

No. 9

THE UNIVERSITY OF ZAMBIA

TECHNICAL COOPERATION: SCHOOL OF VETERINARY MEDICINE

PROJECT PROPOSED FOR FINANCING

BY

THE FOOD AND AGRICULTURAL ORGANISATION (FAO)

APRIL, 1984

(Revised November, 1984)

University of Zambia
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Technical Cooperation: School of Veterinary Medicine

1. The Project

The aim of the project is to strengthen teaching and research in the School of Veterinary Medicine at the University of Zambia (UNZA).

The support required for the project consists in financial assistance towards the cost of the following:

- (a) provision of experts for teaching and research in the various departments of the School.
- (b) provision of laboratory technicians and persons skilled in the repair and maintenance of laboratory equipment.
- (c) provision of Fellowships for local people to be trained in appropriate institutions abroad in order that they can eventually take over from the personnel described in (b) above.

2. The University of Zambia

The University of Zambia was established in 1965 and admitted its first students in 1966. From the outset the University has maintained a strong vocational bias in the provision of its programmes of studies and degrees. As presently constituted it exists in two locations, in Lusaka and in Kitwe. It is organised on a School system and presently has eleven Schools - Agricultural Sciences, Business and Industrial Studies, Education, Engineering, Natural Sciences, and Veterinary Medicine.* It also has a Centre for Continuing Education which provides opportunities for further education programmes for adults and which brings the University to the people through the seminars, workshops, lecture courses and conferences that it organises in various parts of the country. The University has four research wings: the Institute for African Studies, the Rural Development Studies Bureau, the Institute for Human Relations and the Education Research Bureau. In addition there are three less autonomous research units: the Technology Development Advisory Unit, the Kafue Basin Research Committee and the University Energy Research Committee.

The desire of the University to respond to identified national needs, and the flexibility of its system in enabling it to do so, is shown by the recent introduction of degree programmes in Telecommunications (at the request

*The other Schools are: Environmental Design, Humanities and Social Sciences, Law, Medicine, and Mines.

of the Ministry of Power, Transport and Communications), Land Surveying (at the request of the Ministry of Lands) and Manpower Planning (at the request of Cabinet Office) and more recently, Veterinary Medicine. In response to representations from other bodies consideration is actively being given to programmes in Agricultural Engineering, Agricultural Economics and the possibility of full professional training for accountants (in addition to the degree in Accountancy) is also being investigated.

From the time of its establishment in 1966 up to 1983 the University has awarded 5,841 undergraduate degrees of which 3,614 were in humanities-based areas and 2,227 in scientific and technological fields. Although the results of the University's efforts in the production of high-level manpower have been conspicuous, it has not been able to meet all of the projected needs, especially in the scientific and technological areas.

3. The need for Veterinarians

In 1979 FAO dispatched an Identification Mission to Southern Africa in veterinary training. The Mission, in its Report, observed:

The animal health situation is generally characterized by the existence of a variety of infectious and parasitic diseases, of which many are transmitted through vectors. In addition to these, there are those disease conditions that have their origin in the environment, whether it be various forms of malnutrition or other forms of poor management. Often, there is also a combination of infectious and parasitic diseases and environmentally conditioned diseases, the former often thriving where management is poor.

All the countries visited have developed organisational structures to cater for the control of the most infectious diseases, particularly foot-and-mouth disease, and vaccination is commonly practised against many major diseases. Animal health organizations are based on a small cadre of professional level veterinarians supported by a large cadre of animal health assistants, and these can control only the major infectious diseases. Preventive measures on a herd and flock basis, for the improvement of production and management and the individual treatment of valuable animals, are therefore very limited, mostly non-existent. The practice of eating the flesh of animals which have died from disease is common. This represents a hazard for human health because of the many zoonoses present, especially anthrax. The veterinary manpower situation is thus highly unsatisfactory.

Subsequently, the Government of Japan sent a Survey Team in February/March 1983. The Team, in its Report of June 1983 stated:

The domestic animal population of Zambia is high (over 1:3) compared with its human population. Considering the climate, and the natural and geographical features of the country, the future development of her animal husbandry clearly has unlimited potential. However, in Zambia's present situation, it must be admitted that animal husbandry now remains at an undeveloped stage. Owing to endemic disease like Trypanosomiasis (Sleeping Sickness), which is carried by Tsetse flies, and a variety of other diseases, the mortality of domestic animals is rather high and reproductivity is low. The Government of Zambia, to cope with these problems, has endeavoured to promote animal husbandry by, for instance, strengthening the administrative system and improving Zambia's disease-prevention technology and techniques, treatment procedures, breeding methods, and also animal reproductivity. However, the shortage of veterinarians is the most serious problem of all. In 1982, there were some 70 veterinarians serving in the entire country, of whom only 8 were Zambian nationals. In such a situation, it can hardly be said that either this profession or animal husbandry itself has been established on a solid foundation in this country.

Against this background, the Government of Zambia requested the Government of Japan for a Grant to establish the physical plant for the School and to provide the basic equipment. This request was granted and the Exchange of Notes took place on August 30, 1983.

4. The School of Veterinary Medicine

(a) The Physical Plant

Construction of the physical plant started on February 16, 1984 and is expected to be completed in February, 1986. The project is being financed by the Government of Japan under the Grant Aid Scheme. When the project is complete, it will cover a total floor area of 12,254 square meters. This figure includes student hostels, 3,024 m².

(b) Philosophy

The basic philosophy of the School is to seek to produce veterinarians who are competent in identifying and controlling the major diseases of domestic animals, and who are well qualified in animal production, particularly in relation to cattle.

(c) Departments

The School comprises four departments as follows:

- Department of Bio-Medical Sciences
- Department of Pathology, Microbiology and Parasitology
- Department of Clinical Studies
- Department of Disease Control.

(d) The Programme

This is a 6-year programme leading to the award of the degree of Bachelor of Veterinary Medicine, B.Vet.Med. The first year is spent doing basic sciences in the School of Natural Sciences; the second year is devoted to further studies in the basic sciences as well as to introductory animal sciences and veterinary courses. The remaining four years to be devoted to professional veterinary studies.

(e) Student numbers

The following table shows the envisaged student numbers (at various levels) when the School is fully operational in 1987/88:

<u>Course</u>	<u>Years Required</u>	<u>Number of students per year</u>	<u>Total Students</u>
Pre-Veterinary	2	40	80
Veterinary	4	30	120
Master's	2	8	16
Doctorate	3	4	12
TOTAL			228

In the immediate future, however, the following is expected to be the enrolment:

	1983/84	1984/85	1985/86	1986/87	1987/88
Intake	14	15	20	40	40
Totals	14	29	49	89	129

Note: (i) The intake in years 1983-85 is low because during this period the permanent facilities for the School will still be under construction

(ii) Intake here refers to intake into the second Pre-Veterinary year. The first year is common to all students in science-based disciplines.

- (iii) The academic year begins in October and ends in July.
- (iv) No account of attrition has been taken
- (v) Postgraduate studies are not expected to commence until 1988.
- (vi) There is a 5% Quota for foreign students. The present student population has 1 British student.

(f) Staffing

The following tables show the staff requirements when the School is fully operational. More detailed information is shown separately in the Appendix.

<u>Position</u>	<u>Number of Staff</u>	<u>Position</u>	<u>Number of Staff</u>
Dean	1	Senior Technicians	9
Professors	4	Technicians	15
Associate Professors	11	Secretaries	9
Lecturers	15	Administrative Officers	2
Chief Technicians	5	Miscellaneous	36
Pharmacist	1		
Radiologist	1		
TOTALS			71
GRAND TOTAL			109

Allocation of Principal Staff

<u>Department</u>	<u>Dean</u>	<u>Prof.</u>	<u>Assoc. Prof.</u>	<u>Lect.</u>	<u>Chief Tech</u>	<u>Total</u>
Biomedical Science		1	3	4	1	9
Pathology, Microbiology and Parasitology	1	1	2	3	1	8
Disease Control		1	3	4	1	9
Clinical Studies		1	3	4	1	9
Centralised Services	-	-	-	-	1	1
TOTALS	1	4	11	15	5	36

NOTE: During 1984/85, the following positions have been filled:
or are in the process of being filled:

<u>Department</u>	<u>Dean</u>	<u>Prof.</u>	<u>Assoc. Prof.</u>	<u>Lect.</u>	<u>Chief Tech.</u>	<u>Total</u>
Biomedical Sciences			1	1	1	3
Pathology, Microbiology	1	1	2	3	-	7
Disease Control	-	-	-	1	-	1
Clinical Studies	-	-	-	3	-	3
TOTAL	1	1	3	8	1	14

5. Request to FAO

The request is for provision of staff and training fellowships according to the following schedule:

(a) Staff

(i) For the Departments of Biomedical Sciences and Pathology, Microbiology and Parasitology for each of the years 1985-1989, TWO Professors/Associate Professors per Department.* PLUS one Chief Technician per Department for the years 1985-1989.

Thus TOTAL MAN YEARS = 30

* (1 Physiologist, 1 Anatomist, 1 Pharmacologist and 1 Protozoologist).

(ii) For the Department of Disease Control TWO Professors/Associate Professors, ONE Chief Technician for each of the years 1986-1989.

TOTAL MAN YEARS = 12

(iii) For the Department of Clinical Studies TWO Professors/Associate Professors, for each of the years 1986-1989.

Thus, TOTAL MAN YEARS = 10

(iv) ONE Pharmacist and ONE Radiologist for the years 1986-1989.

Thus, TOTAL MAN YEARS = 8

SUMMARY OF MAN YEAR REQUIREMENTS (1985 - 1989)

Professor/Associate Professors	34
Chief Technicians	18
Pharmacist	4
Radiologist	4
	<hr/>
TOTAL MAN YEARS	60

(b) Training Fellowships

It is intended that during the 5-year period 1985-89 TEN persons be trained abroad as follows:

(a) 9 Technicians

This training lasts 2 years. The plan is to send 2 in 1985; 3 in 1986 and 4 in 1987

Man years = 18

(b) 1 Radiologist

This training lasts 3 years.

Man years = 3

TOTAL MAN YEARS = 21

NOTE: (1) The request does not include training fellowships for academic staff. This is because there are unlikely to be many suitably qualified candidates during this period. The situation is expected to improve after 1988 when graduates start emerging from the School.

(2) The request takes into account assistance promised from other sources. Details of this are shown in the appendix.

6. Conclusion

Having regard to the project that has been outlined in the foregoing, the Food and Agricultural Organisation is requested to make available to the Government of Zambia the necessary resources during the five-year period, 1985-1989 for the strengthening of teaching and research in the new School of Veterinary Medicine at the University of Zambia.

References:

1. Identification Mission to Southern Africa on Veterinary Training
- FAO, Rome, 1980
2. Basic Design Study Report on The Construction Project for the School of Veterinary Medicine at the University of Zambia
- Japan International Cooperation Agency (JICA), 1983

APPENDIX A

SUMMARY OF ASSISTANCE EXPECTED FROM OTHER SOURCES

1. JAPAN

Cooperation for an initial period of 5 years commencing 1985. Assistance to include

- (i) SIX professors for each of the years PLUS FOUR or so teaching assistants/technical staff PLUS Short-term lecturers/professors
- (ii) Fellowships for short-term attachments in Japan
- (iii) Provision of equipment and other teaching apparatus over the 5-year period.

2. IRELAND

Cooperation for an initial period of 2 years renewable to 5 years. Assistance to include

- (i) Salary supplementation for inaugural Dean PLUS 2 other long-term lecturers PLUS support for short-term visits.
- (ii) Annual grant of K50,000 for the purchase of small items of equipment and fine chemicals
- (iii) Two Fellowships for each of the five years for the training of technicians in Ireland.

3. UNITED KINGDOM

Assistance to comprise

- (i) Salary supplementation for 3 Professors/Lecturers PLUS 1 Chief Technician.
- (ii) British Technical Cooperation awards for training of technicians in the UK.

APPENDIX B

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

Proposed Establishment of Academic Staff

1984-1988

SUMMARY

Academic Year	Department	Professor	Associate Professor	Senior Lecturer/ Lecturer	Total
1984/85	Dean	1			
	Bio-Medicinals	1	3	4	8
1985/86	Pathology/ Microbiology/ Parasitology	1	2	3	7
1986/87	Disease Control	1	3	4	8
1987/88	Clinical Studies	1	3	4	8
	TOTAL	5	11	15	31

Service teaching in several subjects as shown in the attached details of the departmental staffing will be provided by the School of Agricultural Sciences.

