

AGENDA FOR SCHOOL MEETINGS

1. Review of Progress in the development of the School of Veterinary Medicine up to September, 1991
 - 1.1 1990 Annual Report
 - 1.2 Staffing
 - 1.3 Student enrolment and output figures
 - 1.4 Graduates (1990) and their destination
 - 1.5 General expenditure (1985 - 1990)
 - 1.6 Staff training
 - 1.7 Research and Seminars
 - 1.8 UNZA VETERINARIAN
2. Overall evaluation of the ongoing extension period of the Phase-I project.
- 2.1
3. Phase-II development project
 - 3.1 Official request of technical cooperation and grant aid
 - 3.2 Postgraduate programmes in the School of Medicine
 - 3.3 Programme for the degree of Master of Veterinary Medicine
4. Exchange of any other major issues that relate to JICA technical cooperation
5. Any Other Business.

THE UNIVERSITY OF ZAMBIA
SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE
1990 ANNUAL REPORT

Dean: Prof. Cheryl E.A. Lovelace B.Sc.Ph.D. (Acting)

Assistant Dean (UG) Dr. G.S. Percy B.Sc.Agric. B.V.Sc. & A.H. M.V.Sc.

Assistant Dean (PG) Dr. T.R. Ayliffe B.Sc. B.V.M. Ph.D M.R.C.V.S.

The School is pleased to report that its third group of graduates completed in 1990 with seventeen students obtaining their Bachelor's Degree in Veterinary Medicine. The intake of students is adequate with over a hundred students now in the School. It is felt that the undergraduate programme is now running successfully, with continuous improvement taking place. Some course rearrangement took place in 1990 in the clinical years in order to emphasise Preventive Medicine, and in the preclinical years, Veterinary Biochemistry was extended to a full course. The topics of animal handling and animal welfare were introduced into the second year programme.

The course programme for the Masters degree in Veterinary Medicine was approved by Senate in May 1990. The course is in Diagnostic Veterinary Medicine and consists of four courses:

- Diagnostic Pathology
- Clinical Microbiology
- Clinical Parasitology
- Scientific Methodology

The School is now well recognised within the SADCC region with staff being asked to be External Examiners in Tanzania and Zimbabwe. Several of our staff have been with the School from the beginning giving some continuity, however contract staff changes still occur frequently. The School now has eight permanent staff including two out on study leave for their Ph.Ds and one who returned successfully with his Ph.D. from Japan. Two Staff Development Fellows returned from U.K. after successfully completing their Masters programmes, and joined the staff as Lecturers. Six other Staff Development Fellows are in training, two recruited in 1990.

The School was sad to bid farewell to Dr. Kevin Stafford who had been an active Head of Clinical Studies and successful large animal clinician,

The School is also benefitting from the University support of staff training. One Lecturer is continuing doing his Ph.D. in Britain and one technician returned successfully after a two year certificate programme at Zambia Institute of Animal Health. One Staff Development Fellow continues her Ph.D. research at the International Laboratory for Research in Animal Diseases in Kenya, and she is registered for an UNZA degree.

British Council supported the attendance of Dr. I. Phiri at a Course in Recent Advances and Current Concepts in Tropical Veterinary Medicine, in Edinburgh. British Council also helps under the Link programme to supply small items urgently required for research or teaching.

JICA continued to provide a generous grant allowing Departments to purchase equipment and chemicals, to supplement the University allocation. The School now feels that it is fairly well equipped and can offer adequate facilities for research in some areas. The School is justifiably proud of maintaining its equipment and facilities, and this is assisted by its team from the Central Services Department headed by Mr. Benkele, the Chief Technician, and Mr. Kadono, the electronics engineer.

Research progress has continued to be good, with a total of 27 projects being accepted. A total of 19 papers were published by School staff, and conference presentations made. Technicians are actively involved in research. Some external funding was obtained including JICA, IAEA, MEDCO, but most research depended on the limited University funding.

Several staff, at their own initiative, visited research and teaching institutions overseas and attended conferences. Prof. Lovelace visited Kenya at the invitation of ILRAD, to familiarise herself with the work of our Ph.D.-student, and visited also IPR, JCIPE and KETRI research institutions. Dr. D. Kisauzi gave two papers at a Workshop on Assessment of Animal Agriculture in Sub-Saharan Africa, in Nairobi. Conference papers were presented at the International Conference on Wildlife Diseases in Germany, the 9th International Symposium on

The School did face some problems, including lack of office space and furniture, insufficient funds for student vacation practicals, lack of space for animal accommodation, and some problems in recruitment. Overall however the School made good progress in 1990.

Dr. D. Kisauzi attended a Workshop on "Assessment of Animal Agriculture in Sub-saharan Africa" in Nairobi, Kenya and presented two papers.

Prof. V. Ramkrishna presented a poster at the IXth International Symposium on Morphological Sciences in Nancy, France.

DEPARTMENT OF DISEASE CONTROL

Head: Prof. G. Salo D.V.M. Ph.D.

The Department teaches students in 5th and 6th Years in the areas of special and preventive medicine, infectious diseases, epidemiology and economics, public health, veterinary extension and jurisprudence and clinical pathology and it also runs the University Veterinary Diagnostic Laboratory.

The Department said farewell to Dr. J. Baer and Dr. A. Suzuki, a JOCV Member. However it gained several new members of staff: Dr. K.L. Samui in Epidemiology, Prof. T. Kaji in Virology, and Dr. N. Tsukihara, a JOCV Member, lecturer in Clinical Pathology. Two new technicians joined, however the Department lost the Chief Technician, Mr. W. Benkele who was permanently transferred to head Central Services Department.

Three JICA visiting Lecturers came, Prof. M. Shinagawa for Virology, Prof. A. Suzuki for Environmental Hygiene and Dr. K. Sugiyama for Poultry and Fish Diseases.

Dr. M. Ngoma returned successfully with an M.Sc. in Tropical Veterinary Medicine from the Centre of Tropical Veterinary Medicine, University of Edinburgh, and he was appointed Lecturer in Public Health. Dr A.S. Mweene, SDF, left for an M.Sc. course at the University of Surrey. Dr. M.S. Syakalina joined the Department in November as an SDF in protozoology.

Mr. W. Ulaya went for 10 months technical training at Obihiro University under the JICA Counterpart Training Scheme, and Mr. L. Mwanza went for 9 months training at Hokkaido University under the JOCV Counterpart training scheme.

Research continued to be active in the Department, with 10 projects proposed, 6 funded by the University. The areas of research are: epidemiology of bovine dermatophilus, survey of akabane disease, tuberculin testing, drug resistance of intestinal bacteria, traditional sour milk and metal levels in cattle serum.

The Department was involved in the following research during 1990:
Theileriosis in Southern Province, Mastitis in Dairy farms in Lusaka,
Chemotherapy of Transmissible Venereal tumours of dogs, and Epidemiology
of Caprine Brucellosis in Zambia.

A new paraffin incinerator, purchased by JICA, arrived in October to replace the previous diesel one, which had not been working for a year. Disposal of carcasses is always a serious problem for a Veterinary School.

It is to be noted that the junior staff which care for animals, both in Central Services and Clinical Studies, showed real dedication to duty by coming to work during all the difficult times experienced by the University in 1990. At no time have animals been left uncared for, and this is greatly appreciated by the School.

12. Osame S., Ichijo S., Ohta C., Watanabe T., Benkele W., and Goto H. (1990). Efficacy of Colostral Immunoglobulins for Therapeutic and Preventive treatments of Calf Diarrhoea. J. Vet.Med. Sci. 53 (1), 87-91.
13. Pandey G.S., Inoue N., Ohshima K., Okada K., Chihaya Y. and Fujimoto Y. (1990). Poxvirus Infection in Nile Crocodiles (Crocodylus niloticus). Research in Veterinary Science, 49, 171-176.
14. Samui K.L. and Hugh-Jones (1990). The Epidemiology of Bovine dermatophilosis in Zambia. Veterinary Research communication, 14, 267-278.
15. Samui K.L. and Hugh-Jones (1990). The financial and Production Impacts of Bovine dermatophilosis in Zambia. Veterinary Research Communication, 14, 357-365.
16. Sitima A. (1990). A student's view of Veterinary Education. Proceedings of the First Pan Commonwealth Veterinary Association Conference, Harare, Zimbabwe, pp82-84.
17. Stafford K.J., Mweene A.S., Baer J., and Pandey G., (1990). Tuberculosis in Kafue Lechwe (kobus leche Kafuensis). Proceedings of the 6th International Conference on Wildlife Disease, East Berlin, Germany; p58.
18. Stafford K.J. (1990). A gastric trichobezoar in a Sow. Bull. Anim.Hlth. Prod. Afr. 38, 205.
19. Tineari G.P. and Ramkrishna V. (1990). Histopathology of the Cochlear duct of the water buffalo (Bubalis bubalis). Indian J. Anim. Sci. 60, 1283-1289.

C. LIAISON

1. Iwate University, Japan.
2. Hokkaido University, Japan. Research collaboration.
3. National Institute of Animal Health, Japan. Research collaboration.
4. Veterinary School, Glasgow University, U.K. Research collaboration, and Professor P. Holmes is the co-ordinator for the British Council Link.
5. Rijks University, Ghent. Research collaboration through project with Clinical Studies.

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

UNIVERSITY ROLE IN DEVELOPMENT OF THE SCHOOL OF VETERINARY MEDICINE

Although the University has been under a difficult financial situation concurrent with the economic difficulties the country is facing, the School of Veterinary Medicine has continued to develop.

The University has responded to all the School's requests for academic and technical staff, and any problems the School has faced has been due to finding people with suitable veterinary background. It is the lack of suitable trained personnel in Zambia that prompted the setting up of the School originally, and with three years of graduates, the School has increased the number of Zambian Veterinarians by over 300%.

The School receives continuous water and electricity, and the University maintainance and the School workshop is able to deal with most routine maintainance problems.

The School buildings are still clean and the facilities are in excellent condition. The cleaners take pride in maintaining the School fit for any visitor.

The Veterinary Library is building up gradually, partly through University funding. The Veterinary Librarian is actively improving the services, and with the assistance of a computer, indexes may be used for literature surveys.

The recurrent budget of the School, though fairly tight, has allowed teaching activities to proceed. Fuel is available for student trips, and to collect teaching material. Research trips have however to be funded by Research Grant allowances. Student laboratories have proceeded well, and the ambulatory clinic sends two vehicles out three days a week. The Small Animal Clinic is very active, open every week day, with student teaching on three days a week. The University Community bring a large number of patients.

The University Authorities agreed to our request to employ three house surgeons to assist in the daily work load of the clinics, one in large animals, one in small animals and one in the post-mortem room. This has greatly assisted increasing the number of cases which can be dealt with and therefore observed by students.

