 96 students in 1992/93 academic year and 95 students in 1993/94 academic year were given lecture and practice. 17 students in 1991/92 and 19 students in 1992/93 graduated from the School.	(2),(3) All Japanese experts have been involved these activities. Currently Japanese experts' contribution is not only direct lecturing, but lecturing cooperation with the Zambian academic staff. Increasing number of Zambian academic staff will be returning from training abroad, it is expected that Japanese experts will contribute to upgrading skills and competence of Zambian academic staff. To cover shortage of academic staff, inter-Departmental cooperation was carried out.
(4) Vacational Practice for the Students	(4) As the Project activities, no specific activities has been done.	(4) The implementation of this practice is depended on manpower of the academic staff.

PROJECT ACTIVITIES	ACTIVITIES IMPLEMENTED	REMARKS
5.Strengthening of Extension Service (1) Development of diagnostic Laboratory	(1) JICA Long-term experts have been active as advisor in the diagnostic laboratory, have examined three diseases new to Zambia.	
(2) Organization of School Seminar (3) Organization of Conferences	(2),(3) As the Project activities, no specific activities has been done.Organization is by school, and JICA Experts are involved as speakers.	(2),(3) Though the Research Seminar is to beheld in Jan.1995, Japanese experts will be only involved as participants.
(4) Publication UNZA Veterinarian	(4) UNZA Veterinarian has been published every 6 month since beginning of the Project.	(4) Japanese experts are not involved editing.
(5) Publication Zambia Veterinary Journal	(5)This has not been published.	(5) This will be started by the Veterinary Association of Zambia.
(6) Technical Support for i) Central Veterinary Research Institute ii) Zambia Institute of Animal Health iii) The School of Agricultural Science iv) The School of Medicine v) University Teaching Hospital vi) The School of Nature Science	(6) The School gave lectures in the following faculties; -The School of Medicine, - The School of Agricultural Science, - The School of Nature Science. No cooperative research activities to the other institute were implemented, within the project.	(6) No contribution from Japanese experts.In consideration of under staffing and lack of research budget, the activities in these area should be limited. The School has an active Technical In-Service Training Programme.
6. Establishment of Workshop (1) Development In-Service Training Programme for Technical Staff (2) Establish In-Service Training Programme	(1),(2) No In-Service Training Programme was implemented. Instead of In-Service Training, under direction of the Japanese experts gave guidance to Zambian technicians on basic skill for maintenance of laboratory equipment through the routine duties.	(1),(2) The level of skill for maintenance is not sufficient. The inventory system was established, but it is not functioning efficiently.

Annex 6

The Annual Work Plan (Revised)

ITEMS (PROJECT ACTIVITIES)	3rd Year	4th Year	5th Year
1. Postgraduate Education Programme			
(1) Course Master Programme			
i) Programme Development			
ii) Lecture, Practical and Seminar to the Postgraduates			
iii) Research Guidance to the Postgraduates			
(2) Other Postgraduate Education Programme			
i) Advice to SDF Programme			
ii) Technical Guidance to Students under Research Master and PhD Programme			
2. Related Veterinary Research Activities with Veterinary Education Programme			
i) Collaborative Research			
3. Maintenance and Strengthening of Undergraduate Education Programme			
i) Augment Zambian Academic Staff			
ii) Cooperative Lecturing in order to Develop Skill and Competent of Zambian Academic Staff			
4. Extension Service			
i) Advice to Activities for Diagnostic Laboratory			
5. Technical Transfer for Maintenance of Major Laboratory Equipment			
i) Transfer Basic Techniques of Maintenance Major Laboratory Equipment			

The Annual Work Plan (Revised)

ITEMS	PROJECT ACTIVITIES	OUTPUTS(Goal of Achievement)
1. Postgraduate Education Programme	(1) Course Master Programme i) Programme Development for M.Vet.Med.	i) Curriculum is established and can be reviewed regularly.
	ii) Lecture, Practice and Seminar to the Postgraduates	ii) M.Sc.and Ph.D.degree holders are created.
	iii) Research Guidance to Postgraduates	iii) M.Sc. and Ph.D.degree holders are created. Adequate and relevant research can be implemented.
	(2) Other Postgraduate Education Programme i) Advice to SDF Programme	i) SDF Programme is carried out in the School properly.
	ii) Technical Guidance to Students under Research Master and Ph.D. Programme	ii) M.Sc. and Ph.D. degree holders are created. Adequate and relevant research can be implemented.
2.Related Veterinary Research Activities with Veterinary Education Programme	i) Collaborative research	i) Research subjects are appropriately selected. Zambian Academic Staff are able to formulate Research. Programme and implement,evaluate them by themselves.
3.Maintenance and Strengthening of Undergraduate Education Programme	i) Augment Zambian Academic Staff	i) Curriculum are improved and developed.
	ii) Cooperative Lecturing in order to Develop Skill and Competent of Zambian Academic Staff	ii) Acquiring appropriate lecturing methods by Zambian personnel for maintenance and strengthening of Undergraduate Education Programme.
4.Extension Service	i) Advice to Activities for Diagnostic Laboratory	i) Establishment of the academic linkage between Diagnostic Laboratory and the Veterinary Research Activities.
5.Technical Transfer for Maintenance of Major Laboratory Equipments	i) Transfer Basic Techniques of Maintenance of Major Laboratory Equipment.	i) Maintenance of Major Laboratory Equipment by Zambian personnel became possible.

Japanese Contribution

	3rd Year	4th Year	5th Year
1.Dispatch of Long-Term Experts			
1) Team Leader			
2) Coordinator			
3) Academic staff			
i) Vet. Pathology			
ii) Vet. Public Health			
iii) Vet. Virology			
iv) Vet. Clinical Pathology			
v) Vet. Microbiology including Immunology			
vi) Vet. Epidemiology			
vii) Others (When necessity arises)			
2.Dispatch of Short-Term Experts	When necessity arises.		
3.Dispatch of JOCV			
4.Counterpart training in Japan			
(1) JICA Programme			
(2) JOCV Programme			
5.Provision of Machinery and Equipment			
6.Dispatch of Survey Mission	When necessity arises.		

Note : Japanese contributions will be, mainly, for the fields of Paraclinical Studies and Disease Control.

添付資料２．研究課題リスト

SCHOOL OF VETERINARY MEDICINE

LIST OF RESEARCH PROJECTS, FROM JULY 1992 TO-DATE

NO.	RESEARCH TOPIC	RESEARCHERS	ON-GOING IN JULY 1994
1.	Biological and Nutritional Data for Zambian indigenous goats related to age, season and diet	C.E.A. Lovelace & T.R. Ayliffe	✓
2.	Investigation into Albiziosis	T.R. Ayliffe	✓
3.	Studies on the Reproductive Characteristics of Zambian goats	C.E.A. Lovelace & J. Lungu	✓
4.	Immune responses of calves & rabbits to ticks	E.T. Mwase	✓
5.	Studies of Rift Valley Fever in Zambian	J.E.D. Mlangwa, K.L. Samui, A. Mweene & L. Mwanza	✓
6.	Studies on Staphylococci from mild products in Zambia	G.S. Pandey	✓
7.	Immuno-histochemical studies of tumours in animals	M.M. Musonda & J.O. Omamegbe	✓
8.	Epidemiology of Bovine Dermatophilosis	K.L. Samui & J.E.D. Mlangwa	✓
9.	Epidemiology of calf mortality in Lusaka	J.E.D. Mlangwa & K.L. Samui	✓
10.	Studies on Sanitary evaluation, Enterotoxigenicity and drug resistance pattern of pathogens isolated from meat and meat products causing food poisoning in Zambia	G.S. Pandey	✓
11.	Comparative studies of Pyloric Outflow surgeries in dogs and pigs	J.O. Omamegbe	✓
12.	Chemotherapy of transmissible venereal tumour in dogs	J.O. Omamegbe	✓
13.	Bacteria flora in surgical wounds of dogs & cats.	J.O. Omamegbe	✓
14.	A survey of salmonella in some hatcheries around Lusaka	G.S. Pandey & L.M. Tuchili	✓
15.	Igm Dependent clearance of Ig VSG complexes for the surface of African trypanosomes	Z. Nkhungulu & C.E.A. Lovelace	✓
16.	An investigation into the resistance and maintenance of resistance of indigenous breeds of cattle to ticks and tick-borne diseases in Zambia	E.T. Mwase, M. Okumura & A. Mlangwa	✓
17.	Animal Health delivery systems in Zambia: Organisational & financial aspects.	J.E.D Mlangwa, K.L. Samui and G. Mwangu	✓

18	Studies on Parastic diseases in indigenous goats in Zambia	C.A.E. Lovelace, C.C. Amoo, T. Koomson and I. Nyirenda	✗
19.	A study of Intermediate host actual incidence and/or prevalence of fasciolasis in Mongu & Senanga	I.K. Phiri, J. De-Bont, K.L. Samui, and G.S. Pandey	††
20.	A survey of Porcine hernia in commercial piggeries in Zambia	I.K. Phiri and J.O. Omamegbe	††
21.	Anaemia in small animals in Lusaka, Livingstone, Kabwe and kitwe	T. Mwanza & J.O. Omamegbe	††
22.	Sanitary analysis of pasteurized milk in Zambia	D.A. Kumar, G.S. Pandey & L.M. Tuchili	††
23.	Investigations of Red Frog Toxity in goats	Y. Yamaguchi, M. Mwase & M.M. Musonda	††
24.	Pathological survey on wild animal diseases in Zambia	H. Madarame, R.G. Alders & K. De Balough	††
25.	Survey on Dog Coccidia	T. Kadota, Y. Tsutsumi & P.G. Phiri	††
26.	Detection of etiological agents of water borne diseases in Environmental water.	H. Hirowatara & H. Kadame	††