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

Proposed Establishment of Academic Staff

The proposed establishment of Veterinary staff will be as follows:

Department of Bio-medical Sciences

Establishment. Eight made up as follows:

Professor or Associate Professor of Physiology	1
Lecturer in Physiology	1
Associate Professor of Biochemistry	1
Lecturer in Biochemistry	1
Professor or Associate Professor of Anatomy	1
Senior Lecturer or Lecturer in Anatomy	1
Senior Lecturer or Lecturer in Histology and Embryology	1
(The teaching of these subjects began November 1984)	

Associate Professor of Pharmacology 1*

(Teaching will begin in October 1985)

Total Veterinary staff 8

In addition, the subjects of (a) Animal Genetics and Breeding;
(b) Forage Crops, Pasture and Range Management;
(c) Bio-mathematics and (d) Animal Nutrition will be taught
by the School of Agricultural Sciences.

* A case is being considered to increase the establishment in
pharmacology by 1 lecturer.

Department of Pathology, Parasitology and Microbiology

Establishment. Seven made up as follows:-

Professor of Pathology	1
Senior Lecturer or Lecturer in Pathology	1*
Associate Professor in Parasitology	1
Senior Lecturer or Lecturer in Parasitology	1**
Associate Professor in Microbiology	1
Senior Lecturer/Lecturer in Microbiology	2
Total Veterinary staff	<u>7</u>

(The teaching of these subjects will begin in October 1985)

Departments of Disease Control and Clinical Studies

The combined establishment of these two Department is 16
made up as follows:

Professor of Veterinary Medicine (Disease Control)	1
Professor of Clinical Studies	1
Senior Lecturer/Lecturer in Clinical Pathology (Disease Control)	1
Associate Professors in Department of Disease Control (precise subjects still to be designated)	3
Associate Professors in Department of Clinical Studies (precise subjects still to be designated)	3

* A Lecturer in Clinical Pathology belonging to the Department of Disease Control will also teach in this Department.

** An additional supernumerary Lecturer in Parasitology (Helminthology) will be available from Japan in the Academic sessions 1985/86 and 1986/87.

Senior Lecturers/Lecturers in Department of Disease Control	3
(precise subjects still to be designated)	
Senior Lecturers/Lecturers in Department of Clinical Studies	4
(precise subjects still to be designated)	
Total Veterinary staff	<u>16</u>

Note. The subjects of Rural Sociology, Extension and Administration will be taught by the School of Agricultural Sciences.

15 November, 1984

参考資料

ザンビア大学獣医学部技術協力計画
国内委員会設置要綱

第1条 「ザンビア大学獣医学部技術協力計画」（以下「プロジェクト」という。）の効率的な運営を図るため国際協力事業団（以下「事業団」という。）に「ザンビア大学獣医学部技術協力計画国内委員会」（以下「委員会」という。）を設置する。

第2条 委員会は、「事業団」総裁の諮問をうけて、「事業団」が実施する「プロジェクト」に関し

次の事項について審議する。

- (1) 「プロジェクト」実施上の技術的問題に関すること。
- (2) 「プロジェクト」に係る専門家の派遣計画に関すること。
- (3) 「プロジェクト」に係る機材供与計画に関すること。
- (4) 「プロジェクト」に係る研修員の受入計画に関すること。
- (5) その他「プロジェクト」の運営に必要な事項に関すること。

第3条 委員会は委員長及び委員若干名をもって構成する。

第4条 委員長及び委員は総裁が委嘱する。

第5条 委員長は委員会の議事を総括する。

委員長に支障があるときは、予め委員長の指名する委員が、その職務を代行する。

第6条 委員会の招集は委員長が行う。

第7条 委員長が予め認める場合、関係者は委員会にオブザーバーとして出席する事ができる。

第8条 委員会の庶務は「事業団」農業開発協力部畜産開発課が行う。

第9条 委員会の設置期間は昭和59年9月6日から「プロジェクト」協力期間の終了までとする。

ザンビア大学獣医学部技術協力計画国内委員会

1. 尾形 學 麻布大学獣医学部獣医学科 教授（日本獣医学会長）
2. 緒方 宗雄 国際協力事業団国際協力総合研修所 国際協力専門員
3. 金川 弘司 北海道大学獣医学部 教授
4. 熊谷 哲夫 東京農工大学農学部獣医学科 教授
5. 友田 勇 東京大学農学部畜産獣医学科 教授
6. 藤本 胖 北海道大学獣医学部 教授

ザンビア大学獣医学部技術協力計画
国内委員会に係る準備委員会

1. 日 時 昭和59年7月24日(火) 午後2時～5時
2. 場 所 国際協力事業団 第2会議室(48F)
3. 出 席 者 委員(予定者)
外務省 経済協力局技術協力課
文部省 学術国際局国際企画課
JICA 農業開発協力部畜産開発課
4. 議 題
 1. 挨拶
 2. 本プロジェクトの経緯, 委員会設置の趣旨説明
 3. 国内委員会設置要綱の検討
 4. 国内委員会の構成
 5. 技術協力の今後の進め方(案)
 6. 専門家の人選方法
 7. その他

3. ザンビア大学獣医学部の概要

- 基本設計調査報告 参照
- 技術協力事前調査報告

4. 技術協力の今後の進め方

1 「ザンビア大学獣医学部技術協力計画国内委員会」の設置

2 専門家派遣の可能性検討

教官（教授，助教授，上級講師，講師）

技術者（上級技術者，技術者）

その他，機材保守専門家

人選の方法（主要大学，獣医学会，公募，JICA専門家，特別嘱託）

3 長期調査員の派遣

本年9～10月頃長期調査員2～3名を約1カ月派遣しザンビア政府と獣医学部運営計画及び技術協力計画について具体的に協議する。

長期調査員の構成

- ① 獣医教育 1カ月 国内委員会委員
- ② 大学運営 1カ月
- ③ 技術協力計画 1カ月以内 JICA

任務内容（T/R）

- ① ザンビア側（獣医学部長，他）の外国人教官採用計画，運営計画（予算等）の聴取
- ② 技術協力の範囲，内容，運営面の日本の協力の位置づけ，年次別専門家派遣，研修員受入等実行計画（案）協議
- ③ ザンビア政府からFAOへの協力要請に関する協議，調整
- ④ ジンバブエ大学獣医学部設立計画の現状把握，今後の協力関係の協議，調整

4. 実施協議チームの派遣

長期調査員の協議結果に基づき，国内委員会を中心に長期協力方針（10～15年），第1期協力（Phase I）の技術協力計画について策定する。

1985年1～2月，ザンビアに実施協議チーム（4～5名）を派遣し，ザンビア側関係者と協議の上「ザンビア大学獣医学部技術協力計画に関する討議議事録」（Record of Discussions R/D）及び「暫定実行計画」（Tentative Implementation Plan, T/IP）を作成，署名する。

5. プロジェクト方式技術協力の実施

R/D署名の日，または専門家の派遣期日（or 1985. 4. 1）から5カ年の協力期間をもって第1期協力（Phase I）を開始する。

(1) 専門家派遣

長期 2講座中心 { 病理・微生物・寄生虫学 (1985年10月から授業開始)
疾病予防学, 家畜臨床学 (1986年10月から授業開始)

短期

(2) 研修員受入

① 技術研修

② 短期視察

(3) 機材供与

無償資金協力で供与する機材以外で、プロジェクト実施上必要な機材を供与する。

① 車輻

② 教育指導用機材

③ 実習指導用機材

④ 試験研究用機材

予算 年間 30,000 ~ 60,000 千円

(4) 合同委員会の設置

6. ザンビア人獣医学生に対する学位取得

JICAベース研修員受入により学位取得研修を行うことは現在困難である。

文部省国費留学生制度 (国際協力特別枠も含む) によるザンビア人獣医学生のがわが国の大学 (獣医分野), 大学院における学位取得 (学士, 修士, 博士) のための受入れの可能性について今後検討する。

7. FAOとの協力

ザンビア政府は日本が協力できない分野の教官については他の先進諸国 (イギリス, アイルランド, オーストラリア等) 及びFAOに要請するものと思われる。FAOはザンビア政府の要請に基づき, 国連開発計画 (UNDP) または先進諸国援助機関との信託基金 (Trust Fund) 方式による外国人教官 (専門家) の人選を行うことになる。

今後, ザンビア大学獣医学部として一貫した教育方針に基づき, わが国が協力するには2講座以外の講座の運営, 大学運営, 関連試験研究, 施設機材の保守管理等全般にわたり関与する方がプロジェクトの効率的な実施上望ましい。

今後, FAOとわが国のTrust Fundによる外国人教官の備上等の協力についても可能性を検討することが望まれる。 (外務省, 国連局, 国際機関等に対する拠出金予算)

8. ザンビア国内の家畜衛生試験研究機関との連携

農業水資源開発省中央家畜衛生研究所, ツェツェ蠅防除部等の試験研究機関と連携し

① 獣医学生への現場実習

② 大学院レベルでの研究活動における協力を行なう。

必要に応じて本プロジェクト枠内の研究サブプロジェクトとして位置づける。

9. ジンバブエ大学獣医学部との調整

時期を同じくして、ジンバブエ大学獣医学部（5年課程，1学年20名～30名規模うち若干名，南部アフリカ諸国に割当，Aレベル入学資格13年教育修了者）は本年3月建設開始し，工期12カ月で完成予定である。ジンバブエにおいても6～7割は外国人教官を雇傭する計画であるので，ザンビア政府の雇傭計画と競合する可能性がある。

他方，ザンビアは0レベル（12年教育修了者）を入学資格としており，同様のレソト，スワジランド，ボツワナ等はジンバブエよりザンビアへの入学が適している。ザンビア大学獣医大学はNational Universityであるが，一定数（20%以内（但し，大学全体の5%以内））外国人学生の入学を認める方向であり，将来，Southern Africa Regional Universityとして若干の役割を担うことが想定され，ジンバブエとの調整を要することになる。

ザンビア大学獣医学部技術協力計画国内委員会(第1回)

1. 日 時 昭和59年9月6日(木) 14:00～17:00
2. 場 所 国際協力事業団 第6会議室(45F)
3. 出席者 国内委員会委員
外務省
文部省
農水省家畜衛生試験場
中央畜産会
JICA
4. 事 項 (1) JICA挨拶
(2) 出席者紹介
(3) 本プロジェクトの経緯, 計画概要
(4) 技術協力計画の基本的枠組
(5) 専門家人選の方策とその可能性
(6) 長期調査員の派遣計画
(7) その他

長期調査員派遣計画

1. 目 的

事前調査チームの報告に基づき, 本プロジェクト技術協力の基本的枠組等について, 必要な調査を行ない併せてザンビア大学等関係機関と協議する。またFAO, ジンバブエ大学関係者と今後の協力計画について必要な調整を行なう。

2. 長期調査員の方野

2～3名

獣医教育 国内委員会委員

大学運営 #

(技術協力計画) JICA

3. 派遣期日

1ヶ月 昭和59年10月23日～11月22日

FAO本部(ローマ), ジンバブエ大学(ハラレー)訪問を含む

4. 任務内容(terms of reference)

- ① ザンビア大学獣医学部設置計画(基本設計チームとザンビア側との合意事項, 教育年

- 限、定員、講座の構成、主要カリキュラム等)の確認、法制化の検討
- ② ザンビア側の教官採用計画、学生募集計画、カリキュラム計画、運営予算等について聴取し、今後の計画を協議する。
 - ③ 日本側の技術協力の範囲、内容について協議する。(教官、技術者の派遣可能な分野)
 - ④ ザンビア側のFAO、先進諸国に対する協力要請内容の確認、日本側の協力計画との調整
 - ⑤ 技術協力の基本的枠組の検討
 専門家派遣計画、機材供与計画(無償資金協力以外)、研修員受入計画(文部省国費留学生受入の可能性も含む)の検討
 - ⑥ ジンバブエ大学獣医学部設立計画の現状把握(EO援助)本プロジェクトとの諸問題、協力関係の協議(ジンバブエ)
 - ⑦ FAO本部の協力方針の確認、日本側協力計画との調整(ローマ)
 - ⑧ 無償資金協力による施設建設等の進捗状況の把握
 - ⑨ その他必要事項

日 程 (案)