The Staff Development programme of the University has been very active, and in the last five years Veterinary Medicine has been favoured in being awarded more fellowships than other Schools. The University covers all the costs of the Staff Development Fellows while at Unza. For many they are eventually awarded overseas scholarships, but the University

9月17日現在のスタッフ数

STAFFING IN THE SCHOOL OF VETERINARY MEDICINE SEPTEMBER 1991

<u>Dept.</u>	<u>Establishment</u>	<u>In Post</u>		<u>In Training</u>	
		Prof.	Lect.	SRF	SDF
Biomedical Sciences	9	2	(5)	1	3
Japanese		-	-		
Zambian		-	-		
Paraclinical Studies	8	2	(5)	1	2
Japanese		1	3		
Zambian		-	2		
Disease Control	8	2	(6)	1	2
Japanese		2	1		
Zambian		-	2		
Clinical Studies	11	1	(2)	1	1
Japanese		-	-		
Zambian			2		

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STAFFING - UNZA VET. SCHOOL (1984-1991)

Academic Year	1984/85		1985/86		1986/87		1987/88		1988/89		1989/90		1990/91	
	Est.	In post	Est.	In post	Est.	In post	Est.	Inpost	Est.	Inpost	Est.	In post	Est.	In post
1. Dean	1	1	1	1	1	1	1	1	1	1	1	1	1	-
2. Professors		6	3		7	3	4	2	1	1	4	-	4	-
3. Assoc. Professors	1						11	3	11	4	11	4	11	4
4. Lecturers	2	10	5	15	12	18	18	18	20	16	20	19	20	21
5. Teaching Assts.		-	2	-	3	-	-	6	-	10	14	14	8	8
6. Chief Techs.	1	5	1	5	1	5	2	5	4	5	5	5	5	5
7. Senior Techs.	1	9	1	9	5	9	5	9	5	9	5	5	9	6
8. Pharmacis:		1	-	1	-	1	1	1	1	1	1	2	2	2
9. Radiologist		1	-	1	-	1	1	1	-	-	-	-	-	-
10. Technicians	5	37	8	37	20	46	37	53	39	52	48	58	50	
11. Secretaries	3	9	6	9	3	9	8	9	9	9	9	9	9	9
12. Admin. Officers		2	1	2	1	2	2	2	2	2	2	2	2	2
13. Miscellaneous	1	3	1	19	17	19	15	25	20	25	20	25	25	21
TOTAL	15	84	29	106	66	126	101	137	112	153	128	154	128	128

30 Aug. 1990

N.B: (a) JMCA long or short term experts are not included in the schedule.
 (b) British Council and HEDCO short term (Visiting) personnel are excluded in the schedule.
 (c) Teaching Assistants include: House Surgeons, SDFs, and Japanese Volunteers up to 1990
 (d) Miscellaneous include: Drivers, Dupliator Operators, Messengers, Cleaners and Plotman/woman.
 (e) There is no adequate record for the year 1984/85
 (f) All Japanese Teaching Assistants were appointed lecturers during 1990/91 academic year.

BIDMEDICAL SCIENCES DEPARTMENT

SCHOOL OF VETERINARY MEDICINE

UNIVERSITY OF ZAMBIA

STAFF LIST, 25TH JULY 1991

NAME	POSITION	SUBJECT	STATUS
Dr. D.N. Kisauzi	Senior Lecturer	Physiology	Head
Prof. C.E.A Lovelace	Associate Professor	Biochemistry	Ag. Dean
Prof. V. Ramkrishna	Associate Professor	Histology	
Dr. T. Ayliffe	Senior Lecturer	Pharmacology	
Dr. S. Drozdowski	Senior Lecturer	Physiology	
Dr. K. Verstraelen	Lecturer	Embryology	
Dr. G. Muwanga	Lecturer	Anatomy	
Mr. K. Mizinga	Lecturer	Physiology	Study leave
Mrs Z. H. Mkhungulu	SDF	Biochemistry	
Dr. K. Choongo	SDF	Pharmacology	
Dr. Bishonga	SDF	Physiology	

NON-ACADEMIC

Mr. J. Daka	Chief Technician	Pharmacology	
Mr. P. Masebe	Technician I	Biochemistry	
Mr. B. Sakala	Sen. Technician	Physiology	
Mr. I. Nyirenda	Technician I	Histology	
Mr. G. Sibazwe	Technician II	Biochemistry	
Mr. L. Sakala	Assist. Technician	Anatomy	
Ms. N. Sakala	Assist. Technician	Embryology	Mat. Leave
Mr. L. Ngoma	Lab. Assistant	Anatomy	
Ms. G. Himoomba	Lab. Attendant	Embryology	
Ms. N. Hankolwe	Secretary	Administration	
Mrs. F.F. Mpundu	Typist	Administration	
Ms. N. Lungu	Cleaner	Biomedicals	Leave

STAFF LIST OF DISEASE CONTROL DEPARTMENT 1ST AUGUST, 1991

ACADEMIC STAFF

<u>NAME</u>	<u>POSITION</u>		
Prof. K. Nakamura	Professor	Public Health	JICA Long Term Expert
Prof. G. Sato	Professor	Public Health	JICA Long Term Expert
Prof. T. Kaji	Professor	Microbiology	JICA Long Term Expert
Prof. K. Inoue	Professor	Clinical Pathology	JICA Short Term Expert
Prof. N. Matsusaka	Professor	Public Health	JICA Short Term Expert
Dr. G.S. Pandey	Senior Lecturer	Clinical Pathology	
Dr. J.E.D. Mlangwa	Lecturer I	Epidemiology	
Dr. K. L. Samui	Lecturer II	Preventive Medicine	
Dr. L.M. Tuchili*	Lecturer II	Microbiology	
Mr. H. Chitambo	Lecturer III	Parasitology	(On study leave)
Dr. M. Ngoma	Lecturer III	Public Health	(On study leave)
Dr. A.S. Mweene	Staff Dev. Fellow	Clinical Pathology	(On study leave)
Dr. M.S. Syakalima	Staff Dev. Fellow	Clinical Pathology	

NON ACADEMIC

Mr. W. Ulaya	Acting Chief Technician	(Senior Technician)
Mr. L.N.K. Zulu	Senior Technician	
Mr. H. Chimana*	Technician I	(On study leave)
Mr. L. Mwanza	Technician I	
Mr. H. Sinsungwe	Technician II	
Mr. I. Nyambe	Assistant Technician	
Mr. J. Phiri	Assistant Technician	
Mr. A. Biemba	Laboratory Assistant	
Mr. S. Bwalya	Laboratory Assistant	
Mr. G. M. Nyeleti	Laboratory Assistant	
Ms. A. Phiri	Personal Secretary I	
Mrs. M. Chibwe	Typist	

* Appointed but in post.

CENTRAL SERVICES AND SUPPLY DEPARTMENT

<u>NAME</u>	<u>RANK/TITLE</u>	<u>QUALIFICATION</u>	<u>NATIONALITY</u>
Mr. W. Benkele	Chief Technician	Dip.Med.Lab.Sc. Cert.Vet.Tech.	Zambian
Mr. M. Kadono	Senior Technician	Eng. Spec.	Japanese(JICA)
Mr. D. Chilinda	Technician I	Adv.Cert. Electrical	Zambian
Mr. D. Howa	Technician II	Dip.An.Prod.	Zambian
Mr. G. Siame	Technician II	Dip.Mech.Eng.	Zambian
Mr. E. Chisala	Technician II	Cert.An.Health	Zambian
Mr. C. Singoyi	Asst.Technician	Form V	Zambian
Mr. M. Sakala	Lab. Attendant	Form III	Zambian
Mr. H.E. Phiri	Storekeeper	Form V, IPS.	Zambian
Mr. D. Mushoke	StoresClerk	Form V	Zambian
Mr. J. Kasope	Animal Attent.	Form II	Zambian
Mr. C. Silwamba	Animal Attent.	Form V	Zambian
Mr. A. Njovu	Animal Attent.	Grade 7	Zambian
Mr. W. Phiri	Plotman	Form III	Zambian
Mr. G. Phiri	Plotman	Grade 7	Zambian

updated 25 July 1991

STUDENT INTAKE 1983 - 89

Student	1983	1984	1985	1986	1987	1988	1989	1990
Second year	12	13	20	23	20	27	33	25 ¹⁹ ↓ failed
Third year	-	12	13	22	20	14	20	25
Fourth year	-	-	12	15	19	18	19	19
Fifth year	-	-	-	13	15	19	14	18
Sixth year	-	-	-	-	13	15	18	15
Total Numer	12	25	45	70	84	93	104	96

August 1991.

Latest Information for Graduates (1990) and their Destination

NAME	TITLE AND LOCATION	EMPLOYER
1. Banda M.N.	District Officer, Sesheke	Vet. Dept. G.R.Z.
2. Mr. Banda S.M.G	Veterinary Assistant, Lusaka	Galunia Holdings, Lusaka
3. Mr. Bishonga C.	S.D.F. Biomedical Sciences	School of Veterinary Medicine UNZA.
4. Bwalya Moses	House Surgeon, Clinical Studies	School of Vet. Medicine, UNZA.
5. Chipeta G.J.	Vet. Officer, Kitwe	ZCCM, Kitwe
6. Kabeta N.M.	Veterinary Officer, Zambezi	Vet. Dept. G.R.Z.
7. Lubinga C.	Veterinary Officer, Petauke	Vet. Dept. G.R.Z.
8. Matandiko W.	Veterinary Officer, Lusaka	Vet. Dept. G.R.Z.
9. Mulenga M.A.	S.D.F. Paraclinical Studies	School of Vet. Medicine UNZA.
10. Munengandu H.M.	Veterinary Officer, Lusaka	Vet. Dept. G.R.Z.
11. Mwinhali G.	Veterinary Officer, Mongu	Vet. Dept. G.R.Z.
12. Mulenga M.F.	Veterinary Officer, Mongu	Vet. Dept. G.R.Z.
13. Mwase K.	House Surgeon, [Paraclinical Studies	School of Vet. Medicine, UNZA.
14. Nyenja J.	Vet. Officer, Mazabuka	Vet. Dept. G.R.Z.
15. Siame M.	Ranch Manager, Mazabuka	Commonwealth Development Corporation.
16. Sitima A.C.M.	Vet. Officer, Namwala	Vet. Dept. G.R.Z.
17. Sumani H.	Job appointed [illegible]	About to get G.R.Z. Appointment

08 05 1991

Staff on further training 1990-1991

A. Technical Staff

D. Banda - Technician I

Left for Japan, 12/8/91

D. Bowa - Technician II

Left for Japan, 12/8/91

D. Chilinda - Technician I

Returned May 1991 from Japan

Chimana - Technician I

Left for Japan, 12/8/91

A. Chota - Asst. Technician

Continuing Diploma at NRDC, Zambia 1988-1991

(Exams now)