✓ = **Research on going upto 1994**

✗ = **Terminal Report submitted**

†† **lapsed** = **Due to departure of principal Researchers**

添付資料3．学生数リスト

Undergraduate Population in the School of Veterinary Medicine since its inception

Academic Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	Graduates
1983-84	13	-	-	-	-	-
1984-85	21	13	-	-	-	-
1985-86	20	19	13	-	-	-
1986-87	23	22	15	13	-	-
1987-88	20	20	19	15	13	13
1988-89	27	14	18	19	15	15
1989-90	33	20	19	14	17	17
1990-91	15	25	19	19	14	14
1991-92	17	18	23	20	18	17
1992-93	23	14	16	24	19	19
1993-94	21	22	12	18	22	
Total	233	187	154	142	118	95

Maximum intake to second year = 30
Maximum student body = 150
Current total student body = 95
Female students = 21
Male:female ratio = 3.5:1

18	Studies on Parastic diseases in indigenous goats in Zambia	C.A.E. Lovelace, C.C. Amoo, T. Koomson and I. Nyirenda	*
19.	A study of Intermediate host actual incidence and/or prevalence of fasciolasis in Mongu & Senanga	I.K. Phiri, J. De-Bont, K.L. Samui, and G.S. Pandey	††
20.	A survey of Porcine hernia in commercial piggeries in Zambia	I.K. Phiri and J.O. Omamegbe	††
21.	Anaemia in small animals in Lusaka, Livingstone, Kabwe and kitwe	T. Mwanza & J.O. Omamegbe	††
22.	Sanitary analysis of pasteurized milk in Zambia	D.A. Kumar, G.S. Pandey & L.M. Tuchili	††
23.	Investigations of Red Frog Toxity in goats	Y. Yamaguchi, M. Mwase & M.M. Musonda	††
24.	Pathological survey on wild animal diseases in Zambia	H. Madarame, R.G. Alders & K. De Balough	††
25.	Survey on Dog Coccidia	T. Kadota, Y. Tsutsumi & P.G. Phiri	††
26.	Detection of etiological agents of water borne diseases in Environmental water.	H. Hirowatara & H. Kadame	††

✓ = Research on going upto 1994

* = Terminal Report submitted

†† lapsed = Due to departure of principal Researchers

添付資料３．学生数リスト

Undergraduate Population in the School of Veterinary Medicine since its inception

Academic Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	Total Graduates
1983-84	13	-	-	-	-	-
1984-85	21	13	-	-	-	-
1985-86	20	19	13	-	-	-
1986-87	23	22	15	13	-	-
1987-88	20	20	19	15	13	13
1988-89	27	14	18	19	15	15
1989-90	33	20	19	14	17	17
1990-91	15	25	19	19	14	14
1991-92	17	18	23	20	18	17
1992-93	23	14	16	24	19	19
1993-94	21	22	12	18	22	
Total	233	187	164	142	118	95

Maximum intake to second year = 30
Maximum student body = 150
Current total student body = 95
Female students = 21
Male:female ratio = 3.5:1

添付資料４．卒業生の就職先

GRADUATING STUDENTS LIST SCHOOL OF VETERINARY MEDICINE 1992/93

THE DEGREE OF BACHELOR OF VETERINARY MEDICINE

NAME	TITLE AND LOCATION	EMPLOYER
Burton Claudia Daine	Private	Private
Chisanga Isaac	Makeni	"
Chishala C Musonda Kasonde	Veterinary Officer	GRZ
Chungu Henry	Veterinary Officer	"
Kalima Mukatimui Namangala		Sudent
Liswaniso Danny	Staff Development Fellow	UNZA
Makondo Kennedy	Staff Development Fellow	"
Matondo Mwikisa		SPCA Ndola
Mululuma Muyeye Gregory	Veterinary Officer	GRZ
Mumba Tembo	Veterinary Officer	"
Munsimbwe Linous	Veterinary Officer	"
Muzyamba Chivvamba Morris	Staff Development Fellow	UNZA
Nalubamba King Shimumbo	Staff Development Fellow	"
Oparaocha N Sheila		Private
Simwanza George		Deceased
Tembo Wilfred	Veterinary Officer	GRZ
Zulu Elasto	Veterinary Officer	"
Tembo Christopher	Veterinary Officer	"
Bwalanda Patricia Chisenga	Abroad	Un known

計 19/12

SAMORA MACHEAL SCHOOL OF VETERINARY MEDICINE

Latest INformation for Graduates (1995) and their Destination

	Name	Employer	Location
1.	Dr. Chonda Edward	Animal Health Services Ltd P. O. Box 37055	Lusaka
2.	Dr. Chipolo Royd	Dept. Vet & Tsetse Control Services, Box 510016	Chipata
3.	Dr. Chisembele Christine	Dept. Vet & Tsetse Control Services, Box 630065	Choma
4.	Dr. Fandamu Paul	Dept. Vet & Tsetse Control Services, Box 630065	Choma
5.	Dr Hankanga Coreen	UNZA, Clinical Dept, Box 32379	Lusaka
6.	Dr Kanyinji Happy	Dept. Vet & Tsetse Control Services, Provincial Vet Office	Kasama
7.	Dr. Lumumba Martin	Animal Health Services Ltd P. O. Box 37055	Lusaka
8.	Dr Masumbu Aubrey	Dept. Vet & Tsetse Control Services, BOx 910034 Tel. 221058/9	Mongu
9.	Dr. Malama Mumeka	Dept. Vet & Tsetse Control Services	Lundazi
10.	Dr. Mubyana Oliver Namula	Dept. Vet & Tsetse Control Services, Box 21181	Kitwe
11.	Dr. Mutoloki Stephen	Dept. Vet & Tsetse Control Services, Box 510016	Chipata
12.	Dr Muyoule Raphael	Dept. Vet & Tsetse Control Services, Box 550003	Katete
13.	Dr. Mwanza Brighton Musapenda	Dept. Vet & Tsetse Control Services Box	Kawambwa

/.....

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

Latest Information for Graduates (1991) and their Destination

	NAME	TITLE AND LOCATION	EMPLOYER
1.	Chilande Pius	Mazabuka	Chibote Farms
2.	Chitalu Barnabas	Lusaka	Interchem Clinic
3.	Chifi Lovewell	House Surgeon, Lusaka	UNZA
4.	M.T. Alison	Lusaka	Equine, Private Practice.
5.	Mutemwa Alisheke	House Surgeon, Lusaka	UNZA.
6.	Mwandia George	Student, School of Medicine, Lusaka	
7.	Nanyangala Boniface	Lusaka , S.D.F.	UNZA
8.	E. Oparaocha	Lusaka	Vet. Clinic, Showgrounds
9.	Zulu Victor Chisha	S.D.F., Lusaka	UNZA
10.	Rita Mulala	Vet. Officer, Western Province	Government
11.	Chaka George	Dept. of Veterinary and Tsetse Control Services	"
12.	Mundando Francis	"	"
13.	Mwalweni Humphrey		"
14.	Matae Liywali		"

* Up to 20th May, 1992

添付資料5．教官評価の様式

THE UNIVERSITY OF ZAMBIA

TEACHING EVALUTION QUESTIONNATRE

COURSE CODE : ..... YEAR OF STUDY : ..... SEX : .....

COURSE TITLE : .....

LECTURE'S NAME : .....

INSTRUCTIONS

In order to improve the effectiveness of teaching, in the University you are requested to rate this course on ALL items below. Consider each item carefully and for each item circle the response that best represents your feeing/impression. Your response will remain anonymous and will NOT in any way affect your academic standing in the course

		Very Good	Good	Satis-factory	Poor	Very Poor	N/A
(i)	Ponctuality (of the lecturer) in starting and ending lectures.	5	4	3	2	1	0
(ii)	Attendance of scheduled teaching sessions, labs and tutorials	5	4	3	2	1	0
(iii)	Ability to explain new concepts	5	4	3	2	1	0
(iv)	Communicating clearly	5	4	3	2	1	0
(v)	Arousing interest	5	4	3	2	1	0
(vi)	Use of teaching aids	5	4	3	2	1	0
(vii)	Organisation of teaching material	5	4	3	2	1	0
(viii)	Dealing effectively with questions	5	4	3	2	1	0
(ix)	Accessibility of lecture for consuttations	5	4	3	2	1	0
(x)	Encouraging student participation	5	4	3	2	1	0
(xi)	Coverage of syillabus	5	4	3	2	1	0

		Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	N/A
(xii)	Lecturer was punctual in returning maked assignments	5	4	3	2	1	0
(xiii)	The number of assignments exercises/projects was adequate	5	4	3	2	1	0
(xiv)	The course content was directly to my career needs/ambition	5	4	3	2	1	0

RATING OF LECTUR

		Very Good	Good	Satis-factory	Very Poor	N/A
(i)	Overall, I would rate lecture	5	4	3 2	1	0

添付資料６．95年の学期予定

THE UNIVERSITY OF ZAMBIA

SESSIONAL DATES FOR 1994/1995 ACADEMIC YEAR
SESSIONAL DATES

SUNDAY	22ND JANUARY 1995	ARRIVAL OF STUDENTS FOR RESIDENTIAL SCHOOL
MONDAY	23RD JANUARY 1995	RESIDENTIAL SCHOOL STARTS
FRIDAY	10TH FEBRUARY 1995	RESIDENTIAL SCHOOL ENDS

SEMESTER 1

MONDAY	13TH FEBRUARY 1995	ARRIVAL AND REGISTRATION OF NEW STUDENTS
WEDNESDAY	22ND FEBRUARY 1995	ARRIVAL AND REGISTRATION OF RETURNING STUDENTS
MONDAY	27TH FEBRUARY 1995	CLASSES BEGIN
MONDAY	3RD APRIL 1995	MID-SEMESTER BREAK BEGINS
FRIDAY	7TH APRIL 1995	MID-SEMESTER BREAK ENDS
MONDAY	10TH APRIL 1995	CLASSES RESUME
FRIDAY	9TH JUNE 1995	CLASSES END
MONDAY	12TH JUNE 1995	MID-YEAR EXAMINATIONS BEGIN
FRIDAY	16TH JUNE 1995	MID-YEAR EXAMINATIONS END