日 順	行 程	調 査 内 容
1	東京 - ローマ	往 路
2	ローマ	ザンビア政府からFAOへの協力要請に関する協議調整
3~4	ローマ - ルサカ - ルサカ	大使館、農業水資源開発省等関係機関表敬、日程打合せ
5 ↓ 15	ルサカ ルサカ	ザンビア大学と協議、現地調査 資料整理、打合せ
16	ルサカ - ハラーレ(ジンバブエ)	在ジンバブエ日本大使館表敬
17	#	「ジ」大学視察協議
18	ハラーレ - ルサカ	資料整理打合せ
19	#	大使館、JICA駐在員報告
20	ルサカ - ロンドン(又パリ) ルサカ	現地調査(獣医教育、大学運営) 復路(技術協力計画)
21	ロンドン(パリ) - 東京 ルサカ	# # # #
22 ↓ 27	ルサカ #	現地調査 資料整理、打合せ
28	#	農業水資源開発省、ザンビア大学と協議
29	#	大使館、JICA駐在員最終報告

日 順	行 程	調 査 内 容
30	ルサカ - ロンドン (パリ)	復 路
31	ロンドン - 東京 (パリ)	

技術協力計画の基本的枠組（検討資料）

1. 協力の意義，目的

ザンビア国の畜産振興上，獣医師の不足が阻害要因の一つとなっている。（全国で75名，うちザンビア人12名）このため，獣医師を国内で養成するため獣医学部をザンビア大学に新設する計画は妥当性を有する。無償資金協力による施設整備の効率的活用をはかり，わが国の援助効果をあげるためにも技術協力が必要とされる。

一方，熱帯における家畜疾病の研究面でわが国の家畜衛生分野の研究交流の意義は大きい。本計画は，獣医学部設立に関する獣医教育分野の技術協力を通じて獣医師を養成することを目的とする。

2. 協 力 機 関

{ ザンビア大学獣医学部
 関連機関 農業水資源開発省中央獣医研究所

3. 協 力 期 間

第Ⅰ期協力（PhaseⅠ） 5年

ザンビア人教官（カウンターパート）の養成に相当期間（学部6年，大学院修士2年，博士3年）要することを配慮し，長期計画（PhaseⅠ～Ⅲ 15年）を想定する。

4. 協 力 分 野 ， 内 容

① 獣医教育協力

4 講座のうち2講座を中心として協力を行なう

病理学・微生物学・寄生虫学講座

疾病予防学・家畜臨床学講座

専門家の職種

教官 教授，助教授，上級講師，講師

技官 上級技官，技官

助手 教官，技官を補佐する職種を設定する（*青年海外協力隊員の活用，協力を検討する）

② 家畜衛生研究協力

獣医教育を補充するため，ザンビア国の疾病の状況を的確に把握し，カリキュラム作成，講義内容に反映させるとともに，大学院学生等の研究指導，学部学生の実習指導等

の場として獣医研究所等家畜衛生試験研究機関と連携し、研究を行なう。

＊ 技術協力の手法

技術協力の本旨に鑑み、専門家がザンビア人教官（カウンターパート）に獣医教育技術を指導することが本来の手法であるが、極端に該当カウンターパートが少ない状況をふまえ、当面、専門家が学生への直接指導（講義・実習）を行なうこととする。

5. 技術協力実行計画

1) 専門家派遣

専門分野	長期（1年以上）	短期
チームリーダー	1	
病理学	1	
微生物学	1	
寄生虫学	1	
疫学		
（大学運営）		
機材保守	1	
（実験助手）		

2) 機材供与

無償資金協力により供与する機材以外のプロジェクト運営に必要な機材を、年間予算の範囲で供与する。（30,000千円～60,000千円）

- ① 車輛
- ② 獣医教育用機材
- ③ 実習指導用機材
- ④ 試験研究用機材

3) 研修員受入

各年度のカウンターパート受入枠（3～4名）の範囲で、ザンビア人教官、技術者を日本に受入れる。

- ① 技術研修
- ② 短期視察

文部省国費留学生受入計画（技術協力特別枠）による留学（学位取得研修）の可能性も併せて検討する。

(参考)

ザンビア大学獣医学部技術協力計画

1. 要請の背景, 経緯

銅の国際市況の低迷から, ザンビア政府は第3次国家開発計画(1979~83)においては食糧の自給達成, 農牧業農村開発, 人的資源の開発を重要戦略としている。このため畜産分野においては同国の草地, 水資源等高いポテンシャルの開発を進めている。しかるに家畜衛生状況はトリパソゾーマ, 東コースト熱等の原虫病, 出血性敗血症, 口蹄疫, アフリカ豚コレラ等の家畜伝染病が常在し, 家畜の損耗をもたらし, 畜産振興の阻害要因となっている。一方, 家畜防疫, 研究に従事するザンビア国内の獣医師は75名内ザンビア人は12名に過ぎず, 獣医師の養成が急務となっている。(1984年)

獣医師1人当りの家畜頭数(家畜単位)は世界平均3800頭に比較し, ザンビアは約19000頭であり, ザンビア政府は1990年までに300名の獣医師養成を目標としている。このためザンビア政府はザンビア大学に獣医学部を設置する構想についてFAOに計画具体化を要請した。その後, わが国に「ザンビア大学獣医学部設立計画」について協力要請してきた。(1980年8月カウンダ大統領訪日時, 要請)

経 緯

1979年	カウンダ大統領 ローマにおいてFAOに獣医学部設立の協力要請
1980年	FAO 南部アフリカ7カ国の獣医教育調査報告書を発表「南部アフリカSADCC 域内共通のRegional Veterinary School をザンビア及びジンバブエに設置することを勧告」
(1980年4月)	イギリスの植民地から一方的独立宣言したスミス政権のローデシアからジンバブエ独立
1981年6月	FAO 南部アフリカ獣医教育施設開発計画書を発表(Development of Facilities for Veterinary Education in Southern Africa)ザンビアを地域獣医学部の設立候補地とすることを勧告
1982年	*SADCC 事務レベル会議 FAO勧告案(ザンビア設置)にジンバブエ反対
5月	ザンビア カウンダ大統領ジンバブエ独立後の政治判断から, 数歩し, ジンバブエに南部アフリカ地域獣医学部設置することに決定
()	SADCC ザンビアにNational Veterinary School を設立することを承認
8月	ザンビア 日本にザンビア大学獣医学部設置に関する協力要請(無償, 技術協力)
10月	JICA 「アフリカ農林業協力プロジェクト・ファインディング調査」

(山崎農計部長以下6名, 57. 10. 26 ~ 11. 10 ザンビア, ケニア)

(注)

*SADCO

Southern African Development Coordination Council 南部アフリカ開発調整会議

参加国(9カ国)ジンバブエ, ザンビア, レソト, マラウイ, モザンビーク, アンゴラ, ボツワナ, スワジランド, タンザニア

1983年

2月

JICA ザンビア政府の無償資金協力要請(ザンビア大学獣医学部施設建設)に対応して, 基本設計事前調査チーム(橋本団長, 金川教授, コンサルタント日建設計以下8名 1983. 2. 6 ~ 3. 5)を派遣
獣医学部設立基本構想についてMinutes交換

5月

JICA 基本設計チーム(橋本団長, 日建設計5名 1983. 5. 22 ~ 6. 3)を派遣

基本設計報告書(ドラフト)を説明しMinutes交換

8月

日本政府(大使館) ザンビア政府との間に交換公文署名「ザンビア大学獣医学部設置に係る無償資金協力」第1期分 24億円(施設本体の建設)

10月

EC(ヨーロッパ共同体) 日本代表部を通じて日本のザンビア協力にクレーム

「ECは南部アフリカ地域共通の獣医教育施設をジンバブエに設立する計画であり, 同地域に2つの獣医学部を設立する必要はなく援助効率上調整を要する。84年3月建設着工 1学年20名規模」

12月

EC 日本側の経緯説明に納得, 今後Multi/Biの案件について情報交換を要望

1984年2月

ザンビア大学副学長他来日 無償入札立会 関係機関訪問

3月

ザンビア大学獣医学部建設着工

4月

JICA ザンビア政府の技術協力要請に対応し, 事前調査チーム(藤本団長, 友田教授, 熊谷教授以下6名 1984. 4. 11 ~ 4. 28)を派遣

7月

日本政府(大使館) ザンビア政府との間に交換公文署名「無償資金協力第2期分 15億円(付帯施設, 機材)」

2. ザンビア政府の技術協力要請

(1) プロ・ファイ調査 (1982年10月)

- ① 試験研究機材の維持, 保守分野の専門家の派遣
- ② ザンビア技術者(カウンターパート)の技術研修(日本での研修を含む)

③ 可能な分野での教官派遣 (臨床)

プロ・ファイチームは、ザンビア側教官(カウンターパート)を欠くためプロジェクト方式技術協力になじみにくく、個別専門家派遣による対応が適当と判断。駐ザンビア大使より技術水準の低い、カウンターパートの不足するアフリカ型協力としてのプロジェクト協力を要請。

(2) 事前調査 (1984年4月)

① 獣医学部4講座のうち、病理・微生物・寄生虫学講座及び疾病予防・臨床獣医学部門の2講座を中心に協力する。長期専門家として、2講座に教授1名、助教授1~2名、上級技術者1~2名の派遣及び可能な範囲で他講座にも短期専門家の派遣を検討する。

② 協力期間は当面5年間とするが少なくとも10年の長期展望のもとに協力する。

③ 1984年9~10月頃長期調査員を派遣し、具体的な技術協力計画を策定する用意がある。

ザンビア大学獣医学部技術協力計画

Mweene 副学長補との打合せ結果(メモ) 59年8月23日 JICA会議室

1. 獣医学部教官の採用計画

1984年10月から専門課程・I(通算第3学年次)の開講される予定であり、これにあわせて生物医学講座関係の教官を中心に当初学部長1名、助教授2名、講師3名、主席技官1名、計7名を採用する計画であった。

学部長(アイルランド人、教授、寄生虫学)は9月に着任の予定。生理学(チェコスロバキア人)、生化学(イギリス人)教官について採用予定だが確定的でない。(往々にして給与等条件で採用が流れるケースがあるとのこと)

この他は、日本、先進諸国(イギリス、オーストラリア、アイルランド等)FAOとの技術協力ベースによる教官採用する予定であり、本年10月に関係機関による会議を開催したい。

2. 獣医学部学生

現在、獣医学部2学年に14名の学生が在籍し、本年10月の新学期から専門課程・I(通算第3学年次)に移行する予定。但し、8月の試験結果により進級がきまる。

3. 先進諸国からの教官採用方式

① アイルランド

ザンビア政府の給与体系に基づき、ザンビア政府(大学)がアイルランド人教官を選採用する。その際アイルランド政府は同政府給与体系との差額を補填している。

② イギリス

アイルランドと同様に給与補填方式。現在、ザンビア大学に33名のイギリス人教官が自然科学部、医学部、工学部等に採用、配属されている。British Councilが窓口となり、公募人選する。

③ オーストラリア

政府間の技術協力協定により、ザンビア国全体で12名の専門家枠が毎年ある。ザンビア大学として3～4名の要求枠を確保したい。但し、人選はザンビア大学がオーストラリアで適任者を探し、要求する方法による。

4. 日本側の準備状況

国内委員会を発足させ、委員を中心に専門家候補者のリストアップ作業中である。

病理学、寄生虫学、微生物学中心にある程度4名の長期専門家(うち2～3名は教授レベル)他短期専門家は確保できる見通しである。

さらに具体的に検討し、9月6日の国内委員で協力可能の範囲等、具体的技術協力を検討する。Technicianについては、人選は白紙である。今後、大学等関係機関にも依頼し、可能性を検討する。

Radiologistの日本からの派遣は困難である。他の先進諸国に要請する方が適当。

5. 関係者会議

本年10月下旬にFAO、先進諸国(アイルランド)、日本の関係者を交えて会議を開催したい。

6. 日本人専門家の宿舎確保

ザンビア側で専門家の宿舎を確保するが、とくに長期専門家派遣計画を前広に提示してほしい。10月の会議の折、提示いただければありがたい。

7. 獣医研究所等との協力連携

Central Veterinary Institute(農業省)等、家畜衛生試験研究機関との協力は必要であり、協力を得るに問題はない。現在も獣医学生の実習の場としてCVIを利用している。