P. Masebe - Technician I

Left 12/8/91 for 10 mths in Japan

C. Mubita - Technician I

Returned from UK, 1990

M. Mubiana - Senior Technician

Returned from Japan May 1991

L. Mwanza - Technician I

Returned from Japan, May 1991

~~Nyeleti - Lab. Assistant~~

~~Continuing veterinary degree, USSR (1987-1992)~~

P. Phiri - Senior Technician

Left for Japan, 12/8/91

B. Sakala - Senior Technician

Returned from Eire, 1990

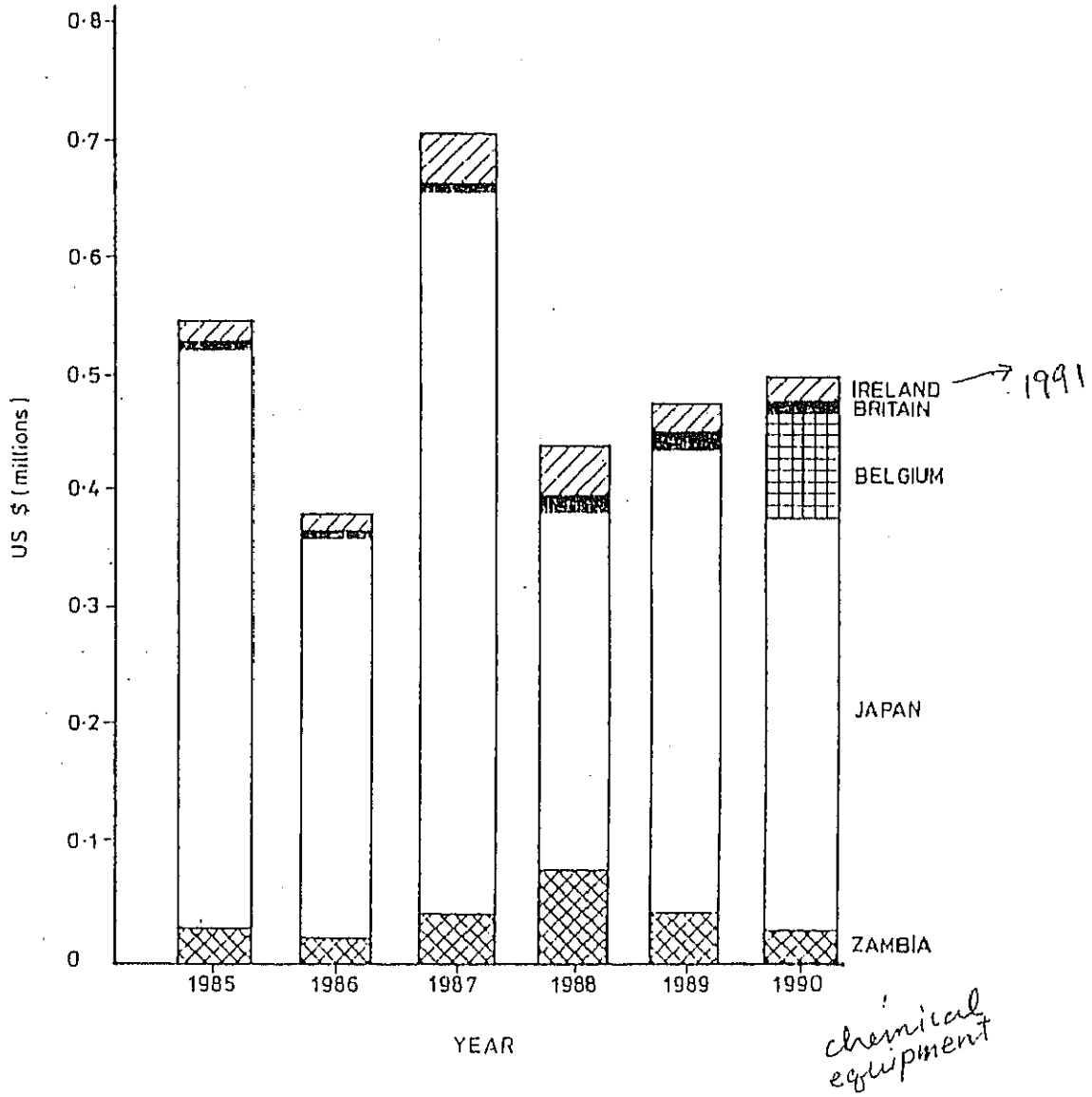
M. Silumbwe - Technician I

Returned from Japan, 1990

W. Ulaya - Senior Technician

Returned from Japan, May 1991

GENERAL EXPENDITURE GRANTS TO THE UNIVERSITY OF ZAMBIA
VETERINARY SCHOOL



RESEARCH PROJECTS IN THE SCHOOL OF VETERINARY MEDICINE

TITLE OF RESEARCH PROJECT	RESEARCH CONTRIBUTION						RESEARCH FUND
	BM	DC	PC	CS	OUTSIDE INSTITUTION		
1. STUDIES OF PARASITIC DISEASES IN INDIGENOUS GOATS IN ZAMBIA	X					K 40,000.00	
2. THE ANATOMY OF THE ZAMBIAN GOAT	X					K 40,000.00	
3. TRANSFER OF RAPID CASE-DEFINITIVE LABORATORY TECHNIQUES FOR MONITORING FERTILITY IN ANIMALS	X					K 20,000.00	
4. STUDIES ON THE REPRODUCTIVE CHARACTERISTICS OF ZAMBIAN GOATS	X					K 15,000.00	
5. MECHANISMS INVOLVED IN ENERGETIC DEATH AND THEIR POSSIBLE RELATIONSHIP TO REPERT BREEDING IN CATTLE	X			X		K 16,000.00	
6. INVESTIGATIONS INTO NITROBARIUM/NITRITE AND CYANIDE CONTAINING PLANTS IN THE LILANGA AREA	X					K 10,000.00	
7. ANATOMY OF THE NGUJE LEGHAE	X					K 20,000.00	
8. IN VITRO PARTICULO-FLUEN DIGESTIBILITY OF POUCHSTUFFS FED TO RUMINANTS	X		X			K 18,000.00	
9. STUDIES ON STRAUSCOCCI FROM MILK PRODUCTS IN ZAMBIA	X		X			K 30,000.00	
10. IMMUNE RESPONSES OF CALVES AND Rabbits TO TICKS			X			K 22,000.00	
11. SURVEY OF PARASITES AND FREE RANGE CHICKENS			X		JAPAN BIOLOGICAL INSTITUTE	K 2,440.00	
12. SURVEY ON TOMPELISA ANTIBODY IN HUMAN AND ANIMALS IN ZAMBIA			X	X	UTH, SCHOOL OF MEDICINE	K 400.00	
13. SURVEY ON DOG COCCIDIA			X	X		K 8,000.00	
14. CLIMATE PROTOCOL IN THE RUMEN OF WILD RUMINANTS IN ZAMBIA			X		NIPPON VET COLLEGE, MINISTRY OF WILDLIFE	K 30,000.00	
15. EPIDEMIOLOGY OF CALF MORTALITY		X				K 18,000.00	
16. SURVEILLANCE OF AGONIC DISEASE IN ZAMBIA		X					

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The School has six on-going research projects funded by the Norwegian Government which are as follows:

- (i) 'Biological and Nutritional Data for Zambian Indigenous Goats Related to Age, season and Diet.' C.E. Lovelace, V. Ramkrishna, T.R. Ayliffe.
- (ii) 'Investigation into Albiziosis.' T.R. Ayliffe, D.N. Kisauzi, V. Ramkrishna.
- (iii) 'Comparative Studies of Pyloric Outflow Surgeries in Dogs and Pigs.' J.R. Onamegbe.
- (iv) 'Studies of Rift Valley Fever in Zambia.' S. Inoue, A. Mweene, L. Mwanza, T. Kaji, K.L. Samui, J.E.D. Mlangwa.
- (v) 'Isolation and Characterisation of Local Strains of Newcastle Disease Virus in Zambia.' S. Inoue, R. Alders, T. Kaji, A.S. Mweene, L. Mwanza, S. Bwalya.
- (vi) '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, G. Sato, D.S. Misra, M. Ngoma.

THE UNIVERSITY OF ZAMBIA

INTERNAL MEMORANDUM

Date: 11th August, 1991

From: Co-ordinator of School seminars

To: The acting Dean - Veterinary Medicine

Subject: Report on School Seminars

I was appointed co-ordinator of the School Seminars on 12th July, 1990. I herewith would like to report on the activities organized between August, 1990 and August, 1991.

<u>Date</u>	<u>Speaker</u>	<u>Title</u>
05.09.90	Dr. K. YAMAGUCHI	Assessment of anthelmintic efficacy to gastrointestinal nematodes in sheep.
31.10.90	Dr. D. MIMBA	A study of important cattle ticks and their control at Kayanje ranch (Chisamba District).
21.11.90	JICA Film	Seed of hope. Aid at work in Zambia, Zimbabwe and Botswana.
02.01.91	Prof. J. VERCRUYSSSE	Schistosomiasis in Africa.
23.01.91	Prof. S. IMAI	Rumen ciliate protozoa, their significance for existing and evolution.
06.03.91	Dr. M. MUSONDA	Pathological study on swine lymphosarcoma.
21.03.91	Dr. L. THAETE	Immunocytochemical methods and their applications.
04.04.91	Dr. T. GRIMES	Dislocation of the lens in dogs.
07.05.91	Dr. J. YASUDA	Studies on the diagnostic significance of isoenzymes in liver diseases of dairy cows.
05.06.91	Dr. H. HILDERSON	Antigen analysis of <i>Ostertagia ostertagi</i> , a cattle parasite in temperate regions.
26.06.91	Prof. D.S. MISRA	Latest about AIDS.
03.07.91	Dr. E.T. MWASE	Some aspects on the ecology and biology of the cattle tick <i>Amblyomma variegatum</i> in Zambia.
10.07.91	Dr. Y. SATO	Avian diseases in Zambia.
	Dr. S. YUMURA	Serological survey of toxoplasmosis in animals in Zambia.
	Dr. S. INOUE	Isolation and characterization of local strains of Newcastle Disease virus in Zambia.
17.07.91	Prof. K. INOUE	Physiological biochemistry of the cow around parturition.
	Prof. N. MATSUSAKA	Metabolism of radioactive caesium - 137Cs.
30.07.91	Mr. R. J. NEFDT	Reproductive behaviour of Kafue Lechwe.
07.08.91	Prof. M. WASHIZU	Hepatic lobectomy utilizing descending aorta clamping and surgery of portacaval shunt.
14.08.91	Prof. G. SATO & Dr. M. NGOMA	Antibiotic resistance of <i>E. coli</i> and <i>Salmonella</i> isolated from apparently healthy slaughtered cattle and pigs in Zambia.