SEMESTER 2

MONDAY	10TH JULY 1995	CLASSES BEGIN
SATURDAY	26TH AUGUST 1995	MID-SEMESTER BREAK BEGINS
MONDAY	4TH SEPTEMBER 1995	CLASSES RESUME
FRIDAY	13TH OCTOBER 1995	CLASSES END
MONDAY	23RD OCTOBER 1995	EXAMINATIONS BEGIN
FRIDAY	10TH NOVEMBER 1995	EXAMINATIONS END
SATURDAY	11TH NOVEMBER 1995	LONG VACATION BEGIN
MONDAY	4TH DECEMBER 1995	PUBLICATION OF RESULTS

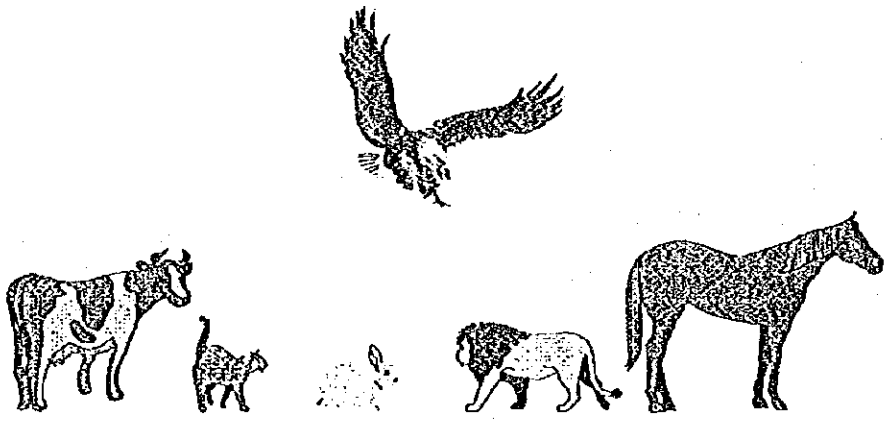
1995/96 ACADEMIC YEAR

MONDAY	3ED JANUARY 1996	ARRIVAL AND REGISTRATION OF NEW STUDENTS
MONDAY	15TH JANUARY 1996	ARRIVAL AND REGISTRATION OF RETURNING STUDENTS
THURSDAY	13TH JANUARY 1996	CLASSES BEGIN

School of Veterinary Medicine
The University of Zambia

Handbook

1994-1995



The University of Zambia
P.O. 32379
Lusaka
Tel: 293036-58
Fax: 253962
e-mail: UNZAVet@p9.f1.n761.Z6.fidonet.org

Samora Machel School of Veterinary Medicine

Administration

Prof. C.E.A. Lovelace	Dean,	BSc. (Birmingham), PhD. (London)
Dr. H. Chitambo	Assistant Dean, (Undergraduate)	BSc. Agr., MSc. (Bangor), PhD (Osaka)
Prof. R.N.Sharma	Assistant Dean, (Postgraduate).	B.V.Sc.& A H., M.V.Sc., PhD. (AGRA) Pathology
Mrs. R.M. Shamfwesa	Admin. Assistant to the Dean	BA. (UNZA)
Mr. J. Hanai	JICA Coordinator	Bsc. Agr. (Kyoto)
Mr. E. Phiri	Accountant	CABS,

Academic Staff of the School

Department of Biomedical Sciences

Prof. D.A. Hogg	Head/Associate Professor	BVMS., PhD. (Glasgow), MRCVS. **Anatomy**
Prof. C.E.A. Lovelace	Professor	BSc. (Birmingham), PhD. (London) **Biochemistry**
Dr. S.K. Gupta	Lecturer	BVSc. & A.H., MVSc. (Kanpur)
Dr. Z. Nkhungulu	Lecturer	BSc., PhD. (UNZA) **Biochemistry**
Dr. K. Choongo	Lecturer	BVetMed. (UNZA), MSc. (Surrey), **Pharmacology**
Dr. C. Bishonga	Lecturer	BVetMed. (UNZA), MSc. (Aberdeen), **Physiology**
Dr. G. Muwanga	Lecturer	BVetMed., MSc. (Mak), MSc. (Edin) **Anatomy**

Dr. C. Mowa	Lecturer.	BVetMed. (UNZA), MSc. (Glasgow) **Anatomy**
Dr. D. Liswaniso	SDF.	BVetMed. (UNZA) **Anatomy**
Dr. K. Makondo	SDF.	BVetMed. (UNZA) **Physiology**

Department of Paraclinical Studies

Dr. M.M. Musonda	Head/Senior Lecturer	BVM. (Nairobi); DipVetPath. (Uppsala), PhD. (Azabu), FRVCS, **Pathology**
Prof. R.N. Sharma	Professor	B.V.Sc. & A.H., M.V. Sc. Ph.D. (AGRA), **Pathology**
Prof. K. Matsukawa	Professor	DVM, Ph.D. (Hokkaido) **Pathology**
Prof. T. Nagabayashi	Professor	DVM, PhD (Hokkaido)**Microbiology**
Dr. E.T. (Mwase) Ngulube	Lecturer	BSc. (UNZA), MSc., PhD. (London) **Parasitology (Entomology)**
Dr. H. Chitambo	Lecturer	BAgricSci. (UNZA), MSc.(Bangor), PhD. (Osaka),**Parasitology (Protozoology)**
Dr. B Namangala	Lecturer	BVetMed. (UNZA), MSc. (London)
Dr.M.Mwase	Lecturer	BVetMed. (UNZA), D.V.P., MSc.(Sweden), FRVCS
Ms.G.Arumugan	Lecturer	BSc., (Unza), MSc., (London) **(Microbiology)**
Dr.A.Mulenga	SRF	BVetMed.(UNZA), MVSc.(Liverpool) **Parasitology (Protozoology Entomology)**
Dr.I.Bhaiyat	SDF	BVetMed.(UNZA) **Pathology**
Dr.C.Nyeleti	House Surgeon	Msc., (Moscow) **Pathology**

Department of Disease Control

Prof. G.S. Pandey	Head/Associate Professor	BScAgr. (Agra), BVSc & AH., MVSc (Jabalpur), Clinical Pathology
Prof. I. Takatori	Professor	DVM.,PhD.(Tokyo),Virology
Prof. T. Fujikura	Associate Professor	DVM, PhD. (Hokkaido) Public Health
Prof. E. Baba	Associate Professor	DVM., PhD. (Osaka) Clinical Pathology
Dr. J.E.D. Mlangwa	Senior Lecturer	BVM (Nairobi), DPVM., PhD. (Copenhagen), MSc.AgrDev. (London), Epidemiology/Economics
Dr. L.M. Tuchili	Lecturer	DVM. (Romania), MSc. (Surrey), Microbiology
Dr. A.M. Nambota	Lecturer	DVM., MSc. (Leipzig), DipTropVetMed. (Free Univ. Berlin), Parasitology (Protozoology)
Dr. P. Chilonda	Lecturer	BVetMed.(UNZA), MSc.(Reading), Epidemiology
Dr. M. Hasegawa	Lecturer	DVM. MSc. (Azabu), Virology
Dr. K.L. Samui	SRF	DVM., MSc. (Kishinev), MS. (LSU),Preventative Medicine & Epidemiology
Dr. A. Mweene	SRF	BVetMed. (UNZA), MSc. (Surrey), Virology
Dr. M.S. Syakalima	SRF	BVetMed. (UNZA), MSc. (Edinburgh), Clinical Pathology

Dr. R. Mulala	SDF	BVetMed. (UNZA) **Public Health**

Department of Clinical Studies

Prof. J.O. Omamegbe	Head/Assoc. Professor	DVM. (Ibadan), MVM. (Glasgow), **Surgery**
Prof. P. Sayer	Assoc. Professor	BVMS. (Glasgow), FRCVS., **Medicine**
Dr. G. O. Ayoade	Senior Lecturer	DVM.(Ibadan), MSc. (London
Dr. J.H.R.N. de Bont	Senior Lecturer	BVSc., DVM. (Ghent), DipTropVetMed. *cum laude* (Ghent), **Medicine**
Dr. J. Muleya	Lecturer	BVetMed. (UNZA), MVM. (Glasgow), **Surgery**
Dr. A.M. Mwanza	Lecturer	DVM. (Cuba), FRCVS. (Sweden), **Theriogenology**
Dr. P.F.M. Meeus	Lecturer	**DVM (Ghent)**
Dr. I.G.K. Phiri	SRF	BVSc., MVSc. (Leipzig), DipTropVetMed. (Free Univ. Berlin), CertTropVetMed. (Edinburgh), **Medicine**
Dr. T. Mwanza	SRF	BVM., MSc. (Leipzig), **Small Animal Medicine**
Dr. O. Patel	SRF	BVetMed. (UNZA), MVM. (Glasgow), **Theriogenology**

Dr. V. Zulu	SDF	BVetMed. (UNZA), Theriogenology
Dr. K. Nalubamba	SDF	BVetMed. (UNZA) Large Animal Med.
Dr. M. Mumeka	SDF	BVetMed. (UNZA) Large Animal Med.
Dr. C. Hankaanga	SDF	BVetMed. (UNZA) Small Animal Med.
Dr. M. Muzyamba	House Surgeon	BVetMed. (UNZA)
Dr. L. Chiti	House Surgeon	BVetMed.(UNZA)