8. 実験動物(大家畜、モルモット、マウス等)の確保

大学牧場の家畜の利用の他、運営費に計上したい。

9. 大学院(Master Course, PhD Course)の早期開始

現在の学生が専門課程を卒業するには1988年10月以降になる。

一方、ザンビア人教官を採用していくには、ケニア等の大学(獣医課程)に留学中の2～3名の学生が卒業後、ザンビア大学獣医学部で大学院修士課程等に入ることが望ましい。

10. ザンビア人以外の外国人学生の入学

大統領令によりザンビア大学では全学生数の5%以内の外国人学生を受入れることができる。したがって、レソト、ボツワナ等O-level中等教育卒業生を受け入れることは可能である。

11. カリキュラム(案)は、基本設計チーム(橋本団長、昨年3月)来訪時に協議作成したOriginal Planに現在のところ変更はない。

II-4 第2回国内委員会

ザンビア大学獣医学部技術協力計画 長期調査員 T/R案 59.10.2

I 基本方針の協議

1. 施設の無償供与に引きつづき、当該施設の有効かつ円滑な利用と運営に資するため、可能な限度において技術協力を行なうこととし、技術協力プロジェクトを企画する。
2. その内容は、専門家派遣(長期及び短期)、資機材の供与、及び研修(日本で)の3本柱とする。
3. 教育協力は、その目的を達成するために長年月を必要とするが、現行の協力方式上の制約もあり、当面、5か年間の協力期間の計画を進める。
4. 専門家の派遣には、次のような制約があり、当面は、現実的で、かつ着実な専門家派遣を計画する。
 - 1) 日本語中心社会であること。
 - 2) 海外留学体験者が少ないこと。
 - 3) 日本の獣医学教育自体、強化充実の途上にあること。
 - 4) 海外、ことにアフリカ地域について、獣医畜産分野の研究調査蓄積が乏しいこと。
5. 研修についても、上記4と同様の事情がある。また、長期間かつ学位取得などは、極めて困難である。

II 個別具体的な協議事項

1. 獣医学部の設置計画、教育計画等を内容とする要綱の策定。

無償供与による教育施設との整合性を確保し、出身国、教育事情を異にする教官間の教育の実際にあたっての整合性、協調性の確保をはかり、かつ、長期にわたる日本の技術協力の円滑な実施に資するため、MAIN ROLE OF THE SCHOOL, DEPARTMENTS, OUTLINE OF THE EDUCATIONAL PROGRAMMES, TEACHING CURRICULUM, STAFFING等を内容とするBASIC CONCEPTを例えばTHE UNIVERSITY OF ZAMBIA CALENDAR 1983-84の

ような形で明確にする。

- 大学院をどうするか
- 卒論はどうか
- カリキュラムの具体的な策定は

2. 日本側技術協力の範囲と内容。

A. 専門家派遣計画

教授相当

病理学, 寄生虫学, 微生物学 各1名

助教授, 講師相当

生物医学, 寄生虫学, 疾病予防学 各1名

上級技官 2-3名

PROJECT ADMINISTRATOR 1名

PROJECT COORDINATOR 1名

短期専門家 5-10名

- (1) 短期専門家の分野及び資格は未定であるが, 日本人長期専門家の補完だけでなく, 全体的な教育のカリキュラムのなかで考える。
- (2) 実習の補助, 指導にあたる専門家を確保する必要がある。
- (3) 各講座ごとに, 教官の員数と区分を定めており, 上述の派遣案はそれに合致しないが, 問題はなにか。
- (4) 学部長は, 学科を担当するか。その学科に, 他の教授をあてることができるか。
- (5) 派遣専門家の教官としての資格認定はどうか。制度的に, また実際的に。
- (6) 教官等の雇傭条件, 手順と日本の協力制度との調整をどうするか。
- (7) 短期専門家の教官としての役割と, その単位の考え方。
- (8) PROJECT ADMINISTRATORを, 運営会議, または評議会のメンバーに加えられるか。

B. 機材供与計画

- (1) 施設関係の設備機械について, 補修その他のスペアパーツ, 消耗品を配慮する。具体的にどんな物があるか。
- (2) 実習, 実験用機器, 消耗品等を配慮する。日本からの専門家派遣の教室を重点的にとりあげ, その他の教室についてもできるだけ配慮する。PROJECT ADMINISTRATORの役割が重要となる。第1年次分の予備協議を行なう。
- (3) 年間予算は, 60年度3-6,000万円を予定し, 以降4年間は暫増の必要があり, その後は並行的となろう。

- (4) 無償供与の機材の見直し — できるだけ単能型の機械とし、それらと整合性を保つこと。

C. 研 修 計 画

- (1) 当面、短期視察を中心とするが、カウンターパートはほとんどいないので、該当者があるか。
- (2) 外国の大学卒業生等で、将来、教官となりうる者を探し、専門分野の技術教育研修を行なうことを計画する。
- (3) 施設の維持、管理、教育用機材等の補修等の技術者の研修を計画できるか。

D. その他 — R/D原案の検討

- 1) 期間は、第1期5年間
- 2) 第三国の学生も受け入れる。
- 3) 獣医研究所と連携した調査研究
- 4) カウンターパートの早急な養成確保
- 5) 合同委員会の設置と、運営委員会等への参画

III その他の協議事項 — 既要望に関して

- 1) 教授の短期派遣 — 目的、必要性に応じて、個別、具体的に検討の用意あり。
- 2) 学外試験官としての教授の派遣 — 内容不明だが、前者に準じる。
- 3) 講師の長期派遣 — 前述の派遣計画のなかで実施する。
- 4) 現地人教官養成の援助としての国外研修 — 日本でならできる。第三国では制度的に困難。現実には、人がいないのではないか。
- 5) 学部卒業生教育の財政的援助 — 内容不明
- 6) 日本の大学との提携 — 日本全体としての技術協力計画として考え、特定大学との提携は行わない。

IV 調 査 事 項

- 1) 教官の採用計画、その実績、進行情況
 - 2) 学生募集計画
 - 3) 学部運営予算
 - 4) 施設建設の進捗状況
- (FAO) 本件についての協力方針とその具体的な動き
- (ジンバブエ) EC援助の現状把握、連携協調の可能性

ザンビア派遣中の協力隊員 (全体 57 名 累積 219 名)

1. 勝 泰 彰 昭 33. 3. 9 生 酪農学園大学 55 年卒
56. 10. 2 - 59. 10. 1
農業水資源開発省獣医局
C/O Provincial Veterinary Office, Choma
2. 萩 原 博 昭 25. 5. 1 生 酪農学園大学 48 年卒
57. 10. 6 - 59. 10. 5
C/O Zambia Institute of Animal Health, Veterinary
3. 岩 本 正 満 昭 28. 11. 22 生 山口大学大学院農学研究科 54 年卒
58. 8. 3 - 60. 8. 2
C/O Provincial Veterinary Office, Choma
4. 増 田 九 子 昭 31. 10. 1 生 鳥取大学 56 年卒
58. 10. 4 - 60. 10. 4
C/O Regional Diagnostic Laboratory, Mazabuka
5. 福 永 謙 二 昭 33. 9. 8 生 帯広畜産大学酪農学科 56 年卒
59. 4. 4 - 61. 4. 3
C/O Provincial Agricultural Office, Western Province.
Mongu

ザンビア大学獣医学部技術協力計画第3回国内委員会

59. 12. 12 (14:00 ~ 18:00) JICA 第6会議室(45F)

開 会

あいさつ

専門家候補者の紹介

長期調査員報告

R/Dチーム派遣計画

技術協力計画

R/D(案)

TIP

59年度供与機材

初年度計画

そ の 他

閉 会

NAME LIST OF CANDIDATES FOR EXPERT (SCHOOL OF VETERINARY MEDICINE, ZAMBIA UNIVERSITY)

Name	Date of Birth	Name of Employer, Title of Post	Last Educational Institution	Main Research Work Achievements
ISHITANI Ruizo	Oct. 19th, 1916	Former JICA Expert on Animal Health Improvement Programme in Indonesia	Faculty of Agriculture, Hokkaido University (D.V.M. ; Ph.D.)	Engaged in for 40 years on Veterinary Pathological Research Work and Education. Pathological Study on: Avian Leukosis, Equine Infectious Anemia, Pathological effect in Viral Diseases, Bacterial and Parasitic Disease, etc
SHIMIZU Kineiiji	Dec. 27th, 1921	Obihiro University of Agriculture and Veterinary Medicine, Professor; Division of Microbiology, School of Veterinary Medicine	Faculty of Agriculture, Hokkaido University (D.V.M. ; Ph.D.)	Studies on tissue culture method and complement-fixing antigens of Toxoplasma gondii; Prevalence of Equine Infectious Encephalitis in Hokkaido; Salmonella types in animals in Sapporo, etc
HIROTA Yoshikazu	Jan. 21st, 1948	The University of Tokyo Assistant; Veterinary Internal Medicine, Faculty of Agriculture	Post-graduate School, University of Osaka Prefecture (D.V.M. ; Ph.D.)	Studies on maturity of Antigenic-Specific B-cells in Avian Humoral Immune System, Immunopathology in the cat experimentally infected with feline leukemia virus, etc
KITAOKA Shigeo	July 25th, 1925	National Institute of Animal Health, Ministry of Agriculture, Forestry and Fisheries, Chief; 1st Parasitology Laboratory	Tokyo University of Literature and Science (M.S. ; Ph.D.)	Rate of digestion of blood meal and nitrogen, iron, and sterol economy during the ovipositing process in the tick; Physiological and ecological studies on some tick; Susceptibility of honey bee larvae to spores of Bacillus larvae, etc
TADA Yusuke	May 15th, 1950	Nippon Merck Banyu Co., Ltd Research Laboratories, Research Scientist; Dept. of Pharmacological Biology	Faculty of Veterinary Medicine, Hokkaido University (D.V.M. ; M.S.)	Orientostrongylus exoensis from the brown rat; Helminth Parasites of house rats in Hokkaido; Annual fluctuation of Schistosoma japonicum infection in field rats, etc
TERAMURA Masae	Aug. 10th, 1923	Silver Volunteers (Malaysia)	Post-graduate School, University of Cincinnati, Ohio (M.S.)	Engaged in for 3 years as UNICEF staff, United Nations; Especially worked for, as the chief secretary, the International Infantile Diet Industry Council from Oct. 1960 to Oct. 1963.

各省協議

ザンビア大学獣医学部技術協力計画実施協議調査団の派遣について

59. 12. 10 (10:30 ~) 外務省 250-B

1. 調査団の派遣目的

ザンビア共和国の畜産振興上、獣医師の不足が阻害要因の一つになっている。このため、同国政府は獣医師養成機関をザンビア大学獣医学部として設立する事につき、日本国政府に資金協力及び技術協力を要請してきた。日本国政府は、この要請を受け、無償資金協力で同獣医学部の建設を行なうことを決定し、引続き、技術協力を行なうこととし、事前調査団、長期調査員を派遣し、大学関係者をはじめ、政府機関関係者と協力計画につき、調査を行なった。

これらの経緯をもとに、本調査団は、次の点につき、協議検討を行なうものとする。

- (1) 施設の建設状況視察
- (2) 獣医教育及び家畜衛生関係機関（ザンビア及びケニア）の視察
- (3) 協力期間の設定
- (4) 専門家派遣計画、機材供与計画及び研修員受入計画の作成
- (5) 事業協力事項の確認と合意

2. 調査団について

(1) 調査団名

ザンビア大学獣医学部技術協力計画実施協議調査団

(2) 調査団構成（5名）

団長	総括	1名	文部省
	協力企画	1名	"
団員	獣医教育（病理）	1名	"
"	"（家畜疾病）	1名	"
"	技術協力	1名	JICA

(3) 派遣期日

昭和60年1月13日～1月28日（16日間）

(4) 調査日程

日順	月日	曜日	行程	摘要
1	13	日	成田発	
2	14	月	パリ経由	
3	15	火	ルサカ	

日順	月日	曜日	行程	摘要
4	16	水	ルサカ	大使館，国家開発計画省，農業水資源開発省， ザンビア大学表敬及び日程打合せ
5	17	木		ザンビア側と技術協力計画に関する詳細打合せ
6	18	金		" " "
7	19	土		中央獣医学研究所等獣医学関係機関視察
8	20	日		野外防疫活動視察
9	21	月		資料整理
10	22	火		日本大使館にてR/D署名に関する説明，打合せ
11	23	水		討議議事録署名
12	24	木	ルサカ～ ナイロビ	移 動
13	25	金	ナイロビ	ナイロビ大学獣医学部，ケニヤッタ農工大学視察
14	26	土	ナイロビ～ ロンドン	
15	27	日	ロンドン発	
16	28	月	成田	