TENTATIVE SCHEDULE FOR THE IMPLEMENTATION

Japanese Cooperation Duration two and half years from January 22, 1990 to July 21, 1992		I		II		III	
		Jan. 1990 Dec.		Jan. 1991 Dec.		Jan. 1992 Dec.	
UNZA Academic Year (October - September)		1989 Oct	1990 Oct Nov	1991 Sep Oct	1992 Sep		
《 VETERINARY STUDENT ENROLLMENT 》							
I. Under-graduate Course (BYM)							
1. Intake		32	30	30	30		
2. Graduation		18	14	19	19		
3. Total Enrolment		103	115	131	131		
II. Post-graduate Course (MPM)							
1. Intake			3		3		
2. Graduation			-		3		
3. Total Enrolment			3		6		
III. Staffing projections (including JICA experts and JOCV volunteers)							
	Number Required	Present Number Including Process of Filling		Short fall			
1. Dean	1					1	
2. Professors	17	10				7	
3. Assoc. Professors	23	21				2	
4. Lecturers	12	8				4	
5. Teaching Assistants	5	5				-	
6. C. Technicians	8	4				4	
7. S. Technicians	1	1				-	
8. Pharmacist	1	1				-	
9. Radiologist	36	25				11	
10. Technicians	10	9				1	
11. Secretaries	2	2				-	
12. Administrative Officers	31	20				11	
13. Miscellaneous	147	106				41	
Total							

Japanese Cooperation Duration		I			II			III		
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990 Dec. 1990			Jan. 1991 Dec. 1991			Jan. 1992 Dec. 1992		
UNZA Academic Year (October - September)		1989 ~ 1990 Oct. Oct. Nov			1990 ~ 1991 Sep Oct			1991 ~ 1992 Sep		
<p>《 PROJECT ACTIVITIES 》</p> <p>1. Veterinary Education I. Curriculum planning of the subjects Department of Biomedical Sciences Department of Paraclinical Studies Department of Disease Control Department of Clinical Studies</p> <p>2. Lecture, laboratory work and field practice to veterinary students Department of Biomedical Sciences Department of Paraclinical Studies Department of Disease Control Department of Clinical Studies</p> <p>3. Development and production of teaching materials (1) Micro and macroscopic preparation (2) Audio-visual apparatus (3) Lecture notes (4) Laboratory units (5) Laboratory animals</p> <p>4. Collection and analysis of veterinary information and data (1) Reference books (2) Reprints (3) Data from relevant institutions</p> <p>5. Other necessary work for veterinary education (1) Maintenance, repairment, remodeling of equipments and facilities (2) Production and development of equipments (3) Education of technical staffs for laboratory works</p>										

Japanese Cooperation Duration					
two and half years from January 22, 1990 to July 21, 1992		I	II	III	
UNZA Academic Year (October - September)		1989 Oct ~	1990 Oct ~ Nov	1991 Sep ~ Oct	1992 Sep
II. Veterinary Research I. Survey of animal diseases in Zambia (1) Seroepidemiological studies on anaplasmosis and toxoplasmosis (2) Pathological analysis (3) Studies on transmission mechanism of Rift Valley fever (4) Seasonal fluctuation of gastrointestinal helminths and coccidia in sheep and goats (5) Preliminary survey on viral diseases in crocodiles (6) Geoepidemiological study on Akabane virus (7) Preliminary study of health and diseases of Zambian goats (8) Survey on the incidence of antibiotic resistant enterobacteria in animals in Zambia (9). Survey on parasites in fishes in Zambia 2. Research on diagnosis of animal diseases (1) Rapid agglutination plate test for Brucellosis (2) Preliminary study on establishment of method of Crocodile kidney cell culture (3) Maintenance method of animal cell lines (4) Preliminary neutralization and IFA test for Akabane diseases 3. Administrative collaboration in animal disease control and public health (1) Diagnostic survey on outbreak of Anthrax of wild life in South Luangwa (2) Diagnostic service on Rabies in animals (3) Survey on the hygienic level of meat and dairy food in Zambia 4. Applied research and dissemination of scientific and technical information					

Japanese Cooperation Duration		I		II		III	
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990 Dec. 1990		Jan. 1991 Dec. 1991		Jan. 1992 Dec. 1992	
UNZA Academic Year (October - September)		1989 Oct	1990 Oct Nov	1991 Sep	1991 Oct	1992 Sep	
III. Veterinary Extension I. Clinical services for the Veterinary Hospital (1) Laboratory diagnosis (hematological, biochemical, parasitological, microbiological, serological and histopathological) (2) Postmortem examination (3) Technical advices 2. Farm veterinary services (1) Laboratory diagnosis (hematological, biochemical, parasitological, microbiological, serological and histopathological) (2) Postmortem examination (3) Technical consultation 3. Dissemination of animal health and public health knowledge (1) Environmental survey on waters (2) Education of regional diagnostic officer for Newcastle disease diagnostic technique (3) Participation in Agriculture Show and Science Fair * Cooperation activities with other related schools of UNZA such as School of Agricultural Sciences, School of Medicine and School of Natural Sciences. (1) Postgraduate student supervisor in School of Natural Sciences and Agricultural Science (2) Visiting lecturer on zoonosis in UTH (3) Member of advisory committee of master course of parasitology in UNZA							

Notes: 1. These activities will be carried out mainly in the Department of Paraclinical Studies and the Department of Disease Control, the School of Veterinary Medicine, UNZA.

2. With reference to research activities of the Project, collaboration will be encouraged with Central Veterinary Research Institute, Zambian Institute of Animal Health, Regional Veterinary Laboratories under the Department of Veterinary and Tse-tse Control Services, Ministry of Agriculture and the National Council for Scientific Research.

Japanese Cooperation Duration		I	II	III
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990 Dec.	Jan. 1991 Dec.	Jan. 1992 Dec.
UNZA Academic Year (October - September)		1989 Oct ~	1990 Oct Nov ~	1991 Sep Oct ~ 1992 Sep
<p>《 JAPANESE CONTRIBUTION 》</p> <p>i. Experts Assignment Scheme</p> <p>A. Long-term</p> <p>1. Administration (1) Team leader (2) Coordinator</p> <p>2. Academic staff (Department of Paraclinical Studies) (1) Veterinary Pathology (2) Veterinary Pathology (3) Veterinary Parasitology, protozoology (4) Veterinary Parasitology, helminthology</p> <p>(Department of Disease Control) (1) Special and Preventive Veterinary Medicine 1) Viral diseases (2) Veterinary public health (3) Clinical pathology 1) Biochemistry 2) Hematology (Department of Biomedical Sciences)</p> <p>(Department of Clinical Studies)</p> <p>3. Technical staff (Central Services) (1) Senior technician</p>			approximately 8 experts	

Japanese Cooperation Duration	I			II			III		
	1989 Oct	1990 Oct	1990 Nov	1990 Dec	1991 Jan	1991 Sep	1991 Oct	1992 Jan	1992 Sep
two and half years from January 22, 1990 to July 21, 1992									
UNZA Academic Year (October - September)	1989 Oct	1990 Oct	1990 Nov	1990 Dec	1991 Jan	1991 Sep	1991 Oct	1992 Jan	1992 Sep
B. Short-term (Department of Paraclinical Studies)									
(1) Microbiology									
1) Virology									
2) Immunology									
3) Bacteriology									
(2) Pathology									
(3) Parasitology									
1) Protozoology									
2) Helminthology									
(Department of Disease Control)									
(1) Special and Preventive Veterinary Medicine									
1) viral diseases									
2) Avian diseases									
(2) Public Health									
1) Environmental hygiene /Laboratory animal									
2) Zoonosis									
(3) Clinical Pathology (Biochemistry)									
(Department of Biomedical Sciences)									
(Department of Clinical Studies)									
(1) Radiology									
C. Japan Overseas Cooperation Volunteers									
(1) Teaching assistant (Veterinary Pathology)									
(2) Teaching assistant (Veterinary Bacterial Diseases)									
(3) Teaching assistant (Veterinary Parasitology, Protozoology)									
(4) Teaching assistant (Veterinary Clinical Pathology)									
(5) Teaching assistant (Veterinary Viral Diseases)									
(6) Teaching assistant (Small Animal Clinic)									

several experts annually

t

Japanese Cooperation Duration		I	II	III
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990 Dec. 1990	Jan. 1991 Dec. 1991	Jan. 1992 Dec. 1992
UNZA Academic Year (October - September)		1989 Oct	1990 Oct ~ Nov	1991 Sep ~ Oct
II. Equipment Supply Scheme Equipment and materials to be provided based on annual supply system				
III. Counterpart Training Scheme Zambian counterparts to be received in Japan - annually (Technical training and observation) ...JICA C/P Large animal surgery				
Microbiology				
Science laboratory instrument maintenance				
JOCY C/P Pathology				
Clinical diagnostic technique				
Virology				
IV. Japanese government scholarship (Technical cooperation)				
Pathology				
Parasitology				
Pathology				
V. Special emergency programme for extension of Central Services Workshop				
1. full activities				
2. supplementary activities				

Japanese Cooperation Duration		I		II		III	
two and half years from January 22, 1989 to July 21, 1992		Jan. 1990 Dec. 1990		Jan. 1991 Dec. 1991		Jan. 1992 Dec. 1992	
UNZA Academic Year (October - September)		1989 Oct	1990 Oct Nov	1991 Sep Oct	1991 Sep Oct	1992 Sep	1992 Sep
<p><u>ZAMBIAN RESPONSIBILITIES</u></p> <p>I. Counterparts</p> <p>1. Head of the Project</p> <p>2. Academic staff</p> <p>(1) Professor</p> <p>(2) Associate Professor</p> <p>(3) Senior Lecturer</p> <p>(4) Lecturer</p> <p>(5) Chief Technician</p> <p>(6) Technician</p> <p>(7) Teaching Assistants</p> <p>3. Administrative Personnel</p> <p>(1) Lusaka Campus Administration</p> <p>II. Provision of running expenses of the Project</p> <p>III. Provision of land, buildings and facilities</p>							

TENTATIVE SCHEDULE FOR THE IMPLEMENTATION

Japanese Cooperation Duration two and half years from January 22, 1990 to July 21, 1992	I			II			III		
	1989 Oct	1990 Oct ~ Nov	1990 Dec.	1991 ~ Sep	1991 Dec.	1991 Oct ~ Sep	1992 ~ Sep	1992 Oct	1992 Sep
UNZA Academic Year (October - September) (VETERINARY STUDENT ENROLLMENT)	1. Under-graduate Course (BVM)								
	1. Intake (2nd Year)	32		19		30			
	2. Graduation (6th Year)	17		14		15			
3. Total Enrolment	102			104		120			
II. Post-graduate Course (MVM)									
1. Intake									
2. Graduation									
3. Total Enrolment									
III. Staffing projections (including JICA experts and JOCY volunteers)	Number Required	Present Number Including Process of Filling			Short fall				
1. Dean	1	1			1				
2. Professors	17	10			7				
3. Assoc. Professors	23	21			2				
4. Lecturers	12	8			4				
5. Teaching Assistants	5	5			4				
6. C. Technicians	8	4			4				
7. S. Technicians	1	1			4				
8. Pharmacist	1	1			4				
9. Radiologist	36	25			11				
10. Technicians	10	9			1				
11. Secretaries	2	2			1				
12. Administrative Officers	31	20			11				
13. Miscellaneous									
Total	147	106			41				