Senior Technical Staff

Mr. W. Benkele	Chief Technician, Clinical Studies	DipMedLabSci. (Zambia), CertVetTech. (London), Advance CertVetLabTech & Radiology (Kobe), CertAgric. Teaching Methodology (Wolverhampton)
Mr. J. Daka	Chief Technician, Biomedical Sciences	CGI Part II & III (London), CGI Part I, Adv. ScLabCert. (Zambia)
Mr. W.D. Ulaya	Chief Technician, Disease Control	CGI Parts I & II SciLabTech. SIMA, CertSciTech. (Zambia)
Mr. C.M. Mubita	Chief Technician, Paraclinical Studies	I INC MedLabSc. (Glasgow), ON VetLabSc(Brooklands),CGI Part I AdvScLabCert. (Zambia)
Mr. B. Sakala	Acting Chief Technician, Coordinator Technician In-Service Training Project	TechDip., Appl. Biol. (Dublin), CertAnimScTech. (Ottawa), CGI Part I Adv.Sc LabCert. (Zambia)
Mr. P.G. Phiri	Acting Chief Technician, Central Services	DipMedLabTech. (Zambia), CertAnimHlth. (Zambia), CertHaemDiseases of Cattle (Nairobi)

Mr. M. Mubiana	Senior Technician, Clinical Studies	DipAgricAnimSci. (Zambia), CertAnimHlth & Management (Zambia)
Mr. L.N.K. Zulu	Senior Technician, Disease Control	HND. Appl.Biol. (UK), ONC. VetLabSc. (Brooklands), LabAnim. Management (Surrey), Anim. Hlth & Management (Zambia)
Mr. P. Chama	Senior Technician, Paraclinical Studies	CGI Part I, Adv. SciLabCert. (Zambia)
Mr. G. Himunzowa	Senior Technician, Central Services	CGI FullTechCert. (London), CGI Part II & III (London), DTEVT AdvCertElect. (Zambia)

Introduction

In July 1983 it was announced that the University of Zambia was to establish its own School of Veterinary Medicine to meet the critical shortage of qualified veterinary personnel. The first class of 14 students was admitted in October 1983. With the co-operation of the Government of Japan, the construction of a large and well equipped School began in February 1984 and was completed in 1986. The School has since started a post-graduate programme for a Masters degree (M.Vet. Med.) to be taken in two years, the first year is course work and the second year is research followed by presentation of a dissertation. The development of the masters programme and the undergraduate curriculum are currently under review.

The intake of undergraduate students into the School has been increased annually in order to graduate a maximum of 25 veterinarians each year. The programme of study extends over 6 years and leads to the award of the degree of Bachelor of Veterinary Medicine of the University of Zambia.

The First Year is by entry to the School of Natural Sciences to study Biology, Chemistry, Physics and Mathematics. The students enter the Veterinary School in Second Year, where they study Anatomy, Histology, Embryology, Organic/Biochemisty and Physiology in the Department of Biomedical Sciences, and Biomathematics, Agronomy and Genetics in the School of Agricultural Sciences. The Third Year covers more Biomedical Sciences and Animal Nutrition in the Department of Biomedical Sciences. The Fourth Year is spent in the Department of Paraclinical Studies studying Pathology, Microbiology, Parasitology and Pharmacology and they also cover Animal Production courses in the School of Agriculture. The students start clinical work in their Fifth Year where their lectures are split between the Departments of Disease Control and Clinical Studies. Subjects covered in Fifth and Sixth Years include Medicine, Surgery, Theriogenology, Preventative Medicine, Public Health, Epidemiology, Economics and Extension.

The course is designed to produce practising veterinarians, so the practical component is very important. In the vacations of their Third, Fourth and Fifth Years, the students are required to acquire practical experience on the farm, in the diagnostic laboratory and in veterinary clinics respectively.

The School has on its premises an active Small Animal Clinic which is open to the public and the Department of Disease Control also runs a well-established diagnostic laboratory, which provide services to pet owners, farmers and veterinarians. These two facilities help in the procurement of teaching material for students. The School also runs an ambulatory farm clinic which visits a variety of farms from large commercial enterprises to village small-holdings. These clinics provide a large number of clinical cases for student teaching and demonstrations. The School Animal Accommodation units include small animal hospitalisation quarters, special accommodation for laboratory animals and a covered pen area for large animals. Cattle, horses, goats and sheep are kept in

thirteen hectares of paddocks at the rear of the School. The animals are used for teaching students and for research purposes. The School has also acquired 50 hectares of arable land, a part of the University Farm at Liempe. The School is establishing a field station in a rural area to allow students to learn about livestock health management.

Research in the School is active with a variety of diseases being studied. Several surveys are being carried out for important ruminant diseases, including zoonoses.

The School library is rapidly expanding and has computerised literature search facilities. An audio-visual laboratory is in preparation and will soon be operational. The School library is also extending its links with other international libraries including the International Livestock Centre for Africa (ILCA) library to facilitate literature search and document delivery facilities.

Deans of the School

1985-87	Prof. R.P. Lee	MA. (Dublin), PhD. (NUI), MRCVS.
1987-89	Prof. R.J. Thomas	BVSc., MSc. (Bristol), PhD. (Dunelm) MRCVS
1989-95	Prof. C.E.A. Lovelace	BSc. (Birmingham), PhD. (London)

Dr. M.N. Shandomo, BVSc. (Nairobi), Dr. VetMed. (Vienna), MSc. (Edinburgh) served as co-ordinator of the School in its formative stages (1983-85).

Graduates of the School

Academic Year	Male	Female	Total
1987/88	11	2	13
1988/89	13	2	15
1989/90	17	0	17
1990/91	12	2	14
1991/92	15	2	17
1992/93	15	4	19
1993/94	19	3	22
Total	**102**	**15**	**117**

Qualifications

The degree of Bachelor of Veterinary Medicine (BVetMed) will be conferred on those that have fulfilled the requirements of the Sixth Year Examination after approval by the Senate of the University of Zambia.

The Board of Studies

The Board of Studies is responsible for organising the structure and content of the courses of instruction and study. Its composition is as follows:-

- The Dean, School of Veterinary Medicine
- The Dean, School of Agricultural Sciences or his representative
- The Dean, School of Education or his representative
- The Dean, School of Humanities or his representative
- The Dean, School of Natural Sciences or his representative
- The Dean, School of Medicine or his representative
- The Dean of Students or his representative
- The Librarian or his representative
- The Director, Centre for Continuing Education or his representative
- The Director of Veterinary and Tsetse Control Services, Ministry of Agriculture or his representative
- The Director of Wildlife and National Parks, Ministry of Tourism or his representative
- The Head, Department of Animal Sciences, School of Agricultural Sciences or
  her representative
- Chairman, Veterinary Association of Zambia
- All members of the academic staff of the School of Veterinary Medicine appointed on a
  full time basis for teaching and research
- The Administrative Assistant to the Dean as its Secretary
- A student representative of the preclinical and paraclinical years
- A student representative of the clinical years
- One private practitioner

Objectives of The School Curriculum

To produce veterinarians who will be recognised internationally and who will be competent to engage in:

a) the promotion of animal production development in Zambia and elsewhere through improved animal health control, surgical intervention, breeding and nutritional programmes

b) the promotion of public health through the control of zoonotic diseases and other infections and intoxication's transmissible to man through human products

c) basic and applied research in the field of veterinary medicine and surgery

d) teaching and academic curriculum development in veterinary education

e) to promote appropriate livestock and poultry products industries

Entrance Requirements and Regulations

Entrance requirements to the School of Veterinary Medicine

i) A clear pass with normally a minimum of C^+ obtained at the first attempt in all courses of the first year of the School of Natural Sciences, University of Zambia or equivalent qualifications from other Universities or Schools. The student will have opted to study Veterinary Medicine.

ii) For non-school leavers the following requirements apply:

   a) Natural Resources Development College (NRDC) or equivalent colleges, Diploma in Agriculture or Animal Science with a Distinction. These will be admitted into the first year of the School of Natural Sciences, University of Zambia.

   b) BSc., University of Zambia or equivalent University with a credit will be admitted to the second year, School of Veterinary Medicine.

   c) BAgricSci., University of Zambia or equivalent University with a credit will be admitted into the third year, School of Veterinary Medicine.

iii) There are limited places for both categories of candidates and thus there may be considerable competition for admission. This may demand, therefore, that selection for a place will depend upon the attainment of higher levels of performance.

General Entrance Requirements

1. **Applicants offering qualifications of the General Certificate of Education or the Cambridge Overseas School Certificate**

   i. Every applicant must hold passes in at least five approved subjects.

   ii. The passes must include (A) English, (B) either Mathematics or an approved Science subject.

   iii. "Approved subjects" are those approved for this purpose by the University of Zambia.

   iv. Attainment of Grade A, B or C in an examination at the Ordinary Level of the GCE or on the Cambridge School Certificate will be regarded as a pass for the satisfaction of these entrance requirements.

2. **Applicants offering qualifications from other examining Boards**
   Qualifications of other Examining Boards may be recognised in complete satisfaction of the requirements listed in paragraph 1 above, if, in the opinion of the University Senate, the standard of examination is of sufficiently high standard to warrant recognition for this purpose.

3. **Mature applicants**
   The University may modify the general entrance requirements in the case of applicants who are twenty-three years of age or over by 1st October of the year in which they begin their degree course.

4. **Exceptionally,** the University may admit an applicant whose qualifications do not conform to the general entrance requirements but who presents other evidence which, in the opinion of Senate, indicates that he/she has the capacity and attainment to pursue the course of study proposed.

5. **Requirements of the School of Natural Sciences**
   A pass in an 'O' Level subject shall for the purpose of the entrance requirements of the School of Natural Sciences be deemed to be the attainment of grade A, B or C in that subject.