3. Record of Discussion について

R/D 案 別添のとおり

Ⅱ 「ザンビア大学獣医学部建設計画基本設計調査報告書」(抜粋)

第4章 計画の内容

4-1 計画の目的と基本構想

4-1-1 計画の目的

本学部は、家畜疾病に直接関連する専門知識のみならず、家畜の改良、増殖についても対応力を持ち、これらの知識を一般農家へ伝える能力を有する獣医師を養成するものである。

4-1-2 基本構想

(1) 獣医学部の内容

ザンビア国政府の要請による同学部の基本構想は、F A Oが作成した南部アフリカ地域大学の設立構想に関するプロポーザルをそのまま用いたもので、大学当局独自の構想として特定されたものではなかった。調査団は、ザンビア大学関係者、農業省関係者等と協議を進めると共に、併せて同国の畜産事情、家畜疾病の予防面の行政体制を調査した上で、調査団としての判断に立脚した最も望ましいと考えられる基本構想を先方へ提案した。先方の当初の要請では、履修期間が教養1年、専門5年の計6年とする考え方であったが、ザンビア国での中等教育レベルが低いことより、教養2年と専門4年、計6年とすること、更にカリキュラムについてもザンビア国の実情を考慮の上必要な修正を行ない、下記の内容で合意を得た。

a. 本獣医学部設立の目的

ザンビア国の畜産行政面で、家畜の疾病予防、改良及び増殖の分野における強力な指導体制確立に従事出来る優秀な獣医師を養成する。

b. 講 座

先方要請では「解剖・生理及び生化学」、「病理・寄生虫・微生物」、「内科・薬理」、「外科・繁殖」、「予防医学・食品衛生」の5講座であったが、ザンビア国の教育、研究施設、各種農場などの視察、ザンビア大学その他のカウンターパートとの協議の中で、ザンビア側の要請ベースとなっているF A Oの基本構想が欧米先進国を手本としたもので理想的過ぎる所があり、ザンビア国の実情に馴染み難いものと判断し、世界的な動向、実状、日本での経験も考慮しつつ、「生物医学」「病理・微生物・寄生虫学」「家畜疾病予防学」及び「臨床獣医学」の4講座とし、内容も合理的に集約した次の科目を提案し、協議の結果、合意をとりつけた。

1) 生物医学講座

科目：解剖学，生理学，生化学及び薬理学

2) 病理学, 微生物学, 及び寄生虫病学講座

科目: 病理学, 微生物学, 寄生虫病学

3) 家畜疾病予防学講座

科目: 伝染病学, 疾病予防学又は公衆衛生学, 食品衛生学, 環境衛生又は野生動物病学

4) 臨床獣医学講座

科目: 繁殖学及び獣医産科学, 人工授精学及び家畜育種学, 内科学, 外科学及びX線診断学

c. プログラム

課 程	修業年数(年)	学生数(名)		目 的
		各学年	計	
教 養	2	40	80	専門移行の為の準備
専 門	4	30	120	獣医師の育成
マスターコース	2	8	16	教師・研究者の育成
ドクターコース	3	4	12	同 上
合	計		228	

d. 学 科 目

学生のレベルの低さも考慮し, 最初の2年は教養課程のみとする。また専門に移った後も, 当初は基礎的なものに重点を置き, 徐々に専門応用的なものに入ってゆくように工夫し, かつ遺伝学と生物統計学(Genetics and Biometrics, 2年次), 家畜栄養学(Animal Nutrition, 3年次), 及び家畜生産学(Livestock Production, 5年次)を加えた。

(学科目)

年 次	学 科 目
1	予備授業-I 生物学, 化学, 物理学, 数学
2	" - II 生化学, 有機化学, 遺伝学, 生物統計学及び解剖学, 生理学, 社会学総論
3	専門授業-I 比較解剖学, 組織学, 胎生学, 動物生理学, 薬理学及び薬物学, 動物栄養学及び食餌学, 動物育種学
4	" - II 比較病理学, 組織病理学と臨床病理学, 微生物学(細菌学及びウイルス学), 免疫学, 寄生虫学及び昆虫学

年次	学 科 目
5	専門授業-Ⅲ 疫学及び家畜衛生学，公衆衛生学と食品衛生学，環境科学又は野生動物疾病学，臨床研究への総論及び畜産学
6	" -Ⅳ 家畜繁殖学及び産科学，人工授精学，臨床医学，外科学及びX線診断学，獣医師の使命

e. 本計画による獣医学部の運営上必要とされる教官の陣容について，調査団とザンビア大学との間で下記の如く合意した。この配置に基づき，後出の施設を計画した。

i) 陣 容

地 位	人 員
学 部 長	1
教 授	4
助 教 授	11
講 師	15
主 席 技 手	4
薬 劑 師	1
X 線 技 術 士	1
主 任 助 手	10
技 手	15
秘 書	9
事 務 員	2
そ の 他	36
合 計	109 名

ii) 主要教官の配置

	学部長	教 授	助教授	講 師	主 席 技 手	小 計
生物医学講座	1	1	3	4	1	9
病理学・微生物学・寄生虫学講座		1	2	3	1	7
疾病予防講座		1	3	4	1	9
臨床獣医学講座		1	3	4	1	9
小 計	1	4	11	15	4	
合 計	35					

OVERALL WORK SCHEDULE

SUPPLY & INSTALLATION OF VETERINARY EQUIPMENT
SCHOOL OF VETERINARY MEDICINE UNIVERSITY OF ZAMBIA

Work Schedule (1)

ITEM OF WORK	1984					1985												1986		
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
1. SHOP DRAWING (1:50)			█																	
2. LAP DRAWING				█																
3. SITE STUDY				█																
4. ORDER TO MAKER				█																
5. PRODUCTION					█															
6. INSPECTION					█															
7. PACKING										█										
8. CUSTOMS CLEARANCE											█									
9. SHIPPING												█								
10. OCEAN TRANSPORTATION													█							
11. CUSTOMS CLEARANCE (DAR-ES-SALAAM)														█						
12. TRANSPORTATION ON RAIL & TRUCK															█					
13. CUSTOMS CLEARANCE																█				
14. TEMPORARY OFFICE CONSTRUCTION																				
15. UNPACKING																				
16. BRINGING IN																				
17. INSTALLATION																				
18. ADJUSTMENT & TESTING																				
19. SITE INSPECTION																				
20. DELIVERY																				
21. DOCUMENTATION																				
22. TRAINING																				
23. MONTHLY REPORT																				

FOR DETAILED SCHEDULE OF WORKS
OCT - DEC FOR 1 - 5 WORK, SEE
SEPARATE SHEET "DETAILED WORK
SCHEDULE"

PACKING LIST

INSPECTION REPORT

INSTRUCTION MANUAL

DETAILED WORK SCHEDULE

WORK SCHEDULE (2)

OCT, NOV & DEC.

SCHEDULE OF SUBMITTALS	OCTOBER			NOVEMBER					DECEMBER					OCT, NOV & DEC.					
	25	28	31	4	9	13	17	21	25	29	1	5	9	13	17	21	25	29	
1. SHOP DRAWING (1:50) As in Spec. 23.1	██████████																		
2. IAP DRAWING As in Spec. 23.7							██████████												
3. MASTER LIST (Classified by type) Spec. 23.2	██████████																		
4. LIST OF MANUFACTURERS Spec. 23.4	██████████																		
5. SPECIFICATIONS																			
Item Group (1)	██████████																		
Group (2)	██████████																		
Group (3)	██████████						██████████												
6. CATALOGUES																			
7. SITE STUDY					██████████														
					11/5 - 11/12 LUSAKA														
8. ORDER TO MANUFACTURERS									██████████										
9. MANUFACTURERS' SHOPWORKS (Shop Drawing & Production)																	██████████		
10. MANUFACTURERS' SHOPWORKS OF INSPECTION																			

4-1-2 Basic Concept of the School of Veterinary Medicine

(1) Background, purpose and organization

After the study of the original concept (called the Preliminary Sketch) of the school projected by the University of Zambia, the mission has proposed plans and obtained the agreement of the Zambian officials responsible on a new basic concept of the school. The mission's proposal was based upon (a) its judgement of needs and of what would be the most appropriate feature to incorporate in order to fulfil these, after discussion with the Zambian officials concerned and (b) its study of the situation of the livestock industry and of the administration system in the country.

According to the original requirement of the Zambian Government, the length of time required for completion of the course was six years in total, divided into one year of pre-veterinary and five years of undergraduate studies. Considering the level of the graduates of the secondary schools in Zambia, the mission and the Zambian officials have revised the original plan to a total of six years consisting of a two-year pre-veterinary course and a four-year undergraduate course.

The following points were agreed by the two parties:

1) The purpose of the School

For the development of the livestock industry in Zambia, a powerful administration system in the field of prevention and control of animal diseases and improvement of the breeding and reproductivity of cattle are necessary. The purpose of this school is to train such experts to engage in the above fields.

2) Departments

According to the original idea, the School was to be composed of five departments, namely, those of Anatomy, Physiology and Biochemistry; Pathology, Parasitology and Microbiology; Medicine and Pharmacology; Surgery and Reproduction; and Preventive Medicine and Food Hygiene.

As a result of (a) the discussions between the parties, (b) the abovementioned study of the livestock industry and administration system, and (c) consideration of both international trends and the experience of Japan, a revised concept plan having four departments has been agreed on. The new departments are: the Department of Bio-Medical Sciences, the Department of Pathology, Microbiology and Parasitology, the Department of Disease Control, and the Department of Clinical Studies. In accordance with the reorganisation and renaming of the Departments, the subjects to be covered by them was radically reconsidered. No special department will be required for animal sciences, since these subjects can be adequately provided at the School of Agricultural Sciences (already in existence in temporary facilities).

The subjects taught by each of the new departments are as follows:

i) Department of Bio-Medical Sciences

Anatomy

Physiology

Biochemistry

Pharmacology

ii) Department of Pathology, Microbiology and Parasitology

Pathology

Microbiology

Parasitology

iii) Department of Disease Control

Epizootiology

Preventive Medicine or Public Health

Food Hygiene

Environmental Science or Wild Life Disease

iv) Department of Clinical Studies

Animal Reproduction and Veterinary Obstetrics

Artificial Insemination and Animal Breeding

Medicine

Surgery and X-Ray Radiation

3) Programmes

The following Table shows the courses to be conducted at the proposed School. For each course, the number of years of study required, the student capacity and the purpose are indicated.

Courses	Years required	Number of students		Purpose
			Total	
Pre-veterinary	2	40	80	Preparation for veterinary course
Veterinary	4	30	120	Veterinary training
Master	2	8	16	Training of teachers and researchers
Doctorate	3	4	12	Training of teachers and researchers
Total			<u>228</u>	

At first, the mission thought that a total of five years (one year's pre-veterinary course and four years of undergraduate course) would be enough for training veterinarians in the four departments. However, in view of the level of secondary school graduates in Zambia, both parties agreed that six years were necessary. These would be made up of two years for pre-veterinary training and four years for veterinary studies.

4) Curriculum

Also because of the level of secondary school graduates, both parties have agreed that even after the pre-veterinary training of two years it is necessary to provide the students with a curriculum including a certain amount of fundamental or general lectures during the initial stages of the veterinary course, and thereafter the students will gradually receive more and more lectures that are more specialized in content and application. Furthermore, the parties agreed on the addition of the following lectures to the original plan.