Handwritten notes:
 1991 (19) →
 1991 (14)
 1991 (104)
 1992 (30)
 1992 (15)
 1992 (120)
 Veterinary Candidates (1992)

Handwritten notes:
 1990 (19)
 1991 (14)
 1991 (104)

Japanese Cooperation Duration		I	II	III
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990 Dec. 1990	Jan. 1991 Dec. 1991	Jan. 1992 Dec. 1992
UNZA Academic Year (October - September)		1989 ~ Oct	1990 ~ Nov	1991 ~ Sep 1992 Sep
<p>《 JAPANESE CONTRIBUTION 》</p> <p>I. Experts Assignment Scheme</p> <p>A. Long-term</p> <p>1. Administration (1) Team leader</p> <p>(2) Coordinator</p> <p>2. Academic staff (Department of Paraclinical Studies) (1) Veterinary Pathology</p> <p>(2) Veterinary Pathology</p> <p>(3) Veterinary Parasitology, protozoology</p> <p>(4) Veterinary Parasitology, helminthology</p> <p>(Department of Disease Control) (1) Special and Preventive Veterinary Medicine 1) Viral diseases</p> <p>(2) Veterinary public health</p> <p>(3) Clinical pathology 1) Biochemistry 2) Hematology</p> <p>(Department of Biomedical Sciences)</p> <p>(Department of Clinical Studies)</p> <p>3. Technical staff (Central Services) (1) Senior technician</p>		<p>approximately & experts</p> <p>Fujimoto Tsutsumi Kasegawa</p> <p>Fujimoto Matsukawa Madaime Tsutsumi</p> <p>Yamauchi Seiki</p> <p>Kaji</p> <p>Cr. Sato Nakanura</p> <p>Tamamura Y. Sato</p> <p>Kadono</p>		

Japanese Cooperation Duration		I		II		III	
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990	Dec. 1990	Jan. 1991	Dec. 1991	Jan. 1992	Dec. 1992
UNZA Academic Year (October - September)		1989 Oct	1990 Oct	1990 Nov	1991 Sep	1991 Oct	1992 Sep
B. Short-term (Department of Paraclinical Studies) (1) Microbiology 1) Virology 2) Immunology 3) Bacteriology (2) Pathology (3) Parasitology 1) Protozoology 2) Helminthology (Department of Disease Control) (1) Special and Preventive Veterinary Medicine 1) Viral diseases 2) Avian diseases (2) Public Health 1) Environmental hygiene /Laboratory animal 2) Zoonosis		Umemiya					several experts annually
		Shinagawa		Imai		Nomura	
		Suziyama			Matsuyaka		
		Suzuki					
		Suganuma			Inoue		
		Iida		Yasuda	Yashizu		Reproduction
C. Japan Overseas Cooperation Volunteers (Veterinary Pathology) (2) (Veterinary Bacterial Diseases) (3) (Veterinary Parasitology, Protozoology) (4) (Veterinary Clinical Pathology) (5) (Veterinary Viral Diseases) (6) (Small Animal Clinic)		Suzuki		Kumura		Physiology	Hironotari
		Hasebe		Yumura			
				Tsukihara			
				Inoue			
				Kabayashi			

Japanese Cooperation Duration		I		II		III	
two and half years from January 22, 1990 to July 21, 1992		Jan. 1990	Dec. 1990	Jan. 1991	Dec. 1991	Jan. 1992	Dec. 1992
UNZA Academic Year (October - September)		1989 Oct	1990 Oct	1990 Nov	1991 Sep	1991 Oct	1992 Sep
II. Equipment Supply Scheme Equipment and materials to be provided based on annual supply system III. Counterpart Training Scheme Zambian counterparts to be received in Japan annually (Technical training and observation) JICA C/P Large animal surgery Microbiology Science laboratory instrument maintenance JOCY C/P Pathology Clinical diagnostic technique Virology		1990	1990	1990	1991	1991	1992
IV. Japanese government scholarship (technical cooperation) Pathology Parasitology Pathology		1989	1990	1990	1991	1991	1992
V. Special emergency programme for extension of Central Services Workshop		1989	1990	1990	1991	1991	1992
1. full activities 2. supplementary activities							

1991 Parasitology
 Biochemistry
 Microbiology
 Clinical Biochemistry
 Animal Nutrition and Pasture Management

POSTGRADUATE PROGRAMMES IN THE SCHOOL OF MEDICINE AT UNZA

At the moment, the Medical School is only running a master's programme; and from my discussions with some senior academic staff of the school, there are no immediate plans to extend these programmes to PhD level.

Following is a brief description of the said programme.

Name of course: Master of Medicine (M. Med)

Areas of study: Internal Medicine, Obstetrics & Gynaecology
Paediatrics and Surgery.

Duration : Four to seven years.

Eligibility : M.B; Ch.B. (i.e. Bachelor of Medicine & Surgery) and membership of the Medical Council of Zambia for at least one year.

M. Med. is taken on part - time basis by medical graduates working full time in clinics and is broken into two parts.

Part I consists of one - year study of basic Medical Sciences followed by written and oral examinations. Before proceeding to part II, a candidate is required to complete all part I courses successfully.

Part II consists of clinical work, a research project, and written, practical and oral examinations. During the third year of study, all students are required to spend at least six months at a rural hospital.

Rationale: This course is primarily aimed at producing clinicians with practical ability to handle common medical cases. Academic competence in the said areas of specialization is not emphasized and it is not envisaged to have these programmes go up to PhD level. A similar programme is also being run in Tanzania and Zimbabwe.

Current enrolment:

Part I : 9 students

Part II: 7 students

付-5 UNZA 獣医学部技術協力計画フェーズⅡ要請書

1. 平成3年1月18日付外務公信第46号(在ザンビア杉浦大使より外務大臣あて発信)により事
以降のプロジェクト方式技術協力の要請があった。
2. 参考まで抄訳も添付した。
3. なお、本要請書説明資料は、無償資金協力に係る部分も含まれている。

Communications should be addressed
to the Permanent Secretary

Telephone: LUSAKA 211571, 211348, 211549, 211747, 250417

Telegrams:



In reply please quote:

NCDP/101/7/69

REPUBLIC OF ZAMBIA

OFFICE OF THE PRESIDENT

NATIONAL COMMISSION FOR DEVELOPMENT PLANNING
NATIONALIST/MBITA ROAD
P.O. BOX 50265
LUSAKA

31 December 1990

His Excellency the Ambassador,
Embassy of Japan
LUSAKA

Your Excellency

REQUEST FOR ~~GRANT AID~~ VETERINARY EDUCATION
PROJECT PHASE II

I wish to draw your attention to the enclosed documentation with regard to the above request.

As you may no doubt be aware phase I of the UNZA Veterinary Education Project contributed significantly to livestock production in the country. Hence, the loss of animals will continue to be significantly reduced as a result of the increased manpower situation.

In view of the foregoing, the Government of the Republic of Zambia wishes to request for assistance to cover phase II of the project. This phase is with the priority areas for national development.

Also, I wish to express, the Government of Zambia's gratitude for the kind assistance Japan has provided to Zambia.

Please accept Your Excellency, the assurances of my highest consideration.

A handwritten signature in dark ink, appearing to be 'M C Soko'.

M C SOKO
DIRECTOR (ETC)
FOR/PERMANENT SECRETARY
NATIONAL COMMISSION FOR DEVELOPMENT PLANNING

cc Vice Chancellor
University of Zambia
LUSAKA
Att: Ms Jean M F Calder
Special Administrative Assistant to the Vice Chancellor

OFFICIAL REQUEST
OF
TECHNICAL COOPERATION AND GRANT AID
FOR
PHASE II - DEVELOPMENT PLAN
OF
THE SCHOOL OF VETERINARY MEDICINE
UNIVERSITY OF ZAMBIA (UNZA)

NOVEMBER, 1990

I. INTRODUCTION

1. Objectives and the History of Development of the School of Veterinary Medicine at the University of Zambia.

a. The objectives of the School of Veterinary Medicine can be summarised as follows:

To produce Veterinarians of international standard to assist in promotion of animal production development in Zambia. This involves training graduates and postgraduates up to higher degree level to produce Zambian Academic staff and Senior Personnel for Government and other Institutions. This also includes carrying out research and extension services in all areas of veterinary medicine.

A most important area for the School is to train its own Academic staff to lead the future development of the School. This is the main function of the Staff Development Programme for Zambian staff.

b. Development History

1. Official request of Grant Aid - Establishment of School

The development of the Livestock industry was one of the major agricultural objectives, following Zambia's independence from Britain in 1964.

The development potential of the Livestock industry in Zambia is very high because there are large areas of possible pasture and good water resources. However, many problems have been encountered, particularly because of the serious tropical diseases affecting cattle and small ruminants. This could not be tackled as Zambia had a critical shortage of veterinary personnel, with only 12 Zambian veterinarians in 1980.

According to the above background, the establishment of a Veterinary School in Zambia was considered a high priority.

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I. INTRODUCTION

1. Objectives and the History of Development of the School of Veterinary Medicine at the University of Zambia.

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According to the above background, the establishment of a Veterinary School in Zambia was considered a high priority.

A detailed study was made by the Food and Agriculture Organisation (FAO, 1981) and the establishment of the Veterinary School was recommended to the Zambia Government. Three hundred Veterinarians were reported as the minimum requirement for Zambia in 1981.

In August 1982, the official request for Grant Aid and Technical Cooperation for the School of Veterinary Medicine was made by President Kaunda to the Japanese Government through the Crown Prince of Japan, following his state visit to Zambia.

In October 1982, the first investigation was carried out by JICA Project Mission and in August 1983, the Official Request of the Grant Aid was agreed between the Zambian and Japanese Governments.

The basic request included the School facilities, student hostels, equipment and related facilities as the minimum requirement for student veterinary education.

The scale of final draft was smaller than the original proposal. The construction started in March 1984, and the building was commissioned to the University of Zambia on 28th February 1986.

On 15th October 1986 President Kaunda attended the official opening ceremony for the School of Veterinary Medicine, University of Zambia. The School of Veterinary Medicine consisted of Administration building, four teaching departments, Central Services building, Lecture hall, Library, student hostels, Animal accommodation and water supply tank and the total floor space was 12,909m². The total cost of construction was 3900 million yen, (26 million US dollars).