   Within the framework of the GCE. all candidates require passes in five 'O' Level subjects as follows:-

   i. a pass in Mathematics in which the minimum acceptable standard that must be attained is Grade B;

   ii. a pass in Chemistry and Physics or Physical Sciences;

iii. a pass in one further approved Science subject preferably Biology;

iv. a pass in English Language and

v. a pass in one other approved subject.

Quota system

The selection for the various quotas of the different schools takes place at the end of the first year and is based on grades obtained in the first year and on student preferences.

Regulations for the Bachelor of Veterinary Medicine Degree

1. The degree of Bachelor of Veterinary Medicine (BVetMed.) will be awarded by the University Senate to a student who has completed, to the satisfaction of the Examiners, the required course of study, including Preclinical, Paraclinical and Clinical Studies.

2. The normal length of undergraduates studies is six years subject to modifications arising from application of regulations concerning courses credited from other programmes and progression from one year of study to the next. The programme consists of one pre-veterinary, two preclinical, one paraclinical and two clinical years, and includes three periods of practical vacational training

3. **University Examinations**

   Written and, where appropriate, practical and/or oral examinations will be held at the end of each academic year for those courses taught by the School of Veterinary Medicine. Examinations for the courses taught by other Schools will be held according to the requirements of those Schools.

4. The Examiners for all courses shall be Professors and Lecturers in the School and such additional Examiners as may be appointed by the University Senate on the recommendation of the Board of Studies of the School of Veterinary Medicine.

5. External Examiners may participate in the University Examinations held during the 3rd, 4th, 5th and 6th years of the programme.

6. No candidate shall, without permission of the Senate granted on the recommendation of the Board of Studies, present him/herself for examination in any course unless he/she has attended and duly performed the work prescribed for the course.

7. A student will be deemed to have passed a course if he/she attains Grade C or above. The percentages allocated to theory, practical and oral

examinations, and to continuous assessment carried out during the year are shown on page 15.

8. The following grades shall be used in assessing the performance of a candidate in a course. There shall be eight pass grades and five fail grades as follows:-

A^+	Distinction
A	Distinction
B^+	Merit
B	Merit
C^+	Pass
C	Bare Pass
D^+	Bare Fail
D	Fail
NE	No examination taken
LT	Left without permission
CP	Compensatory Pass
S	Satisfactory in Practical Course
U	Unsatisfactory in Practical Course

9. **Compensatory Pass**

On the recommendation of the Board of Studies, the Senate may allow a student to be awarded a compensatory pass under the following conditions:-

a) a pass in at least 2 full courses with a Grade C^+ or better and;

b) a pass in the continuous assessment part of the failed course.

c) Compensatory pass will be granted to a student in not more than two full course equivalents in any one year. The grade awarded will be either CP or Fail.

10. **Repeat Year**

The Senate may on the recommendation of the Board of Studies allow a candidate in 3rd, 4th or 5th Year to repeat all courses in the following Academic Year where:-

i. a candidate does not qualify for a supplementary examination in a failed course;

ii. a candidate fails less than three full courses;

iii. a candidate fails a supplementary examination.

11. The University Senate may, on the recommendation of the Board of Studies, allow a student to repeat a year if he/she produces documentary evidence to prove that he/she has been prevented from participating satisfactorily in classes due to illness or other unavoidable causes.

12. **Part-time**

The University Senate may, on the recommendation of the Board of Studies, allow a second year student to enrol on a part time basis under the following conditions:-

i. a candidate fails not more than one course equivalent but fails to qualify for a supplementary examination.

ii. a candidate fails not more than one course equivalent in a supplementary examination.

13. **Exclusion**

The University Senate may, on the recommendation of the Board of Studies, exclude from study in the School of Veterinary Medicine:-

i. any candidate who fails three or more full courses in any one year;

ii. any candidate who fails a course in a repeat year or part-time studies;

iii. a Second Year student, if he/she has failed in any one course and does not qualify for supplementary examinations or part-time study, or fails in more than one course equivalent in supplementary examinations or after part-time study.

iv. Final Year students who fail a course and do not pass or qualify for supplementary examinations are allowed to repeat the year once.

14. **Deferred examination**

The University Senate may, on the recommendation of the Board of Studies, grant deferred examinations to a candidate who has been prevented from presenting him/herself for examination due to illness or other unavoidable cause. An application for deferred examination must be supported by a medical certificate obtained at the time of illness, or other documentation to show cause for absence.

15. Withdrawals

A student may request withdrawal from a course from the Dean of the School, and if allowed, a Grade of WP, withdrawn with permission, will be given. If the student withdraws within 3 weeks of the commencement of the course, no grade will be recorded. If a student withdraws without permission, a Grade of LT will be recorded.

The Curricum:-

Year	Course No.	Subject Matter	Unit
1	BZ 110	Introductory Biology	1
	C 110	Introductory Chemistry	1
	M 110	Introduction to Mathematics	1
	P110	Introductory Physics	1
2	VMB 210	Veterinary Anatomy & Physiology	1
	VMB 211	Veterinary Embryology	1/2
	CA 210	Organic Chemistry & Biochemistry	1
	AGG 311	Statistical Analysis	1/2
	AGA 342	Genetics	1/2
	AGC 322	Forage Crop Production	1/2
3	VMB 310	Veterinary Anatomy	1
	VMB 315	Veterinary Histology	1/2
	VMB 320	Veterinary Physiology	1
	VMB 330	Veterinary Biochemistry	1
	AGA 311	Principles of Animal Nutrition	1/2
	AGA 332	Applied Animal Nutrition	1/2
	VMB 303	Farm Practicals	1/2
4	VMP 410	Veterinary Pathology	1
	VMB 425	Veterinary Pharmacology	1/2
	VMP 430	Veterinary Microbiology	1
	VMP 440	Veterinary Parasitology	1
	AGA 441	Pig & Poultry Production	1/2
	AGA 322	Ruminant Production	1/2
	VMP 403	Veterinary Laboratory Practicals	1/2
5	VMD 530	Clinical Pathology	1
	VMC 510	Clinical Veterinary Medicine I	1
	VMD 515	Infectious Diseases of Livestock	1/2
	VMD 540	Epidemiology & Livestock Economics	1
	VMC 520	Veterinary Surgery I	1
	VMC 535	Veterinary Reproduction & Obstetrics I	1/2
	VMC 503	Veterinary Clinical Practicals	1/2

6	VMD 611	Preventive Veterinary Medicine	1/2
	VMD 630	Veterinary Public Health	1
	VMD 612	Veterinary Extension & Jurisprudence	1/2
	VMC 620	Veterinary Surgery II	1
	VMC 610	Veterinary Medicine II	1
	VMC 635	Veterinary Reproduction & Obstetrics II	1/2

In the curriculum the letters used to indicate course numbers should be interpreted as follows:-

BZ, C, M, P & CA	Courses taught by the School of Natural Sciences
AGG/AGA	Courses taught by the School of Agricultural Sciences
VMB	Courses taught by the Department of Biomedical Sciences
VMP	Courses taught by the Department of Paraclinical Studies
VMD	Courses taught by the Department of Disease Control
VMC	Courses taught by the Department of Clinical Studies

The digits used to number the courses should be interpreted as follows:-
The 1st digit indicates the year the course is normally taken.
The 2nd digit indicates the subject area.
The 3rd digit indicates the time the course is taken:
(0) - a full course taught over one academic year;
(1) - half course taught in the first half year;
(2) - half course taught in the second half year;
(3) - half course taken in the vacation;
(5) - half course taught throughout the academic year.

Vacation Practicals

Before a student is allowed to qualify at the end of sixth year he/she will have satisfactorily undertaken vacation practicals as stipulated below:-

i. **VMB 303:** Farm practicals at a selected farm within Zambia for 8 weeks during the vacation after the Third Year
ii. **VMP 403:** Laboratory practicals at either the Government diagnostic/research stations or the School of Veterinary Medicine for 8 weeks during the vacation after Fourth Year.
iii. **VMC 503:** Veterinary clinical practicals in Government or private practice and abattoirs within Zambia for 8 weeks during the vacation after Fifth Year.

First year (Natural Sciences)

Course No.	Description
BZ 100	**Introductory Biology** An introduction to the most important areas of Biology. Basic cell biology, animal structure and physiology. Plant structure and physiology. Genetics, ecology, evolution and diversity of animals and plants.
C 110	**Introductory Chemistry** An introductory course in chemistry, covering such topics as stoichemistry, atomic and molecular structure, the periodic table, chemical reactions, equilibrium and simple organic compounds.
M 110	**Introduction to Mathematics** Preliminary algebra, introductory set theory, elementary functions, analytical geometry and vector analysis, matrices and determinants, calculus.
P 110	**Introductory Physics** Basic principles of matter structure, density and mechanical properties. Geometrical optics, reflection, refraction, mirrors, lenses and simple instruments. Mechanics - kinematics, dynamics, circular, statics and motion, vibrations and waves. Heat - thermometry, simple lunetic theory, specific heat and elements of thermodynamics. Electricity and magnetism - electrostatics, DC circuits, the magnetic fields, AC circuits. Modern physics - the atom and radioactivity. Associated laboratory course.

Second Year

VMB 210	**Veterinary Anatomy & Physiology** General Anatomy: terminology, body regions, major organ systems. Physiology: general cell physiology. Nerve cell and muscle physiology. Blood and body fluids. General endocrinology. Cytology: the cell and its components: cell membrane, nucleus, organelles, cytoplasm. Cell division. General Histology: epithelia, connective, supportive, muscular and nervous tissues. Blood.
VMB 211	**Veterinary Embryology** Introduction, primary organs of reproduction and gametogenesis, fertilisation, cleavage and formation of the morula and blastula, gastrulation and formation of the germ layers. Establishment of the embryonic membranes and body structures, development of organ systems in avian and mammalian embryos.
CA 210	**Organic Chemistry & Biochemistry** Broad factual coverage of organic chemistry. Bonding in organic compounds, isomerism, reaction of organic functional groups and their derivatives. Synthetic transformations and chemicals of biological importance. Analytical chemistry, precipitation, acid base, redox, equilibria. The major constituents of the cell, their chemical structure, function and analysis including carbohydrates, lipids, proteins and nucleic acids. Biochemical energetics and properties of enzymes.