- * Genetics and Biometrics in the 2nd year
- * Animal Nutrition and Dietetics in the 3rd year
- * Livestock Production in the 5th year

The curricula agreed upon are as follows:

<u>Year at University</u>	<u>Curriculum</u>
1st	<u>Pre-Veterinary I</u> Biology Chemistry Physics Mathematics

2nd

Pre-Veterinary II

Biochemistry and Organic Chemistry
Genetics and Biometrics
Introduction to Anatomy and
Physiology
Sociology

3rd

1st Professional Year

Comparative
Anatomy/Histology/Embryology
Animal Physiology
Pharmacology and Toxicology
Animal Nutrition and Dietetics
Animal Breeding

4th

2nd Professional Year

Comparative Pathology,
Histopathology and Clinical
Pathology
Microbiology (Bacteriology and
Virology)
Immunology
Parasitology and Entomology

5th

3rd Professional Year

Epizootiology and Animal Hygiene
Public Health and Food Hygiene
Environmental Science or Wild Life
Disease
Introduction to Clinical Studies
Livestock Production

6th

4th Professional Year

Animal Reproduction and Obstetrics
Artificial Insemination
Medicine
Surgery and X-Ray Radiation
The Veterinarian in Society

5) Number of Staff

The Government of Zambia has expressed its desire for the staffing of the School (under the new concept) as follows:

i) Number of staff

<u>Position</u>	<u>Number of staff</u>	<u>Position</u>	<u>Number of staff</u>
Dean	1	Senior technicians	10
Professors	4	Technicians	15
Assistant Professors	11	Secretaries	9
Lecturers	15	Administrative Officers	2
Chief Technicians	4	Miscellaneous	36
Pharmacist	1		
Radiologist	1		
TOTAL:			109

ii) Allocation of Principal Staff

<u>Department</u>	<u>Dean</u>	<u>Prof.</u>	<u>Asso.Prof.</u>	<u>Lect.</u>	<u>Chief</u>		<u>Total</u>
					<u>Tech.</u>		
Bio-Medical Science	(1)	1	3	4	1		10
Pathology, Microbiology, and Parasitology		1	2	3	1		7
Disease Control		1	3	4	1		9
Clinical Studies		1	3	4	1		9
TOTAL:	1	4	11	15	4		35

6) Building facilities

A preliminary sketch project on the School of Veterinary Medicine which also included the School of the Agricultural Sciences, incorporating the two schools into one complex, had been prepared by Erhard Lorenz Associates, Architects, one of the local architectural firms, before the dispatch of the mission.

The mission's proposal was for an alternative layout plan, and was put forward after consideration of the basic concept of the school and of the nature, relationship and functions of the departments, and also the relationship between the staff and students. This was agreed by the Zambian officials after some discussion. The details of the layout agreed are described later in this Chapter.

(2) Student hostel

The University of Zambia is the only university in this country, and therefore receives applications from students throughout the land. The country's secondary schools, however, are distributed in proportion to the sizes of the local populations that they serve. Only about 10% of the students at the University come from Lusaka and the rest come from various parts of Zambia and must live in hostels on the university campus. The University is thus a 90% residential university.

It is assumed the ratio of the students of the School of Veterinary Medicine from regions other than Lusaka will be in approximately the same ratio as in the above distribution. However, unlike cities with long-established universities, there is in Lusaka no system of approved residences or hostels for university students to find lodgings during the academic year. In fact, apart from the hotels, there is nowhere at all available for the accommodation of non-residents of Lusaka. In view of this situation, it is likely that these students will find -- to say the least -- great difficulty in obtaining accommodation, except in facilities that are provided for them by the University. Moreover, the existing hostels in the University are already fully occupied and have no reserve space (capacity: 2,700). Consequently, a hostel for the students of the School of Veterinary Medicine must without fail be established.

Previous major developments at the University that have been supported by agencies outside Zambia have been accompanied by a provision for the required hostel accommodation, notably the Schools of Mines, Engineering (Phase II) and Education (Phase II). In each case, both academic and hostel facilities -- and, at the School of Mines, staff housing as well -- were provided by the supporting agency. The Government of Zambia, in consequence of all of the foregoing, strongly requested the mission to include the hostel in the Grant Aid coverage for the School of Veterinary Medicine. The study mission explained to the Government of Zambia on the difficulties of furnishing such facilities under the Grant Aid System. However, since it would be extremely difficult for the Government of Zambia to bear the cost of construction of such buildings, the study mission agreed to include such a student hostel in the basic design, respecting the request of the Government of Zambia.

As for catering facilities, no extra provision will be required for the School of Veterinary Medicine. The ample facilities of the University's dining hall and kitchen can accommodate several hundred more students than they do at present.



THE UNIVERSITY OF ZAMBIA

**SCHOOL OF VETERINARY MEDICINE
HANDBOOK
1983/84**

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OFFICERS OF THE UNIVERSITY

Chancellor	His Excellency Dr. Kenneth David Kaunda, Hon. LL.D. (Fordham, N.U.I., Sussex, York (U.K.), Zambia, Windsor, Compostela (Santiago), Morehouse and Huboldt - G.D.R.)
Chairman of Council (Actg.)	Mr. I.H. Muchangwe; B. Sc. (Rhodes), D.T.A. (University of West Indies), Dip. Agric. (Fort Hare).
Vice Chancellor	Dr. J.M. Nwanza; M.A. Econ. (Munster); Ph.D. (Cornell).
Deputy Vice Chancellor	Prof. B. Mweene, B.Sc. (Zambia) M.Sc., Ph.D. Birmingham.
University Secretary	Dr. V.G. Nyirenda; D.S.W. (Zambia); M.S.W. (Yashiva), Ph.D. (California-U.C.L.A.)
Financial Controller	Mr. M. Samutumwa; I.P.F.A.; M.B.I.M.
Chief Librarian (Acting)	Mr. D.O. Bampoe; B.A. (London); F.L.A.
University Architect	Mr. J.B. Baxi; Dip. Arch. (Bom.)
<u>LUSAKA CAMPUS</u>	
Principal	Prof. K. Mwauluka, B.Sc. (London); Ph. D. (Cantebury)
Deputy Principal	
Registrar	Mr. J.D. Zulu, B.A. (Zambia) Dip. Adult Ed. M.Ed. (Manchester)
Deputy Registrar	Mr. W.P. Sowa, B.A. (Zambia) M.A. (Leeds)
Librarian	Dr. H. Mwecalimba; B.A. (Zambia); M.S.L.S. (Syracuse); Grad. Cert. in Lib. Management; D.L.I.S. (California-U.C. Berkeley)
Dean of Students	Mr. R. Kapopo; D.S.W.; B.S.W. (Zambia); Dip. Urban Soc. Dev. (Inst. Soc. Studies - The Hague)

NDOLA CAMPUS

Principal	Prof. M.E. Kashoki; B.A. (Colgate); M.A. (Michigan State).
Deputy Principal	
Registrar	Mr. C.M. Muyangana; B.A. (N. Carolina); M.A. (Columbia).
Deputy Registrar	
Librarian	Dr. M.C. Lundu; B.A. (Zambia); M.S.L.S. (Case Western Reserve); Ph.D. (Sherfield)
Dean of Students	Mr. G.L. Chokani, B.A. (Zambia)

DEANS OF SCHOOLS AT LUSAKA CAMPUS

Agricultural Sciences	Dr. Ochetim Silvest, B.Sc. Agric. (Makerere). Ph.D. (Univ. Sack Canada)
Education	Dr. P.M. Haamujompa; B.A. with Ed. (Zambia); M.S.Ed. (Indiana); M.Ed., Ed.D. (Columbia)
Engineering	Dr. F.D. Yamba; M.Sc. (Moscow); Ph.D. (Leeds)
Humanities & Social Sciences	Dr. C.J.J. Mpaisha; B.A. (Zambia) M.P.A.; Ph.D. (Pittsburg)
Law	Dr. J.L. Kanganja; LL.B. LL.M. (Zambia) Ph.D. (London); A.H.Z.
Medicine	Prof. Chintu; M.D. (Toronto) F.R.C.P. (Canada); Dip. American Board of Paediatrics (U.S.A.)
Mines	Dr. E.H. Jere, B.Sc. (Rutgers); M.Sc., Ph.D. (Lehigh)
Natural Sciences	Dr. A.A. Siwela, B.Sc. (Zambia), M.Sc., (London) Ph.D., (Western Ontario)
Veterinary Medicine	Coordinator, Dr. M.N. Shandomo B.V.Sc. (East Africa) Dr. Med. Vet. (Vienna), M.Sc. (Edinburgh)

DIRECTORS OF CENTRES, RESEARCH BUREAUX AND INSTITUTES

Centre for Arts	Dr. M.I. Mapoma; M.A.; Ph. D. (California)
Centre for Continuing Education	Dr. J.E. Nyirenda Director) B.Sc. (Zambia), M.A. (Syracuse), Phd (Syracuse)
Educational Research Bureau	Prof. L.P. Tembo, B.A. (Hon) M.A. (Otago N.Y.) Dip. T.E.S.L. (Wellington, N.A.) Ed. D. (Columbia)
Institute for African Studies	Dr. S.P.C. Moyo B.A. Ed. (Zambia) M.A.; Ph.D. Cert. (Wisconsin U.S.A.)
Institute of Human Relations	Dr. N.L. Lifanu; D.S.W. (Zambia) M.S.W. (Washington); Ph.D. (Bradais)
Kafue Basin Research Project	Professor G.W. Howard; B.Sc.M. Agric. Sc., Ph.D. (Adel).
Rural Development Studies Bureau	Dr. J.T. Milimo; S.t.L. (Gregorian); Dip. Soc. Anthr.; B. Litt., D. Phil. (Oxon)

STAFF OF THE SCHOOL OF VETERINARY MEDICINE

Coordinator	Dr. M.N. Shandomo B.V.Sc. (East Africa), Dr. Med. Vet. (Vienna), M.Sc. (Edinburgh).
Secretary to the Coordinator:	Mrs. E.K. Nkhazi

ACADEMIC STAFF:

Dr. M.N. Shandomo B.V. Sc. (East Africa), Dr. Med. Vet. (Vienna), M.Sc. (Edinburgh)	Lecturer, Animal Physiology and Anatomy and Veterinary Embryology.
Dr. T.O.M. Koomson D.V.M. (Ahmadu Bello), M.Sc. (Ahmadu Bello) Grad. Dip. in Agriculture (New South Wales)	Lecturer, Vet. Medicine

TECHNICAL STAFF

Mr. R.V.J. Griffin City and Guilds, ONC HNC, MIAT, (BRISTOL POLYTECHNIC)	Chief Technician Bio-Medical Sciences
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THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

INTRODUCTION

The School of Veterinary Medicine has been established this 1983/84 academic year within the School of Agricultural Sciences, Great East Road Campus, Lusaka, as there are no facilities for the School yet. It is hoped that such facilities will be available by 1986. Before than facilities in the Schools of Agricultural and Natural Sciences will be used.

The undergraduate programmes will run for a period of six years. The first year is done at the School of Natural Sciences and only on successful completion of the courses there will a student be allowed to apply to join the School in second year. At the end of the sixth year all successful students will be awarded the degree of Bachelor of Veterinary Medicine (B. Vet. Med.) of the University of Zambia.

Being the first year the School has operated, only 14 second year students have been admitted.

As the school progresses there will be four departments of Bio-medical Science; Pathology, Microbiology and Parasitology; Disease Control; and Clinical Studies.

Given in this handbook is the information concerning the new opened School. Some information on the other sections of the University have also been included.

BOARD OF STUDIES

The Interim Board of Studies is composed of:-

- (a) The Co-ordinator for the School of Veterinary Medicine as Chairman.
- (b) The Dean, School of Agricultural Sciences
- (c) The Dean, School of Natural Sciences
- (d) The Dean, School of Medicine
- (e) The Director of Veterinary and Tsetse Control Services, Ministry of Agriculture and Water Development
- (f) Dr. H.F. Schels, Team Leader FAO/UNDP Animal Disease Control Project.
- (g) Dr. C.O. Oparaócha, Veterinary Surgeon in private practice.

OBJECTIVES

To produce internationally recognised general veterinarians to be engaged 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,
- (c) basic and applied research in the field of Veterinary Medicine and Surgery,
- (d) teaching and academic curriculae development in Veterinary Medicine and Surgery,
- (e) various livestock and poultry products industries.

REQUIREMENTS AND REGULATIONS

Entry Requirements

A clear pass in all courses of the first year School of Natural Sciences, University of Zambia or equivalent qualifications from other Universities or schools. The student will have opted to study veterinary medicine.

Due to limited places, there is fair amount of competition for admission which may demand that selection for a place will depend on the attainment of higher level of performance.

Examinations

Written, practical and Oral University 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 as to the requirements of such schools.

In any case the University examinations will account for 60 per cent of the total marks while the 40 per cent will be from continuous assessment. A student will be regarded to have passed a course if he/she obtains a minimum of 50 per cent in both the University examination and the continuous assessment.

Students who will fail to attain the minimum passing requirements in any course will be subjected to a supplementary examination. Further failure in any course will lead to the students' repeating all courses. Such students will only be allowed to proceed to the next year if they attain a minimum of 50 per cent in both the University examinations and the continuous assessment for the courses they had repeated otherwise they will be excluded from the School.