For the purpose of development of the Veterinary School, Technical Cooperation for the School has been decided as the follow-up action to the Grant Aid. This included despatch of JICA experts and JOCV members and a JICA coordinator to assist with development of the education Phase of the project. The duration of technical cooperation was decided as five years to be Phase I of the development plan. The main objective for Phase I was decided as the Establishment of Veterinary Education programme for undergraduate students.

2. Development of Undergraduate Education Programme

The construction of the School, which became a show piece for the University, began in February 1984 and was completed in 1986. However, due to the pressing need for veterinarians it was decided not to delay the introduction of the teaching programme until the buildings became available and temporary premises were provided to enable the first class of fourteen (14) students to be admitted to the veterinary course in October 1983.

The intake has been increased annually in order to graduate a maximum of thirty (30) veterinarians each year. The programme of study extends over six 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 do anatomy, embryology and physiology in the Department of Biomedical Sciences, and biomathematics, agronomy, genetics, and biochemistry in the School of Agricultural Sciences and Natural Sciences. Third year covers more biomedical sciences, and animal nutrition. The fourth year is spent in the Department of Paraclinical Studies with pathology, microbiology, parasitology and pharmacology, and also animal production. The students start clinical work in their fifth year, where their lectures are split between the Departments of Disease Control and Clinical Studies. At the end of the sixth year the students are externally examined in their main areas of study

including Medicine, Surgery, Theriogenology, Preventive Medicine, Public Health, Epidemiology, Economics and Extension.

The course is designed to produce practising Veterinarians, so the practical component is very important. In each of the vacations from third to fifth year, the students are expected to have practical experience, first on the farm, second in a diagnostic laboratory and lastly in a veterinary clinic. The School has attached to it an active Small Animal Clinic, open to the public daily. It 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 demonstration. The School also has small animal hospitalization quarters, special accommodation for small laboratory animals and a covered-pen area for large animals. Cattle, horses, goats and sheep are kept in 13 hectare paddocks at the rear of the School. These are used for student teaching and for research. The School also has 50 hectares of arable land as part of the University Farm.

Research in the School is active with a variety of diseases being studied. Several surveys are being carried out on important ruminant diseases, including zoonoses. The School has students doing postgraduate studies by research, some working in the Laboratory and some out in the field. It is intended to start a postgraduate programme for M. Vet. Med in Diagnostic Veterinary Medicine.

In 1988, thirteen (13) Veterinarians were graduated from the Veterinary School, the following year fifteen (15) graduates were produced and in 1990, eighteen (18) are in the final year.

The prospects for graduates of the School of Veterinary Medicine are excellent at present. There are a variety of interesting, responsible jobs in Government, Parastatal and private farming and pharmaceutical enterprises.

All graduates have found interesting positions, the major locations were in government organizations, the School of Veterinary Medicine and private farms. All the graduates are working as Veterinary officers or staff development fellows with twenty seven (27) postgraduates out of twenty-eight (28) working in Zambia as Veterinarians.

In August 1989, the progress of the first five years of Technical Cooperation was assessed by a JICA evaluation team and 2.5 years extension was approved.

The progress of development of veterinary school is on schedule, due to the strong efforts of the University of Zambia, JICA experts, JOCV members and all the other staff. The development progress of the School of Veterinary Medicine was reported as "A success story of UNZA" by a European Consultant Team.

3. The Development of the Postgraduate Education Programme

The production of Zambian academic staff through postgraduate education is the next objective for the School of Veterinary Medicine. From the view point of JICA project, the production of counterparts was one of the targets of Phase I of the development plan. However, it is clear that training up to Ph.D. level takes a longer than five years. Phase II will be involved in the important objective of technical transfer, and development of high-level training for Zambian Academics and Researchers. "Long term vision" is the most important and essential stance for any education project.

4. Objectives and Basic Concept of Development Plan

The objectives and basic concept that had been previously agreed between Zambian government and Japanese government are summarized below.

a. The Role of the Veterinary School

When it has reached its planned capacity, the school will graduate thirty (30) veterinarians each year, as well as approximately twelve persons trained at postgraduate level in veterinary sciences.

This output of Zambian Veterinarian will ensure the filling of veterinarian posts in accordance with the plan to cope more and more effectively each year with the control of animal disease. Because the training programme will include instruction in veterinary and related fields, including animal behaviour, livestock production, animal management and extension, the veterinarians will be equipped not only with expertise related directly to animal diseases but also with general competence in matters of animal production and their improvement and with the skills for communicating this knowledge to the ordinary farmer undertaking animal husbandry. The proper development of veterinary personnel trained in this way will therefore lead to a decline in certain animal diseases, to the eradication of some and to the control of all. It will also lead to an improvement in livestock management practices, especially in the traditional sector, and subsequently to an improvement in animal health and reproduction.

(1) Social Role for Zambian Veterinarian.

The development of the livestock industry with an increased number of locally trained veterinarians will also lead to a significant improvement in the overall standards of human health and well-being because of:

- (a) better control of the endemic diseases of livestock animals,
- (b) improvement in the health of animals and in their reproductivity,
- (c) The greater availability of milk, meat and other animal products,
- (d) The reduced transmission of diseases from animals to humans,
- (e) The contributions made by the veterinarians to public health services such as food hygiene and environmental hygiene,

- (f) the promotion of public awareness of how pets and wild animals should be handled.

(2) Postgraduate Education and Research Work

Through its postgraduate and research programmes, the School will serve as a centre for dealing with a number of the animal health problems that are endemic in Zambia and neighbouring countries. The School of Veterinary Medicine will also collaborate with other research centres such as Central Veterinary Research Institute (Balmoral), and National Council for Scientific Research, plus Institutions in other African countries such as International Laboratory for Research on Animal Diseases and International Livestock Centre for Africa.

(3) Contribution to the Southern African Region

The need for a greatly increased number of veterinarians is felt also by the countries adjacent to Zambia. It is not likely that any of these countries will wish to establish their own school so their nationals could be admitted to the school in Zambia as students. Since Zambia is enclosed by seven other countries and since the transmission of animal diseases cannot be stemmed by national boundaries (especially where there is a large wild animal population) it is clearly in Zambia's interest to assist in some way in providing veterinary training for these countries. This would also serve to establish links between these countries that will contribute to the prosperity and stability of the entire region.

b. Basic Programme of the School of Veterinary Medicine

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 veterinary studies. Considering the level of the graduates of secondary schools in Zambia, the JICA mission and the Zambian officials have revised the original plan to emphasise undergraduate education. Equipment has been selected as the minimum requirement for the student education. The scale of the project was thus reduced.

(1) The first purpose of the School

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

(2) Organization

As a result of the discussions between the parties, the above mentioned study of the livestock industry and administration system, and consideration of both international trends and the experience of Japan, a revised concept plan having four departments has been agreed on. The new Departments were: the department of Biomedical Sciences, the department of Paraclinical Studies, 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 reconsidered. No special department will be required for animal sciences, since these subjects can be adequately provided for at the School of Agricultural Sciences (already in existence in temporary facilities). The subjects taught by each of the new departments were listed.

(Refer :- Appendix - 2)

(3) Education programmes

Target number of student year requirement and the training programme in original agreement between Zambian government and Japanese government are tabled in Appendix - 3.

Training programme for M.S. course has been decided for 2 years and the target number is 8 per year.

Training for Ph.D course was indicated as 3-4 years programme, and 4 postgraduates per year were suggested.

(Refer - Appendix - 3)

(4) Minimum Requirement of staff

109 staff was shown as the minimum number of staff for the undergraduate education programme. Number of academic staff was listed as 31 including Dean, four Professors, Associate Professor (11) and Lecturers (15).

(Refer - Appendix - 4)

(5) Education building and equipments supply

"Space, facilities and equipments must be decided as the minimum requirement for undergraduate training programme". This was noted as the basic concept.

All equipment to be selected for postgraduate education must be decided in Phase II, and included in the Project.

Updated situation of Veterinary School and Self-Reliant Efforts of UNZA.

a. Summary

Due to the strong self-reliant efforts of UNZA and continuous support of Japanese government, the education programme for undergraduate students will be established by the end of 1991. The strong self-reliant efforts of the Zambian Government and UNZA were shown in the administration of government scholarships, free distribution system of student text books, establishment of staff development fellowship and active programme recruitment of staff.

b. Undergraduate Education

(1) Number of undergraduate students

The first intake was 14 students, then the number of students was increased year by year with students intake last year at 33. Cumulative number of students is 104. This number is 70% of the final target (150).

Due to the self-reliant efforts of UNZA, and the Government, a loan scheme for text books has been established with undergraduate government scholarships and 80% of undergraduate enjoyed the benefits.

(2) Number of Graduates in Zambia

28 veterinarians have graduated from the School. 7 postgraduates are involved in training as candidates to be future academic staff because their academic qualities are very high. 15 graduates have joined the Ministry of Agriculture and the other governmental organizations, and these will be actively involved with farmers and improvement of Zambian livestock industry.

(Refer: Appendix - 5,6)

(3) Undergraduate programme

Education programme for students have been improved year by year.

(4) Equipment and specimens for undergraduate Education

The equipment for student use is mainly supplied through the great support of the Japanese government, though some has been supplied by Britain and Zambia. An additional supply of student microscopes must be ordered from now on because of the increase in number of students. Specimens for student practice must be collected continuously. It will take ten years to get sufficient quantity and quality.

c. Postgraduate programme

(1) Staff Development Fellow (SDF) and House Surgeon (HS)

Staff development fellow and House Surgeon have been introduced in the Veterinary School. The position of SDF and HS is 4 seats and 2 seats in the Veterinary School. This shows the high priority that the University gives the Veterinary School, because the total number of SDF positions in the University of Zambia is only 14 this year.

(2) Training programme for Masters course

Masters Course in Diagnostic Veterinary Medicine, including Diagnostic Pathology, Clinical Microbiology, Clinical Parasitology and Scientific Methodology will be commenced in 1991 academic year.

(3) Training programme for PhD course

Two Zambian academic staff have been awarded Ph.D degree in Japan and UK to-date. Five academic staff are on training programmes. Japan (2) USA (1) UK (1) Kenya (1). Training programme for Mr. R. Muino (Paraclinical Studies Department) was supported by a scholarship from UNZA. Training programme for Ph.D. course work is under discussion.

(4) Refreshers programme for graduates outside UNZA

The importance of refresher courses for the graduates who were working outside the University was agreed as a process of Continuing Professional Education, but has not yet commenced because of shortage of facilities and equipment.

d. Veterinary Research

More than 30 research projects are under way in the School. Due to the strong support of UNZA, annual rate of increase in research funds is approximately double each year.