AGG 311 Statistical Analysis

Summation and product operations. Random variable, sample space and sampling techniques. Summary of the data. Normal probability distribution and related distributions. Statistical estimations.

Normal population:- interference about population mean and population variance, comparison of two population means, comparison of two population variances. Regression analysis. Analysis of variance. Chi-squared analysis. Experimental designs. Procedures in scientific experimentation.

AGA 342 Genetics

Introduction to basic process of inheritance, basic Mendelian genetics - segregation, linkage, mutation and independent assortment; multiple alleles, sex linkage, sex determination, elements of population genetics.

Quantitative genetics - variation, normal distribution, correlation, regression, heritability, repeatability. Selection - response to selection, types of selection, selection methods.

Breeding systems - in-breeding, out-breeding, cross-breeding, coefficient of breeding, relationship, heterosis, species hybridisation.

Artificial insemination in livestock genetic improvement.

AGC 322 Forage Crop Production

The structure and physiology of grasses and legumes. Establishment. Forage quality and anti-quality. Storage - wet and dry systems. Seed production. Palatability, grazing behaviour and pasture management.

Third year

VMB 310 Veterinary Anatomy

Topographical and applied anatomy of domestic animals. Emphasis in the course will be on ruminants with comparisons to the horse, pig, dog and birds.

VMB 315 Veterinary Histology

Histological structure of the nervous, cardiovascular, respiratory, digestive, reproductive, urinary and lymphatic systems. Eye and ear. Endocrine system. Integument. Reference will be made to anatomical, physiological and histopathological conditions whenever appropriate.

VMB 320 Veterinary Physiology

Descriptive, quantitative and comparative analysis of the normal function of the nervous, endocrine, cardiovascular, digestive, renal, reproductive and respiratory systems of domestic animals. Physiology of lactation and growth. Homeostasis with emphasis on acid-base balance, water balance, electrolyte homeostasis, glucose homeostasis, thermoregulation. Environmental physiology. Neonatal physiology.

VMB 330 Veterinary Biochemistry

Protein structure and function, plasma proteins, haemoglobin. Energy metabolism, enzymes. Carbohydrates, digestion and metabolism, prostaglandins and steroids. Rumen biochemistry and ruminant energy metabolism. Lactation. Nitrogen balance and amino acid metabolism. Excretion and detoxification. Vitamins. Nucleotides, porphyrins, bile pigments. Nucleic acid structure, function, replication. Genetic code and protein synthesis. Mineral metabolism. Metabolic regulation. Biochemistry of individual tissues. Biochemical veterinary investigations.

AGA 311 Principles of Animal Nutrition

The course reviews the nutrients in feeds, digestion, absorption and metabolism of nutrients in livestock, impact of digestive disorders on productivity of livestock. Nutritional balance and nutritional value measurements.

AGA 332 Applied Animal Nutrition

The course covers processing feed, formulation of feeds for farm animals and treatment of toxic agents.

Fourth Year

VMP 410 Veterinary Pathology

Introduction, history and scope of pathology, its relation with other disciplines, extrinsic and intrinsic causes of disease. Retrogressive changes including various types of degenerations and infiltrations, pigmentation, calcification and necrosis. Disturbances of growth and of circulation. Defence of the body against injury. Gross and microscopic studies of neoplasms of domestic animals including poultry.

Studies of gross and microscopic lesions in cardiovascular, haemopoietic, respiratory, uro-genital, nervous, endocrins, locomotor and digestive systems. Sensory organs, skin, and appendages.

VMB 425 Veterinary Pharmacology

Introduction with drug action, receptor theory, pharmacokinetics, pharmacodynamics. Prescription writing. Routes of administration of drugs.

Autonomic nervous system and smooth muscle pharmacology. Peripheral nervous system with neuromuscular blocking drugs and local anaesthetics. Drugs acting on the cardiovascular, renal, respiratory and gastro-intestinal systems. Central nervous system drugs including tranquillisers, sedatives, anaesthetics and anti-epileptic drugs.

Chemotherapy of microbial and parasitic disease. Inflammation and its treatment, corticosteroids and their uses

VMP 430 Veterinary Microbiology and Immunology

Historical background, classification, morphology, characterisitics and physiology of pathogenic organisms including bacteria, mycoplasma, rickettsia and fungi. Microbiological techniques and methods, sterilisation and disinfection.

Infection, resistance and immunity, toxin and antitoxin, agglutination and precipitation, cytolysis and complement fixation, phagocytosis, anaphylaxis and allergy, modern developments in immunology.

The viruses, general characterisitcs and methods used in their study, classification and characterisitcs of each of the important virus groups.

VMP 440 Veterinary Parasitology

The biology and morphology of helminths, arthropods and protozoa in relation to the pathogenesis , epidemiology, diagnosis, treatment, control and prevention of diseases (including the zoonoses) caused by metazoan and protozoan parasites of domesticated and wild animals.

AGA 411 Pig and Poultry Production

The course covers popular breeds of pigs used in the pig industry, principles of managing piglets and breeding stock (sows and boars); planning and management of a commercial piggery enterprise. In addition different breeds/strains of poultry common in Zambia will be studied including the management of a commercial hatchery enterprise and of commercial laying and broiler operations.

AGA 322 Ruminant Production

The course covers different breeds of dairy and beef cattle, their management and feeding practices of different classes of beef and dairy cattle. Knowledge of establishing and running a dairy farm and beef ranch.

Production methods of sheep, goats and rabbits, both on small holdings and on ranches are also reviewed in this course.

Fifth Year

VMD 515 Infectious Diseases of Livestock

Introduction. General aspects of infectious diseases, their diagnosis, treatment, control and prevention.

Diseases of livestock caused by protozoa, helminths and arthropods, their diagnosis, treatment and control. Viral diseases affecting more than one organ system or the body as a whole. Viral diseases of the skin, respiratory, alimentary, genital and nervous systems. Bacterial and fungal diseases affecting more than one organ system or the body as a whole. Bacterial and fungal diseases of the skin, respiratory, alimentary, urogenital and nervous systems.

VMC 510 Clinical Veterinary Medicine I

I Introduction to the clinical examination of large and small animals: history (anamnesis). General examination of the patient. Animal handling and restraint. Examination of the repiratory, cardiovascular, urinary and nervous systems, alimentary tract, skin and coat. Examination of the herd.

II. Water and electrolyte imbalances, metabolic diseases and nutritional deficiences.

III. Toxicology: Inorganic, organic, plant poisons, plants by family.

IV. Systemic medicine: diseases of the alimentary tract, liver and respiratory system.

VMD 540 Veterinary Epidemiology and Livestock Economics

Introduction to epidemiology, data and sources of data. Tests, sampling, measuring disease and productivity. Descriptive epidemiology, causation observational studies, intervention studies. Monitoring and outbreak investigation.

Introduction. Production economics. Supply and demand, prices and price formation, farm budgeting. Project appraisal, management information systems and animal health economics.

VMD 530 Veterinary Clinical Pathology

Introduction to Clinical Pathology, collection and preservation of specimens. Cytology: exfoliative cytology, transudate and exudate, vaginal smears.

Haematology: definition of descriptive terms, collection and examination of blood and bone marrow, blood smears, normal blood values, blood cell counting, haemoglobin, erythrocyte sedimentation rate and packed cell volume, protein, fibrinogen. The erythrocyte and its disorders, leucocyte and its disorders, thrombocytopaenia and haemostatic disorders. Interpretation of haematological findings in relation to disease.

VMC 520 Veterinary Surgery I - Anaesthesiology & Radiology

General principles of surgery, sterile techniques, asepsis, fluid therapy and shock. Burns and other skin lesions. Veterinary Radiology: hulstory, radiation safety, the X-ray machine and accessory equipment. Density and contrast, radiographic positioning, development and radiological interpretation, radiotherapy.

Abdominal surgery including all organs within the abdomen in small and large animals including hernias. Castration, disbudding, dehorning.

Veterinary anaesthesia: the principles of veterinary anaesthesia. Local infiltration, regional, spinal, epidural and paravertebral analgesia. Premedication and general anaesthesia.

VMC 535 Veterinary Reproduction & Obstetrics I

Revision of the anatomy and physiology of reproduction in normal domestic animals. The normal cyclic cow, establishment and development of pregnancy, parturition. Role of nutrition in fertility. Control of oestrous cycles, synchronisation, induction of parturition. Abnormalities of pregnancy, fetal malformations. Obstetrics and neonatology. Comparative aspects of the above.

Sixth Year

VMC 610 **Clinical Veterinary Medicine II**

Continuation of Veterinary Medicine I

I. Systemic Medicine: diseases of the cardiovascular, nervous, urinary, musculo-skeletal systems. Diseases of the blood and blood-forming organs, skin, eye.

II. Special Medicine I: Mastitis, lameness, sudden death, diseases of young animals, specific feedlot diseases.

III. Special Medicine II: Special emphasis on the differential diagnosis of diseases caused by bacteria, viruses, fungi and parasites in the different species of domestic animals.

VMD 611 **Preventative Veterinary Medicine**

Introduction: livestock production systems and diseases, livestock movement control, vaccination and vaccination campaigns, environmental hygiene, depopulation, test and slaughter methods. Strategic treatment and chemoprophylaxis, vector control strategies new developments and issues in planning control programmes.

VMD 612 **Veterinary Extension & Jurisprudence**

Administration and organisation of Veterinary Services and schemes for livestock development and animal health. The relationship of the veterinarian to the public and colleagues. The administration of Legal Acts involving animal health and production, veterinary clinical services and livestock and wildlife control.