Qualifications

The degree of Bachelor of Veterinary Medicine will be conferred on those that will have fulfilled the requirements of the sixth year examinations after approval by the Senate of the University of Zambia.

Vacation Practicals

Before a student is allowed to qualify at the 2nd of the sixth year he/she will have satisfactorily undertaken vacation practicals as stipulated below:-

- (a) VM 300 Farm practicals involving staying and working on a selected farm for 10 weeks during the vacation after the 3rd year.
- (b) VM 400 Laboratory practicals at either the Government Central Veterinary Research Institute or the School of Veterinary Medicine for 10 weeks during the vacation after the 4th year.
- (c) VM 500 Veterinary Clinical practicals in government or private veterinary practice and abattoirs within Zambia for 10 weeks during the vacation after the 5th year.

THE CURRICULUM

<u>YEAR</u>	<u>COURSE NO.</u>	<u>SUBJECT MATTER</u>	<u>UNIT</u>	
1 (Pre-Veterinary) I	BZ 110	Biology	1	
	C 110	Chemistry	1	
	M 110	Mathematics	1	
	P 110	Physica	1	
2 (Pre-Veterinary) II	VM 210 (AGA 210)	Animal Anatomy and Physiology	1	
	VM 211	Vetrinary Embryology	1/2	
	VM 220 (DA 210)	Organic Chemistry and Biochemistry	1	
	VM 221 (AGS 311)	Probability and Statistical Analysis	1/2	
	VM 222 (AGA 332)	Animal Genetics and Breeding	1/2	
	VM 232 (AGC 342)	Forage crops, Pasture and Range Management	1/2	
	VM 242 (BZ 310)	Ecology and Evolution	1/2	
	3 (Pre-Clinical) I	VM 310	Veterinary Anatomy	1
		VM 312	Veterinary Histology	1/2
		VM 320	Veterinary Physiology	1
VM 321		Veterinary Biochemistry	1/2	
VM 330		Basic and Applied Animal Nutrition	1	
3 (Pre-Clinical) II	VM 410	Veterinary Pathology	1	
	VM 420	Veterinary Pharmacology	1	
	VM 430	Veterinary Microbiology and Immunology	1	
	VM 440	Veterinary Parasitology	1	
	VM 450 (ASA 450)	Animal Production	1	

<u>YEAR</u>	<u>COURSE NO.</u>	<u>SUBJECT MATTER</u>	<u>UNIT</u>	
5 (Clinical I)	VM 510	Veterinary Medicine I	1	
	VM 511	Veterinary Epidemiology and Economics	1/2	
	VM 512	Veterinary Clinical Pathology	1/2	
	VM 515	Veterinary Public Health and Food Hygiene	1/2	
	VM 520	Veterinary Surgery I	1	
	VM 521	Veterinary Radiology	1/2	
	VM 531 (ABE 541)	Rural Sociology	1/2	
	VM 532	Veterinary Reproduction and Obstetrics I	1/2	
	6 (Clinical II)	VM 610	Veterinary Medicine II	1
		VM 611	Veterinary Toxicology and Therapeutics	1/2
VM 612		Morbid Anatomy	1/2	
VM 620		Veterinary Surgery II	1	
VM 631		Veterinary Reproduction and Obstetrics	1/2	
VM 632 (AGE 565)		Extension Administration	1/2	
VM 642		Veterinary Jurisprudence	1/2	

COURSE DESCRIPTIONS

FIRST YEAR

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
BZ 110	1	INTRODUCTORY BIOLOGY An introduction to the most important areas of Biology. Basic cell biology, animal structure, function and physiology. Plant structure, functions and physiology. Genetics, Ecology, Evolution and diversity of Animals and plants.
C 110	1	INTRODUCTORY CHEMISTRY An introductory course in Chemistry covering such topics as stoichiometry, atomic and molecular structure, the periodic table, chemical reactions, equilibrium and simple organic compounds.
M 110	1	INTRODUCTION TO MATHEMATICS Preliminary algebra, introductory set theory, elementary functions, analytical geometry and vector analysis, matrices and determinants, calculus.
P 110	1	INTRODUCTORY PHYSICS Basic principles of matter structure, density and mechanical properties. Geometrical optics - reflection, refraction, mirrors, lenses and simple instruments.

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		Mechanics - Kinematics, dynamics, circular, statics and dynamics of motion, the rigid body, simple harmonic motion, vibrations and waves.
		Heat - thermometry, simple kinetic theory, specific heat and elements of thermodynamics.
		Electricity and magnetism - electrostatics, D.C. circuits, the magnetic fields, A.C. circuits.
		Modern physics - the atom and radio activity.
		Associated laboratory course.
<u>SECOND YEAR</u> VM 210	1	ANIMAL PHYSIOLOGY AND ANATOMY Domestic animals of agricultural importance in Zambia, comparative study of topographic and functional anatomy, cell structure, types of body tissues and general animal body plan. Skeletal, muscular, cutaneous, circulatory, nervous, respiratory, urinary, digestive and reproductive (including lactation) systems. endocrinology, temperature regulation, adaptation, growth and development.
VM 211	1/2	VETERINARY EMBRYOLOGY Introduction, primary organs of reproduction and gametogenesis, fertilization, cleavage and formation of morula and blastula, gastrulation and formation of the germ layers.

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		Establishment of the embryonic membranes and body structures, development of organ systems in avian and mammalian embryos.
VM 220	1	<p>ORGANIC CHEMISTRY AND BIOCHEMISTRY</p> <p>Broad coverage of organic chemistry whose treatment is factual in nature.</p> <p>Bonding in organic compounds, isomerism, reaction of organic functional groups and their derivatives, synthetic transformations and compounds of biological importance.</p> <p>The major constituents of the cell, their chemical structure, function and analysis including carbohydrates, lipids, proteins and nucleic acids.</p> <p>Biochemical energetics and properties of enzymes.</p>
VM 221	1/2	<p>PROBABILITY AND STATISTICAL ANALYSIS</p> <p>Statistics in agricultural research, sample and population, null hypothesis, statistical inference - confidence limits and test significance.</p> <p>Steps in experimentation, interpretation of results and writing of reports and scientific papers.</p> <p>Normal distribution, definitions and statistical notations, measures of central tendency - mean, median, mode, measures of dispersion, variance, standard deviation, range, coefficient of variability and varieties in two-way table.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<p>The analysis of variance, chi-square test and its application.</p> <p>The principles of experimental designs and plot techniques - completely randomised design and the latin square design. Factorial experiments, split-plot, split - split-plot and split-block designs.</p> <p>Missing plot technique, comparison of missing treatment means - LSD and Duncan's Multiple range test.</p> <p>Measures of relationship - correlation, regression and converiance analysis.</p> <p>Precision and accuracy in experiments.</p>
VM 222	1/2	<p>ANIMAL GENETICS AND BREEDING</p> <p>Introduction of basic process of inheritance, basic Mendelian genetics - segregation, linkage, mutation and independent assortment; Multiple alleles, sex linkage; sex determination, elements of population genetics.</p> <p>quantitative genetics - variation, normal distribution, correlation, regression, heritability, repectability.</p> <p>Selection - response to selection, types of selection, selection methods.</p> <p>Breeding systems - inbreeding, outbreeding, crossbreeding, coefficient of breeding, relationship, heterosis, species - hybridization.</p> <p>Artificial Insemination in livestock genetic improvements.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
VM 232	1/2	<p>FORAGE CROPS, PASTURE AND RANGE MANAGEMENT</p> <p>Introduction to forage crops, historical review of evolution of grass and legumes. Physiology of grasses and legumes, establishment of pasture and legumes; Pasture management and carbohydrate reserves, antiquality factors, forage conservation and wet storage systems, seed production.</p> <p>Forage quality and utilisation, grazing behaviour.</p>
VM 242	1/2	<p>ECOLOGY AND EVOLUTION</p> <p>Scope, meaning and importance of ecology, the ecosystem concept, biotic communities and ecological niches.</p> <p>Trophic structures: Food webs, trophic levels and ecosystem pyramids; Biogeochemical cycles, energy flow and biological production and productivity of communities.</p> <p>Environment, habitat, and habitat factors; Periodicity, biological rhythms, seasonality and fire in tropical ecosystems; plant and animal adaptations.</p> <p>Ecosystem development and evolution: Succession, climax, diversity and stability of communities.</p> <p>Population ecology: characteristics, dynamics and intersections of populations.</p> <p>Association of living organisms: Commensalism, parasitism and mutualism.</p> <p>Tropical ecosystems: Aquatic, grassland, woodland/forest, soil/litter and arid ecosystems.</p> <p>Human ecology in the tropics: Ecosystems, resource and environment management.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
<u>THIRD YEAR</u>		
VM 310	1	<p>VETERINARY ANATOMY</p> <p>General introduction to Veterinary Anatomy. Osteology, Syndesmology, Hyology; Digestive, Respiratory, Urogenital, Blood circulatory, Lymphatic and Nervous systems, Endocrinology, sense organs, and common intergument.</p>
VM 312	1/2	<p>VETERINARY HISTOLOGY</p> <p>General introduction, Cytology, the epithelium, connective and supportive tissues, Blood and Bone marrow, Muscular and nervous tissues; cardiovascular, lymphatic, respiratory, digestive, urogenital, endocrine and nervous systems; the Eye, ear and the intergument.</p>
VM 320	1	<p>VETERINARY PHYSIOLOGY</p> <p>General introduction, cellular biology. Nerve and muscle physiology: neuron, muscle, spinal cord, brain stem, cerebral cortex basal ganglio cerebellum, the autonomic nervous system, sensory physiology and limbic system. Blood, lymph and cerebral fluid. Cardiac physiology: fluid compartments, electrolytes and renal physiology. Respiration, gastro-intestinal physiology. metabolism, the endocrine and reproductive systems, lactation. The physiology of skin, bone and cartilage.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
VM 321	1/2	<p>VETERINARY BIOCHEMISTRY</p> <p>Introduction, the atom, hydrogen ion concentration, carbohydrates, lipids, steroids, amino acids, peptides, proteins, nucleotides, nucleic acids, haem and bile pigments, enzymes; digestion and metabolism of carbohydrates, lipids and amino acids; the common terminal pathway of metabolism - detoxication and excretion; Blood, nucleic acid synthesis, transcription, protein synthesis, translation, hormones, energy requirements and food intake; ruman biochemistry.</p>
VM 330	1	<p>BASIC AND APPLIED ANIMAL NUTRITION</p> <p>Chemical constituents of plants and animal body, properties and role of water in nutrition, digestion; absorption and metabolism of protein, carbohydrates, fat and minerals in ruminants and non-ruminants; methods of estimating feed value - chemical analysis, gross energy, digestion coefficients, total digestible nutrients, digestible energy, net energy, starch equivalent.</p> <p>Nutrient sources - protein, energy, minerals and vitamins for farm animals.</p> <p>Principles and practical computation of rations for livestock and poultry; specific aspects of the nutrition of livestock and poultry, feed-lot nutrition.</p> <p>Nutritional diseases, emphasis on metabolic pathway disorders and food toxins.</p> <p>Nutrition of pet animals.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
<u>FOURTH YEAR</u> VM 410	1	<p>VETERINARY PATHOLOGY</p> <p>Introduction, Aetiology: intrinsic and extrinsic causes of disease, basic and cellular alterations.</p> <p>Disturbances in development, circulation, nutrition and growth of cells and cell metabolism, death and defenses of the body against injury.</p> <p>Neoplasms and special pathology of the musculo-skeletal, digestive, respiratory, uro-genital, cardiovascular, lymphatic, nervous and endocrine systems and the inter-gument.</p> <p>The histopathology of all the lesions.</p>
VM 420	1	<p>VETERINARY PHARMACOLOGY</p> <p>Introduction; drugs acting on the digestive tract, central and autonomic nervous systems, blood and heart; drugs anaesthetizing peripheral nerves, influencing tissue metabolism and with special lethal effects.</p> <p>The endocrine and reproductive systems.</p> <p>Chemotherapy: Antiseptics and disinfectants, the sulphonamides, penicillin, the tetracyclines, chloramphenicol and other antibacterial substances, clinical chemotherapy, internal and external antiparasitic drugs.</p>
VM 430	1	<p>VETERINARY MICROBIOLOGY AND IMMUNOLOGY</p> <p>Historical background, morphology and colony characteristics, physiology of micro-organisms.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		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.
		Classification and characteristics of pathogenic bacteria, yeasts and moulds.
		The viruses: general characteristics and methods used in their study, classification and characteristic of each of the important virus groups..
VM 440	1	VETERINARY PARASITOLOGY
		Introduction; helminthology: trematodes, cestodes and nematodes.
		Entomology: Arthropod parasites.
		Protozoology: biology of important protozoal parasites of domestic animals.
		Veterinary clinical parasitology: faecal collection and examination, identification of blood parasites, mites of the skin and internal organs, helminths and arthropods.
VM 450	1	ANIMAL PRODUCTION
		Beef production: outline of the beef cattle industry in Zambia, breeds of beef cattle in Zambia, trait of economic importance, record keeping and performance programmes, selection of replacement breeding stock, management systems of herd bulls, cow herd, breeding heifers and calves.