(Refer = Appendix - 9)

e. Veterinary Extension

The farm ambulatory clinic, small animal clinic and the Veterinary Diagnostic Laboratory are actively involved with the public and their animal problems. These facilities are heavily utilized. Extension of small animal clinic by UNZA budget is under discussion.

f. Facility and Equipment

All facility and equipment except P.M. room would be established by July 1992. Facilities and equipments for postgraduate education must be established at the early stage of Phase II.

g. Management of the School of Veterinary Medicine

(1) Deanship

Prof. C.E. Lovelace is working as the Acting Dean since September 1989, when Prof. R.J. Thomas left. Role of JICA Team Leader is Assistant Dean.

(2) Academic staff

Number of academic staff are tabled in appendix 4 and 10. Total number of academic staff is 29. In the near future, the total number will reach the final number (31). Number of Zambian academic staff is 6 and their position is lecturer II and III. Accordingly, Zambian academic staff cannot be the supervisor for postgraduate programme. At this moment the four full professors are JICA experts. (Refer: Appendix 4 and 10).

(3) Technical staff and others

Total number is 68 (Veterinary School: 62, Veterinary Library: 6) Target number is 72.

Zambianization for technical staff has been achieved in 1990 because Mr. W. Eankele was appointed as the Chief Technician for Central Services just after his training programme in Japan, to take over from Mr. J. Griffen. Due to the great efforts of UNZA, which gave an 85% increase in pay to junior staff, and a higher increase to Academic staff, future recruitment will be easier.

All technical staff who have undergone training programmes in Japan are in senior positions in the School. Thus their training will have maximum effect on the School.

(4) Dispatch of JICA experts

A total of 15 JICA experts have been dispatched annually as follows: (Long term expert: 10, short term expert - 5).

JICA Coordinator and senior Electrical Engineer are included in long term experts. Long term experts have participated in school management as the Heads of Department and Committee Members of the School and Senate.

Short term experts are invited as short term lecturers and as supervisors for Staff Development Fellow research work. The areas of expertise of the current JICA experts are summarized in appendix - 11.

(5) Dispatch of JOCV

5 JOCV members are working as Teaching Assistants/Lecturers Grade III. Their role was very important in teaching students and technicians and preparing practical classes. Many technicians could attend outside training programmes because of their assistance, their specialities are summarized in appendix - 12.

(6) Other Donor Agencies

A large number of the academic staff are still non-Zambian. JICA, ODA (U.K.), HEDCO (Ireland), VVOB and University of Gent (Belgium) have dispatched experts for the School of Veterinary Medicine. HEDCO, Belgium, IAEA, IFS and Norwegian Government also supply research funds.

h. School Budget.

(1.) General Expenditure

UNZA budget and budget for the school of veterinary medicine from 1984 to 1990 and the projection are tabled in appendix-13.

Since 1984, all running costs and emoluments have been managed by UNZA.

(Refer - Appendix - 13)

(2) Research Fund

Total research fund in 1984 was K5,800.00 School research fund in 1990 is K117,250.00 (more than 20 times increase in 6 years).

The importance of research work in veterinary field has been put as high priority by the University of Zambia.

i Staff Development Programme

(1) Academic staff and SDF

The current state of training programme for academic staff and SDFs in 1989-1990 is summarized in appendix - 14.

All Ph.D. training programmes for the 7 academic staff are outside Zambia. (Japan 3), (UK 2), (Kenya 1), (USA 1).

(Appendix - 14)

(2) Training programme for Technical staff

22 technical staff have participated in training programmes as outlined in appendix - 15.

19 programmes have been held outside Zambia

9 technical staff have been involved in training programmes in Japan and all of them are in the School of Veterinary Medicine.

5. Problems to be Solved in the Near Future

a. Facilities, Equipment and Supervisors for postgraduate programme.

The main objectives of Phase I is the establishment of the undergraduate programme. This has resulted in most equipment being for student use. Thus equipment items for research purpose are very few in the School of Veterinary Medicine.

For the purpose of the establishment of postgraduate education, special equipment and senior staff as supervisors must be introduced to the School of Veterinary Medicine. This is the background of Official Request of Grant Aid and Technical Cooperation.

b. Post Mortem Room (P.M. Room)

Post Mortem Room is a 'most important facility, not only for diagnostic purposes but also students' practice. The present facilities are too small for large animals, (e.g. the Hoist is too low, the cold room is too small) and the extension of present facilities is difficult due to the structure of the building. The request will then include a Post Mortem room.

c. Veterinary Diagnostic Laboratory

The Diagnostic Laboratory now exists as part of the Disease Control Department and diagnostic practical work is carried out in the same laboratories as preparation for student laboratories. This is one of the weakest points of the School. Secondary infection to the student is anticipated because many kinds of infected materials have been brought from farms to the Diagnostic Laboratory and Post-Mortem Room. According to our development plan, diagnostic laboratory will move to the Veterinary Research Centre, so that it can operate independently.

d. Animal Accommodation facility

Facilities are greatly insufficient. The area for laboratory infected animals in present facility is very small, so only one kind of animal can be studied. There are only four pens available for infected large animals and this is very inadequate for an Institution studying animal diseases in Zambia. There is no insectiary, yet tsetse flies carry trypanosomiasis which has huge effects on the economy of the country. Development of this facility must be included.

II. Future Development plan of the School of Veterinary Medicine

1. Prospect of School of Veterinary Medicine

This development plan has started as a new project because there was no higher level Veterinary training in Zambia...

One of the major objectives, is "Zambianization" of the staff of the Institution, which is a long term effort. Here, it must be stressed, as agreed between Zambian government and Japanese government prior to the commencement of this project, the long term vision and support are essential for an education project in Africa.

2. Master Development plan of the School of Veterinary Medicine

There are two long range plans.

The mid and long term future planning in the development of the School of Veterinary Medicine was drafted by Prof. R.J. Thomas in June 1988 and approved as the master plan of the "School of Veterinary Medicine. (Appendix - 16), the first plan was updated in October 1990 by Prof. C.E. Lovelace as the second plan.

In second plan, duration of Phase I is 7.5 years (1.1985 - 7.1992) Phase II is 5 years (8.1992 - 7.1997) and Phase III is also 5 years (8.1997 - 7. 2002).

The main objectives of Phase I is establishment of undergraduate programme. The main objectives of Phase II are establishment of Postgraduate Education, Research and Development of Zambian Academic staff.

(Refer: Appendix - 16,17)

In Phase III, Development of high level Zambian staff. Improvement of Clinic facilities, and Extension activities.

3. Phase II Development Plan

- a. Importance of Phase II and its Basic concept. The function of a University is to transfer knowledge to students and research to gain new knowledge. Balance of the education function and research function is the most important factor for the development of the University.

In order to Zambianize staff positions in the School of Veterinary Medicine, the under - and postgraduate training programme must be established and the professional knowledge and technique must be transferred to Zambian students.

Main objectives of Phase II is the establishment of postgraduate programme and research facilities.

At present, 11 academic staff and postgraduates are under training or have completed training for MSc or PhD in foreign countries because there is no suitable facility and equipment in the School.

Such a situation will continue until completion of a research facility.

The main areas of research should be focussed on tropical animal diseases and problems of reproduction and nutrition in Zambia, because Zambian postgraduates who are conscious of Zambian problems will be most useful for future development. The limitation of MSc and Ph.D training programme abroad is that the research results of foreign programmes may not be useful to the Zambia livestock problems.

Thus the University is very keen in setting up local postgraduate training programmes, as this will be most useful for Zambian development.

It is proposed that MSc course for all postgraduates will be managed in the Veterinary Research Centre, together with the major parts of the Ph.D training programme.

High level research activity and research equipment will be a considerable attraction for researchers and academic staff from other parts of the world and it is hoped that many specialists will visit the School of Veterinary Medicine to do research and act as supervisors for postgraduate programme. Accordingly, establishment of Veterinary Research Centre is basic to the idea the "Zambianization" of Senior Veterinary staff.

b. The concrete plan of Phase II

For the purpose of postgraduate education, research work and veterinary extension, dispatch of JICA experts, equipment supply and establishment of research facility are included in Phase II plan.

Dispatch of JICA experts, equipment supply for postgraduate programme and the construction of Research Centre building are requested to Japanese government. Construction of experimental farm, accommodation of large animals, paddock for wild animals and extension to Clinic are under discussion by Zambian side. The details are explained in Chapter V.

Development plans of research centre are outlined in next Chapter and dispatch plan for JICA/JOCV experts is explained in IV - 2 (a) and (b).

c. Objectives of Phase II

Concrete objectives of development in veterinary education, veterinary research veterinary extension, facilities, equipment and staff are summarized in appendix - 18.

(Refer - Appendix - 18)

(1) Veterinary Education

Number of students and cumulative number of postgraduates have been agreed on.

150 undergraduate students is anticipated by 1997. At that time the target will be reached of 30 students in each year of study.

Cumulative number of postgraduates will be more than 200 by 1997, that number is 2/3 of minimum requirements (300) of Veterinarians.

(2) Veterinary research

It is expected that all research results must be published. It is hoped that more than 40 research projects will be carried out and more than 30 publications will be made during one year after the construction of Veterinary Research Centre.

(3) Veterinary Extension

Development of the diagnostic laboratory and the refresher programmes for the Veterinarians who are working outside the University are behind schedule at this moment. The very unsatisfactory current situation of the diagnostic laboratory will be solved by the construction of Research Centre.

Organization of Veterinary conferences, publication of Veterinary Journal and establishment of information system are required for continuing postgraduate veterinary education.

(4) School Facilities

Development of Veterinary Library and Animal Accommodation are also required. It will take a long time to collect a sufficient number of back numbers of journals. Problems related to the animal accommodation will be tackled as time progresses.

(5) Equipment

Equipment for education purpose will be satisfactory by 1992. There is at present no special equipment for the postgraduate programme and research purpose. If possible, equipment must be supplied during the construction of Research Centre building.

(Refer - Appendix - 42)

(6) Staffing

According to the master plan at least 70% of academic staff should be Zambians. Consequently at least 22 Zambian academic staff must be in the school of Veterinary Medicine. 22 Zambian academic staff could be produced by the year 2002 according to the projection based on present situation that is why we have to develop MS/Ph.D course work in the School as soon as possible.

The supervisor of a postgraduate programme must be Senior Lecturer level or above. It is likely that the first Zambian academic staff to reach this level will be only in 1996. Thus JICA experts will be of great use during the next years.

This is the background to the official request for the dispatch of JICA experts.

d. Difference between Phase I and Phase II.

The objectives of phase I is the Production of Zambian Veterinarian through the undergraduate programme, JICA Experts had no counterparts for transfer^{of} professional knowledge and technique in Zambia.

The objective of phase II is the development of Zambian academic staff through the postgraduate programme, for the purpose of development of Zambian Veterinarian.

In phase I JICA experts have been dispatched to give lectures and practice for undergraduates and the curriculum, equipment, and teaching specimen have been developed simultaneously. The main targets of phase I will be accomplished by July 1992.