VMC 620 **Veterinary Surgery II**

Lameness in large animals. Surgery of oral cavity. Conditions of the upper respiratory tract of horses. Orthopaedic surgery, neurology and surgical conditions and surgical interventions in the nervous system. Reconstruction surgery, introduction to Veterinary Oncology.

VMD 630 **Veterinary Public Health**

Role of the veterinarian in Veterinary Public Health. Food Hygiene: Food use of organs and tissues. The processing and preservation of food. Prevention of food-borne diseases and food-poisoning. General pathology of animals in relation to food hygiene and food additives. Meat and milk hygiene: the construction, layout and sanitation of abattoirs, management of animals before slaughter, *ante mortem* inspection, method of slaughter. Preparation of carcases and offal. *Post mortem* veterinary inspection. Bacteriology of meat and milk and factors spoiling quality of milk and meat. Treatment and use or disposal of by-products and condemned meat. Inspection and control of poultry meat and fish. The hazards of milk-borne diseases, milk hygiene and processing.

Environmental hygiene: air and water pollution. Bacteriological and biochemical inspection of drinking and industrial water. Treatment of the industrial and general abandoned materials and water. Eradication of injurious insects, rats and others.

Zoonoses: definition and classification of zoonoses. Epidemiology of zoonotic diseases. Prevention and eradication of zoonoses.

Laboratory animals: hygiene, feeding, management methods, prevention of infectious diseases of laboratory animals.

VMC 635 **Veterinary Reproduction & Obstetrics II**

Continuation of Veterinary Reproduction & Obstetrics I with an emphasis on infertility of individual animals and herd aspects - records and fertility programmes. Comparative aspects of fertility and infertility. Artificial insemination and embryo transfer as techniques to enhance production.

Textbooks

(Latest Edition unless otherwise stated)

VMB 210 Veterinary Anatomy and Physiology

Junqueira, L.C. & Carneiro, J., "Basic Histology".
Ganong, W.F., "Review of Medical Physiology"
Dyce, Sack & Wensing, "Textbook of Veterinary Anatomy"

VMB 211 Veterinary Embryology

Noden, D.M. & de Lahunta, A., "The Embryology of Domestic Animals"

VMB 310 Veterinary Anatomy

De Lahunta, A. & Habel, R.E., "Applied Veterinary Anatomy"
Garrett, P.D., "Guide to Ruminant Anatomy based on the Dissection of the Goat"
Dyce, Sack & Wensing, "Textbook of Veterinary Anatomy"
Ashdown, R.R. & Done, S.H., "Colour Atlas of Veterinary Anatomy"

VMB 315 Veterinary Histology

Dellmann, H. & Brown, E.M., "Textbook of Veterinary Histology"
Banks, W.M.J., "Applied Veterinary Histology"

VMB 320 Veterinary Physiology

Ganong, W.F., "Review of Medical Physiology"
Swanson, M.J., "Duke's Physiology of the Domestic Animals"

VMB 330 Veterinary Biochemistry

Laboratory Manual for VMB 330
Devlin, T.M., "Textbook of Biochemistry with Clinical Correlations"
Martin, Jr. D.W., Mayers, P.A. and Rodwell, V.M. "Harper's Review of Biochemistry"
Stryer, L., "Biochemistry"
Smith, E.L., Hill, R.L., Lehman, I.R., Lefrowitz, R.J., Handler, and White, A., "Principles of Biochemistry II. Mammalian Biochemistry."

VMP 410 Veterinary Pathology

Thomson, R.G., "Special Veterinary Pathology"

VMB 425 Veterinary Pharmacology

Brander, Pugh and Bywater, "Veterinary Applied Pharmacology and Therapeutics"
Kellerman, Coetler and Naude, "Plant Poisonings and Mycotoxicoses of Livestock in Southern Africa"

VMP 430 Veterinary Microbiology

Tizard, I., "Veterinary Immunology, An Introduction"
Fenner, F. *et al.* "Veterinary Virology"
Carter, Claus and Rikisha, "Essentials of Veterinary Bacteriology"
Outteridge, "Veterinary Immunology"
Timoney, J.F., Gillepsie, J.H., Scott, F.W. and Barlowen, J.E., "Hagan and Bruner's Microbiology and Infectious Diseases of Domestic Animals.

VMP 440 Veterinary Parasitology

Kreier, J.P., "Parasitic Protozoa"
Kettle, D.S., "Medical and Veterinary Entomology"
Soulsby, E.J.L., "Helminths Anthropods and Protozoa of Domesticated Animals"

VMC 510 Veterinary Clinical Medicine I

Chandler, E.A., "Canine Medicine and Therapeutics"
Kelly, "Veterinary Clinical Examination"

VMC 520 Veterinary Surgery I - Anaesthesiology & Radiology

Piermattel and Greeley, "Atlas of Surgical Approaches to the bones of Dogs and Cats"
Turner an McIlwraith, C.W., "Techniques in Large Animal Surgery"
Adams, O., "Lameness in Horses"
Carlson, W.D., "Veterinary Radiology"
Hall, L.W. and Clarkem K.W. "Veterinary Anaesthesia"

VMD 515 Infectious Diseases Of Livestock

Blood, D.C., Radostis, O.M., "Veterinary Medicine"
Timoney, J.F., Gillepsie, J.H. Scott, F.W. and Barlovem, J.E., "Hagan and Bruner's Microbiology and Infectious Diseases of Domestic Animals"
Leman, A.D., *et al*, "Diseases of Swine"
Rosenberger, G., "Clinical Examination of Cattle"
Fraser, C.M., *et. al.*, "The Merck Veterinary Manual"

VMD 540 Veterinary Epidemiology & Livestock Economics

Martin, S.W., Meek, A.H., and Willeberg, P., "Veterinary Epidemiology: Principles and Methods".
Thrusfield, M.V., "Veterinary Epidemiology"
Boehlje, M.D. & Eidman, V.R., "Farm Management"
Colman, D. & Young, T., "Principles of Agricultural Economics"
Pull, S.N.H., Shaw, A.P.M., Woods, A.J., Tyler, L. & James, A.D., "Veterinary Epidemiology and Economics for Africa"

VMD 530 Veterinary Clinical Pathology

Doxey, D.L., "Clinical Pathology and Diagnostic Procedures"
Jain, N.C., "Schalm's Veterinary Haematology"
Kelly, W.R., "Veterinary Clinical Diagnosis"
Coles, E.H., "Veterinary Clinical Pathology"
Benjamin, M.M., "Outline of Veterinary Clinical Pathology"
Kaneko, J.J., "Clinical Biochemistry of Domestic Animals"

VMC 535 Veterinary Reproduction And Obstetrics

Arthur, Noakes, & Pearson, "Veterinary Obstetrics"

VMD 611 Preventive Veterinary Medicine

Schwabe, C., "Veterinary Medicine and Human Health"
Radostis, O.M. & Blood, D.C., "Herd Health : A Textbook of Health and Production Management of Agricultural Animals"
Hofstad, M.S. *et al.*, "Diseases of Poultry"

VMD 612 Veterinary Extension and Jurisprudence

Sharma, S.N., "Veterinary Jurisprudence"
Admans, M.E., "Agricultural Extension in Developing Countries"

VMD 630 Veterinary Public Health

Schwabe, C., "Veterinary Medicine and Human Health"
Rieman, H. and Bayan, F.L., "Food-borne Infections and Intoxications"
Hobbs, B.C. and Roberts, D., "Food Poisoning and Food Hygiene"
Gracey, J.F., "Meat Hygiene"
Hubbert, W.T. *et al.*, "Diseases Transmitted from Animals to Man"
Purdom, P.W., "Environental Health"

VMC 610 Veterinary Medicine I

Chandler, E.A., "Feline Medicine and Therapeutics"
Hendersen, J.A., "Veterinary Medicine"

VMC 620 Veterinary Surgery II

Witticks, W.G., "Canine Orthopaedics"
Slatter, D.H., "Textbook of Small Animal Surgery"
Catcott, E.J., "Equine Medicine and Surgery"
Oehme, F.M. and Prier, J.E., "Large Animal Surgery"
Jennings, P.B., "The Practice of Large Animal Surgery"

Prizes for Distinguished Performance

The School has the following prizes which are donated by the sponsors. On the recommendation of the Prizes and Scholarship Committee all prizes are awarded by the University Senate.

- The **Wellcome (Z) Ltd. Prize** for the outstanding graduating student.
- The **Dr. Christopher Oparaocha Memorial Prize** (formerly The Veterinary Association of ZambiaPrize) for the best Final Year Student in Veterinary Medicine.
- The **Arthur George Calder Memorial Prize** to the best student in Veterinary Surgery.
- The **Chempro (Z) Ltd. Prize** for the best student in Reproduction and Obstetrics.
- The **Lusaka Hindu Association Prize** for the best student in Veterinary Public Health.
- The **Lusaka Hindu Association Prize** for the best student in Veterinary Pathology.
- The **Prof. R.P. Lee Prize** for best student in Parasitology.
- The **Shell Chemicals (Z) Ltd. Prize** for best Third Year student.
- The **JICA Prize** for the best Fifth Year student of the year.
- The **JICA Prize** for the best Fourth Year student of the year.
- The **UNZAVETSA Prize** for the best Second Year student of the year.

Staff Development Programme

Since 1989 when the first graduates from the School became available, there have been Staff Development Fellows in various Departments. Of the first few Staff Development Fellows, four have gone on to further degree studies in the UK. and to Japan. The first two House Surgeons have completed their terms of Office and are now Staff members of the School. There can be at any one time up to four Staff Development Fellows within the School. On the non-Academic side there are now three House Surgeon positions, with two in Clinical Studies and one in Pathology. They augment Staff positions in the clinics and Pathology and receive clinical experience.