Course No.

Unit

Description

Dairy cattle production:

Outline of the dairy industry in Zambia, breeds of dairy cattle in Zambia, traits of economic importance, record keeping and performance programmes, selection of replacement breeding stock, management of the dairy herd-bulls, cows, breeding heifers and calves; milking practices and systems, processing of milk.

Goat, sheep and rabbit production:

status and importance of these farm animals in animal agriculture in Zambia, potential for increased productivity, origin, breeds, systems of production, management of breeding stock, care of young growing and slaughter animals, meat, wool and hair.

Pig production:

Importance of pig farming in Zambia, special problems of pig farming in Zambia, breeds, records management of the boar, gilt and sow, sow and litter, weaners, growers and finishers, housing and equipment, marketing.

Poultry production:

History, development and structure of the poultry industry in Zambia, breeds, traits of importance in egg and broiler production, principles of poultry production with reference to egg and table meat production, housing, poultry plant operation, incubation and hatchery management, poultry products and processing.

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<u>Fish farming and wildlife production:</u>
		Wildlife preservation, wildlife meat production methods, management of wildlife ranches and farms, wildlife carcasses and meat.
<u>FIFTH YEAR</u>		
VM 510	1	VETERINARY MEDICINE I
		<u>General medicine:</u>
		Clinical examinations, general systemic states, diseases of the liver, cardiovascular system, the blood and blood forming organs, the respiratory, urinary, nervous and musculo-skeletal systems; the skin, matabolic and nutritional disorders!
		<u>Special medicine:</u>
		Mastitis; bacterial, fungal, and viral diseases; diseases caused by rickettsiae, protozoa, helminths and arthropod parasites; miscellaneous diseases of importance; diseases of fish and wildlife.
		<u>Preventive medicine:</u>
		Livestock movements, quarantine procedures, vaccinations and disease prophylaxis, management systems and general methods of disease control.
VM 511	1/2	VETERINARY EPIDEMIOLOGY AND ECONOMICS
		Introduction to epidemiology, interactions between the animal host, infective agents and the environment, accessory factors, endogenous and exogenous infections, animal infection.

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<p>Transmission, survival and spread of animal pathogens, routes of infection; sporadic, endemic and epidemic diseases; opportunist pathogens, vector species, reservoirs and carriers in Animal disease; interspecies transmission.</p> <p>Data Collection and interpretations, methods of disease diagnosis.</p> <p>General introduction to economic theories and principles, macro-economics concepts - theory of demand and supply and consumer behaviour, elasticity of demand and supply, theory of the firm under perfect competition and monopoly, concepts of value, price and factors of production and demand for factors of production along with their efficient allocation.</p> <p>Economics of disease control and animal production systems.</p>
VM 512	1/2	<p>VETERINARY CLINICAL PATHOLOGY</p> <p><u>Cytology:</u></p> <p>General cytology, trasudates and exudates, vaginal smears.</p> <p><u>Haematology:</u></p> <p>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, erythrocyte and its disorders, leukocytes and its disorders, thrombocytopenia and</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<p>haemostatic disorders, interpretation of haematologic findings.</p> <p><u>Clinical chemistry:</u></p> <p>Kidney function test, urinalysis, clinical enzymology, liver function tests, pancreatic function tests, cardio-vascular disease tests, calcium, phosphorus and metabolic borne disorders, cerebro-spinal fluid examination, serum biochemistry abnormalities, thyroid function.</p> <p><u>Dermatology:</u></p> <p>Mycotic and parasitic skin lesions.</p>
VM 513	1/2	<p>VETERINARY PUBLIC HEALTH AND FOOD HYGIENE</p> <p>Introduction, food animals, food uses of the organs and tissues, the muscular and lymphatic systems, general pathology of food animals and affections of specific parts of the body systems, bacterial and parasitic diseases of the food animals, zoonosis.</p> <p>The general construction and layout of abattoirs; transport, treatment and antemortem inspections of slaughter animals; methods of slaughter and factors affecting the carcasse quality.</p> <p>Postmortem inspection, bacteriology of meat, treatment and disposal of by-products and fats, the disposal of condemned meat, offals and other foodstuff.</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		The preservation of food and the administration of the Public Health Act (Cap 535) of the Laws of Zambia. Milk composition, the hazards of milk borne diseases, milk hygiene, pasteurisation.
VM 520	1	<p>VETERINARY SURGERY I</p> <p>Principles of surgery, sterile techniques, fluid therapy, and shock, Burns, wounds and other skin lesions.</p> <p><u>Veterinary anaesthesia:</u></p> <p>Introduction and general considerations, local, regional, spinal, epidural and lumbaranalgesia; premedication and general anaesthesia.</p> <p>Surgery of the digestive system, glands of the head and neck, abdominal incisions, hernio, thorax, heart and great vessels, urogenital system, liver, spleen, pancreas, tendons, muscles and fascia, fractures and joints, neoplasms, amputations, vertebral column and spinal cord.</p>
VM 521	1/2	<p>VETERINARY RADIOLOGY</p> <p>History, radiation safety, the X-ray machine and accessory equipment, density and contrast, radiographic positioning, development, and interpretation, radio-therapy.</p>
VM 531	1/2	<p>RURAL SOCIOLOGY</p> <p>Rural sociology as a discipline, its historical development and relevance to agriculture development, brief</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<p>introduction to the socio-cultural foundation of African farming systems.</p> <p><u>Basic concepts of social life:</u></p> <p>Social groupings, role, norms, values, status, social stratification, social systems and rural institutions.</p> <p><u>Population dynamics:</u></p> <p>Birth and mortality rates, population growth, migration and rural-urban drift, settlement programmes, family planning.</p> <p><u>Social change:</u> theories, processes and types, peasants and peasantry diffusion and adoption processes for agricultural invasions.</p> <p>The attitudes of traditional live-stock owners to animal production and veterinary services, traditional livestock production systems.</p>
VM 562	1/2	<p>VETERINARY REPRODUCTION AND OBSTETRICS. I</p> <p>Revision of the Anatomy of the reproductive system and associated structures, the physiology of reproduction, embryo development, foetal membranes and the gestation period, development anomalies and teratology, physiological parturition and the postpartum period, care of the newborn, the pathology of the gestation period and infertility in male and female animals.</p> <p>The types, causes, diagnosis and treatment of dystocia, procedures before handling dystocia and obstetrical operations. Surgery of the</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		female and male genital organs. The physiology and pathology of lactation, surgical operations of the mammary glands.
<u>SIXTH YEAR</u>		
VM 610	1	VETERINARY MEDICINE II Continuation of Veterinary medicine I with more practical orientation and ambulatory services.
VM 611	1/2	VETERINARY TOXICOLOGY AND THERAPEUTICS <u>Toxicology:</u> introduction, mineral or inorganic substances, organic compounds, drugs, pesticides, poisonous plants, mycotoxins, venoms and stings, radioactive materials, plant teratogenic effects, infertility and abortions; carcinogenesis. <u>Therapeutics:</u> General review of pharmacology of commonly used groups of drugs, drug compatibility, oral, parental and topical drug administration, fluid therapy, transfusions; oxygen, radiation physio-therapy.
VM 612	1/2	MORBIDY ANATOMY Systematic Pathological Examinations of Animals in view to reach a tentative diagnosis.
VM 620	1	VETERINARY SURGERY II Continuation of the Veterinary Surgery I with more practical orientation and ambulatory services.

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		<p>VETERINARY REPRODUCTION AND OBSTETRICS II</p> <p>Continuation of veterinary reproduction and obstetrics I with more practical orientation and ambulatory services.</p> <p><u>Artificial insemination:</u></p> <p>historical background, advantages and disadvantages, revision of the anatomy of the male and female genital organs; semen production, composition, characteristics, collection, evaluation, processing and conservation; the art of artificial insemination, conception rates, non-return rates and factors affecting the reproductive efficiency; records, oestrous synchronisation and embryo transfer in livestock improvement programmes management and selection of artificial insemination animals, application of artificial insemination in livestock improvement programmes, the organisation of national artificial insemination services.</p>
VM 632	1/2	<p>EXTENSION ADMINISTRATION</p> <p>Administration and organisation of extension.</p> <p><u>Concepts:</u> principles and theories, planning, organizing, decision-making, direction.</p> <p>Coordination, delegation, authority/ponder responsibility, span of control, supervision, staffing and staff development, principles of morale and</p>

<u>Course No.</u>	<u>Unit</u>	<u>Description</u>
		motivation, theories of X and Y modern systems of personnel management.
VM 642	1/2	<p>VETERINARY JURISPRUDENCE</p> <p>Introduction, relationship of veterinarian to the public, organisation of veterinary services in tropical countries.</p> <p>The administration of the Fencing Act (CAP 290) Brands Act (CAP 377), Public Pounds Act (CAP 378), Prevention of Cruelty to Animals Act (CAP 379), Export of Pigs Act (CAP 380), Control of Dogs Act (CAP 381) Cattle Cleansing Act (CAP 382) Tsetse Control Act (CAP 383), Cattle Slaughter Act (CAP 384), Pig Industry Act (CAP 385), Cold Storage Board Act (CAP 386), Stock Diseases Act (CAP 387), Public Health Act (CAP 535), Pharmacy and Poisons Act (CAP 536) Penicillin Act (CAP 538)</p> <p>Therapeutic Substances Act (CAP 550)</p> <p>Veterinary Surgeons Act</p>

LIST OF BOOKS

SECOND YEAR

- VM 210 (a) Frandson, R.Z.: Anatomy and Physiology of Farm Animals (Lee & Fabiger)
- (b) Hafez, E.S.E.: Reproduction in Farm Animals.
- (c) Schmidt, G.H. Biology of Lactation
- VM 211 Pattern, B.M. and Carlson, B.M.: Foundations of Embryology (McGraw-Hill)
- VM 220 Refer to the School of Natural Sciences Handbook
- VM 221 (a) Cochran, W.G. & Cox, G.M. 1950: 2nd Edition "Experimental Design John Willey & Sons Inc.
- (b) LeClerc, Leonard & Clark. "Field Plot-Technique" Burghes Publishing Co.
- VM 222 Johansson, I., and Rendell, J.: Genetics and Animal Breeding (Oliver & Boyd)
- VM 232 Refer to School of Agricultural Sciences Handbook
- VM 242 Refer to School of Natural Sciences Handbook

THE UNIVERSITY OF ZAMBIA

SESSIONAL DATES

1983/84

MONDAY	10th October	Registration & Orientation of 1st Year Students
FRIDAY	14th October	Registration of Returning Students
MONDAY	17th October	Classes Resume
MONDAY	7th November	Late Registration
FRIDAY	23rd December	Last Classes of Term
MONDAY	26th December	Residential School Begins
SATURDAY	7th January	Residential School Ends
<u>TERM II</u>		
SUNDAY	8th January	Students Return
MONDAY	9th January	Classes Resume
FRIDAY	9th March	End of Classes
<u>TERM III</u>		
SUNDAY	25th March	Students Return
MONDAY	26th March	Classes Resume
FRIDAY	25th May	Last Classes of Term
MONDAY	11th June	Examination Begin
FRIDAY	29th June	End of Examinations
SATURDAY	30th June	Holidays Begin
MONDAY	20th August	Publications of Results
MONDAY	10th September	Deferred/Supplementary Exams.
<u>TERM I - 1984/85</u>		
MONDAY	1st October	Registration & Orientation of 1st Year Students
FRIDAY	5th October	Registration of Returning Students
MONDAY	8th October	Classes Resume

JICA