HIGHER DEGREE IN THE SCHOOL OF VETERINARY MEDICINE

It is possible for postgraduate students to register for Master's of Science and Doctor of Philosophy degrees by research.

The School is now offering a programme for a Master's Degree in Veterinary Medicine (MVetMed) by course work. The first such degree is in Diagnostic Veterinary Medicine. Four inaugural students have since been enrolled.

REGULATIONS

In addition to the general University regulations for the Degree of Master the following shall apply:

Admission Requirements

1. The minimum qualification for admission into the Master of Veterinary Medicine Programme will be a Bachelor of Veterinary Medicine degree of the University of Zambia of sufficiently high standard or the equivalent from another university or institution.

2. The candidate will normally have also been in full time Veterinary practice for at least one year after graduation.

3. The candidate may be required to undergo such tests, or take other prerequisite or concurrent studies and/or examinations which the School may prescribe.

Duration and structure of the Degree

The Master's Degree Programme in Diagnostic Veterinary Medicine is made up of 2 parts:

Part 1 Curriculum of the consists of the following taught course components;

VMM 740 Clinical Parasitology
VMM 710 Diagnostic Pathology
VMM 730 Clinical Microbiology
VMM 790 Scientific Methodology

There are written examinations at the end of the course work and final assessment is based on performance in these examinations and in other exercises that constitute the courses.

A candidate who fails in one course may take a supplementary examination but on failing the supplementary, will be excluded. A candidate failing more than one course will be excluded from the programme.

Part 2:Consists of an approved research project

Each candidate who passes Part 1 will submit a research proposal which will be assessed by the School Graduate Studies Committee. Successful candidates will be allowed to do a one year research project and to submit a dissertation at the end of the course which will be examined by a Board of Examiners.

Successful candidates in part 1 and 2 will be awarded a MVetMed. degree of the University of Zambia

Officers of the University of Zambia

Chancellor	Mr. J.M. Mwanakatwe, BA, Barrister-at Law, SC.
Chairman of Council	
Vice-Chancellor	Professor A.A. Siwela, BSc. (Zambia), MSc.(London) PhD.(W.Ont.), FLS.
Deputy Vice-Chancellor	Prof. J.M. Mwenechanya. BEng., MSc., PhD. (Manchester), MIEE
Registrar (Acting)	Mr. F. Muyunda, BA.Ed., DipMA.(UNZA), Dip.Management (Nicosia)
Librarian	Dr. H. Mwacalimba, BA.(UNZA), MALS (Syracuse), Cert. Lib.Management, DLIS. (UC. Berkeley)
Deputy Registrar (Academic)(Acting)	Mr. P.S. Ngoma, BA. (UNZA), MSc.
Deputy Registrar (Administration)(Acting)	Mr. P. Mpande
Bursar	Mr. M. Tembo, ACCA
Dean of Students	Dr. F. Ng'andu, LLB.(UNZA), LLM(NY.), PhD(London)
Medical Officer	Dr. T. Mulasikwanda, BSc., MB., Ch.B.(UNZA)

Deans of School

Agricultural Sciences	Dr. V.R.N. Chinene, BAgricSc.(UNZA), MSc. (Wageimagent), PhD.(Hawaii)
Education	Dr. C.P. Chishimba, BA.Ed., MA., MEd., EdD.
Engineering (Acting)	Dr. S.B. Kanyanga, BEng.,(UNZA), DIC. (Imperial College), MSc. (London), PhD. (Sheffield)
Humanities & Social Sciences	Dr. J.D. Chileshe, BA.Ed.(UNZA), MA., PhD. (Sussex)
Law	Dr. R.N. Simbyakula LLB., LLM., PhD.
Medicine	Prof. C. Chintu, MD. DABP., FRCP
Mines	Dr. E.H. Jere, BSc.(Rutgers), MSc., PhD.(Lehigh)
Natural Sciences	Prof. D. Theo, BSc.(UNZA), MSc., PhD.(Wales)
Veterinary Medicine	Prof. C.E.A. Lovelace, BSc.(Brmingham), PhD.(London)
Graduate Studies	Prof. L.P. Tembo, MA.(Otago), Dip.TESL. (Well), DEd.(Col.)

Directors

Centre for Continuing Education	Dr. E. Mumba, BA.Ed.(UNZA), MS.(Indiana), EdD.(British Columbia)
Computer Centre	Mr. M.P. Bennet, BSc.(Eng.), MBCS.
Institute for African Studies	Dr. O.S. Saasa, BA.(UNZA), MSc., PhD. (Sothon)
Rural Development Studies Bureau	Dr. J.T. Milimo, DocSocAntr.(Oxford), MLitt. (Oxford), STL.(Masters in Theology)(Gregorian Univ., Rome)

Sessional Dates for 1994/1995 Academic Year

Semester 1

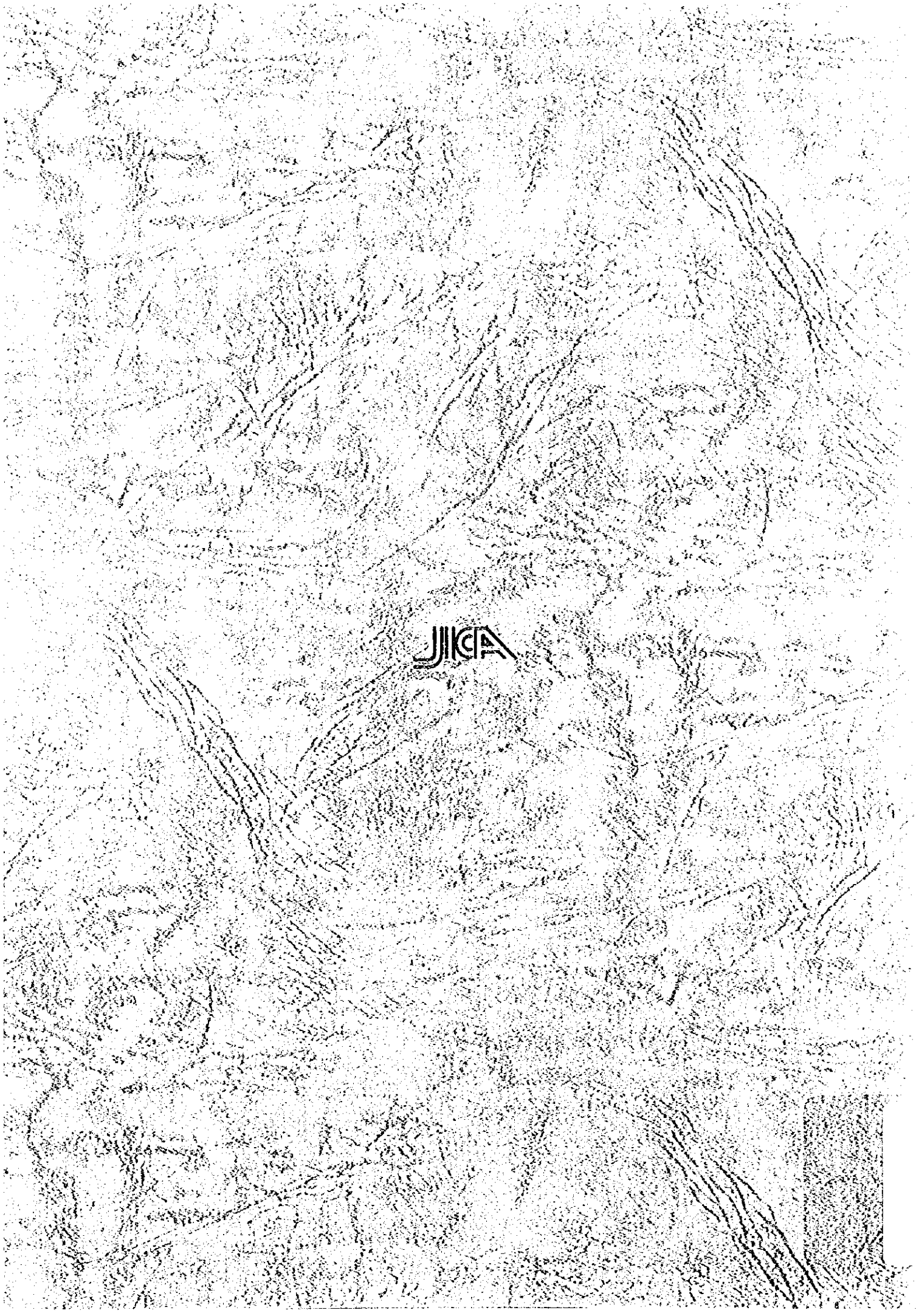
Monday	13th February 1995:	Arrival and Registration of New Students
Wednesday	22nd February 1995:	Arrival and Registration of Returning Students
Monday	27th February 1995:	Classes Begin
Monday	3rd April 1995:	Mid-Semester Break Begins
Friday	7th April 1995:	Mid-Semester Break Ends
Monday	10th April 1995:	Classes Resume
Friday	9th June 1995:	Classes End
Monday	12th June 1995:	Mid-Year Examinations Begin
Friday	16th June 1995:	Mid-Year Examinations End

Semester 2

Monday	10th July 1995:	Classes Begin
Saturday	26th August 1995:	Mid-Semester Break Begins
Monday	4th September 1995:	Classes Resume
Friday	13th October 1995:	Classes End
Monday	23rd October 1995:	Examinations Begin
Friday	10th November 1995:	Examination End
Saturday	11th November 1995:	Long Vacation Begin
Monday	4th December 1995:	Publication of Results

1995/1996 Academic Year

Monday	3rd January 1996:	Arrival and Registration of New Students
Monday	15th January 1996:	Arrival and Registration of Returning Students
Thursday	18th January 1996:	Classes Begin


JICA