Development plans for phase II are explained in details in II 3. a. Objective of phase II is establishment of postgraduate programme. Two major programmes are including in postgraduate training. One is the training programme for the candidates for UNZA academic staff. The other is the special training programme for the Veterinarians who are working outside the University. Training programme will include refresher courses, advanced courses and special courses. These courses will be organized in small lecture rooms in the Research Centre. The importance of postgraduate programme is obvious because the School of Veterinary Medicine is only veterinary facility in Zambia.

e. Expected completion date of objectives - phase I and II Development plan.

Expected dates of establishment for each stage are anticipated and illustrated in appendix - 23

Undergraduate programme will be established in 1992.

Full course of postgraduate programme will be commenced just after the commissioning of Research Centre in 1994 and many research results will be published from 1995. Diagnostic laboratory will be useful as technical advisor for Zambian farmer after the establishment of the Research Centre.

Zambianization of academic staff is the last completion date in these development plans. It takes at least eight(8) years from graduation to get to a position of academic staff (SDF: two (2) years, MS course: two (2) years, PhD course: four (4) years). This is a clear reason why long term vision is important for education

(Ref. Appendix - 23)

III Plan of Veterinary Research Centre (proposed name:) Zambian Research Centre for Animal Disease in the Tropics.

1. Background for Animal Disease in Tropics: ZRCADT)

From the view point of development of African academic staff and development of the livestock industry, development of post-graduate programme has been proposed several times at many kinds of meeting. At the liaison meeting of Deans for Veterinary Schools in SADCC (Southern African Development Co-ordination Conference) in 1989, the concrete plans of postgraduate programmes were discussed in detail and it was considered a high priority for the Southern African Region. At the School of Veterinary Medicine in UNZA, all facilities have been reviewed based on the postgraduate programme because the first Masters course will be commenced in 1991 academic year. Lack of space and shortage of equipment for postgraduate programme were reported as the result of the investigation.

At first, extension of education building was proposed but this proposal has been withdrawn from the view point of both public health and construction work, and opinions were very strong in the School that pathogens and infected carcasses should not be in the education building. In addition, it was reported by an architect that there are too many problems to be solved in case of construction of an extension building.

Finally a small facility of a Research Centre was proposed as the minimum facility for the postgraduate programme.

The function, management and basic concepts for the Research Centre were discussed and blue prints of the laboratories and a proposed list of equipment have been drafted.

2. The function of Research Centre

The function of the research centre is the development of postgraduate programme to an international level.

For the purpose of effective management of research work in the postgraduate programme, special facilities for experimental animals and a reference retrieval room are included in the Research Centre. A small lecture room with audio-visual materials is attached to

the laboratory section because research results must be communicated to personnel involved in the Zambian livestock industry.

The main purpose of the Veterinary Diagnostic Laboratory is the development of diagnostic methodology and collection of specimen for students practical and research work. The function and purpose of the diagnostic laboratory is completely different from that of the Central Veterinary Research Institutes in Balmoral, which carries out routine investigation. Any improvement in diagnostic technique will however be discussed with Central Veterinary Research Institute.

3. Management plan for the Research Centre

a. Organisation chart (draft)

Organization chart for Veterinary School and Research Centre are shown in appendix - 24.

According to the proposed organization, Director of Research Centre must report to the Dean of the School of Veterinary Medicine.

JICA Team leader can assist the Dean and JICA Co-ordinator will be an adviser from the standing point of donor.

(Ref. Appendix - 24)

b. Postgraduate programme (draft)

Development plan for MS and PhD course is summarized in Appendix - 25 and 26.

The Masters programme course work will move to the Research Centre just after the commissioning of the building.

All MS course work will be conducted in the research centre and also major part of PhD course work. This will result in a steady production of highly trained manpower.

(Ref. Appendix - 25, 26)

c. Research plan and Research Management System: Research plans (1991 - 1997) are tabled in Appendix - 27, and research management system is proposed in Appendix - 28

Research plan is the list of 29 research projects proposed by Disease Control and Paraclinical Studies.

According to this proposal, several major projects (23/29) are going to start only after the receiving of suitable research equipment. The number of research projects in public health and wild animals will be increased in future.

(Appendix - 27, 28)

d. Special Training Programme for postgraduates outside University.

Special training courses for postgraduates, Veterinary Assistants and Veterinary Officers is a social service of the School of Veterinary Medicine, because our School is the only higher level veterinary institute in Zambia.

Refresher courses for postgraduates and Advanced courses for Veterinary Assistants will be conducted in the lecture rooms in the Research Centre.

(Ref - Appendix - 29)

e. Plan of Assignment and Recruitment for Research Centre:

Minimum requirements of researcher and technical staff are shown in appendix - 30. The detailed plans of assignment are tabled in appendix - 31 and - 32.

Recruitment plan for Non-JICA staff has been prepared on the assumption that the official request for JICA dispatch is agreed by the Japanese Government (Appendix - 47).

Recruitment of technical staff must be managed two years ^{for} prior to the commissioning of the Centre to allow their preliminary training.

(Ref. Appendix - 30, 31, 32, 47)

f. Plan of Assignment for JICA Experts and JOCV Member

JICA Experts will be essential to setting up of the Research Centre.

Plan of assignment for JICA long term and short term experts based on the postgraduate programme is appendix - 34.

JICA Long term experts will be the first supervisors for pathology, parasitology and microbiology. Short term experts will be recruited as the short term supervisors for MS and PhD research work.

Two JOCV members will be assigned in P.M. room and diagnostic laboratory, and the other JOCV member will be appointed as Lecturer III in the School of Veterinary Medicine.

(Ref. Appendix - 34, 35)

- g. JICA Long Term Expert - Principle of shift of role from School to Research Centre

This has been agreed with UNZA.

In principle the work of JICA experts will shift from undergraduate programme to postgraduate programme during phase II.

The proposal is illustrated in appendix - 36.

According to this concept a JICA expert will move from the School to the Research Centre within twelve (12) months after the arrival of his trained Zambian counterpart (PhD level). Plan of assignment for JICA expert Appendix - 34 has been decided based on this concept.

Number of JICA experts in the School will be reduced year by year and the number of JICA experts in the Research Centre will be increased year by year (appendix - 37).

JICA team leader may move to the Research Centre as soon as possible and both JICA Co-ordinator and Electrical Engineer will stay in the School building.

(Ref. Appendix - 34,
36, 37)

h. Budget plan

The scale of the Research Centre is one third of the School in staff number and total space.

Accordingly, 35% of additional general expenditure must be budgeted from 1993.

Additional research fund must be managed for Research Centre.

i. Equipment for postgraduate programme

Appendix - 38 is a proposed list of equipment for Research Centre. Major pieces of equipments are listed as follows, the electronmicroscope is required for various fields because there is no equipment existing in Zambia.

- 1) Electronmicroscope
- 2) Biohazard facilities
- 3) Controllable climate room
- 4) Incinerator
- 5) Telex Facsimile, computer
- 6) Information retrieval system

Cost estimation is 5.2 million US dollar (720 million yen)

4. Building and Related Facilities of Research Centre.

a. Main Building and Insectory

Research Centre consists of main building and small separate insectory.

The Main building is an independent building to protect students and staff in the School from secondary infection from infectious material. For the purpose of collaboration of academic staff and researchers, the main building must be close to the School.

Insectory is attached to the main building.

Main building is two stories high.

Space for the building has been already prepared by UNZA

Appendix - 40 is one of the ideas.

Total of floor space for main building and insectory is 3,856m². This is approximately 1/3 of the School building and a rough cost estimation is 7.9 million US dollars (1100 million yen). Development plans for the Research Centre are made based that it will open in 1994 just ten (10) years after the construction of the Veterinary School.

b. Facilities Related to the Research Centre

- 1) Accommodation for technical staff
- 2) Accommodation for research visitors.
- 3) Experimental infection facilities for large animals
- 4) Experimental farm
- 5) Paddock for wild animals
- 6) Experimental pond for fresh water fish and crocodiles
- 7) Facilities for radio-isotope use.

5. Basic Concept of Layout

This layout is based on the minimum facilities and equipment for a satisfactory postgraduate programme and research work. The plan of main building and insectory are shown in appendix - 43, 44, 45.

a. Research Laboratory

Research laboratory is restricted to the area of infectious diseases, where most of MS and PhD course work is planned.

The Space in these laboratories must be wider than standard because postgraduates, technical staff and visiting researchers will be staying in the laboratory.

Electron microscope facilities are attached to the pathology laboratory and radio-isotope facilities are attached to the biochemistry laboratory, from the stand-point of research function. Blood bank and biohazard facilities are planned next to the virology laboratory.

b. Post-mortem Room and Incinerator

Location of P.M. room is one corner of ground floor and large incinerator is attached.

The level of the floor is same level of lorry back.

Electric hoist is established from the gate to the inside of the large cold room and is six (6) metres in height.

Histopathology laboratory and pathology museum are attached to P.M. room.

c. Animal Accommodation

Breeding facility for experimental animals (mouse, rat guinea-pigs and rabbits), inoculation room and infected animal room are part of the building.

These facilities are next to washing room and incinerator.

d. Diagnostic Laboratory

Main function of this area is for rapid inspection of the samples from farms and clinics. These facilities have been moved from the School to the Research Centre from the public health view point.

e. Veterinary Extension

Information retrieval system and data bank system are essential for postgraduate programme and research work.

The number of persons accommodated in the lecture room is fifty (50) and maximum number for seminar room is ten(10).

f. Parking space

Parking space for 10 cars is accommodated in the courtyard of the main building to maintain security, particularly for working in the evening.

IV. CONTENTS OF OFFICIAL REQUEST OF TECHNICAL COOPERATION AND GRANT AID FOR PHASE II DEVELOPMENT PLAN

1. Summary

The objectives of phase I are the development and establishment of undergraduate programme for Zambian Veterinarians.

According to the records, Technical Co-operation has been agreed after the decision of Grant Aid, namely dispatch of JICA experts and JOCV members has been decided as the follow up support of the facilities of Veterinary School. The intentions of this request for phase II plan are completely different to that of phase I.

Technical cooperation for postgraduate programme is the main request in phase II and Grant Aid has been requested as essential support for postgraduate education.

2. Official request for Technical Cooperation

a. Dispatch of JICA Long Term Experts

For the purpose of future postgraduate training programme and the management of diagnostic laboratory, the dispatch of JICA long term experts is requested. Major job description in the Research Centre is Supervisor of research laboratories and postgraduate programme for MS/PhD students in pathology, parasitology and microbiology and related areas. (Ref. Appendix - 34). PhD holder is a necessary requirement and the supervisor for a research laboratory should have more than ten (10) years experience in this field. In addition, it is requested that extension of contract for JICA long term experts from two years to four(4) or five(5) years, is necessary for supervision of PhD Research programme. Total number of JICA experts is 9-10 including Electrical Engineer and JICA Co-ordinator.

(Ref. Appendix - 47)

b. Official request for JICA Short Term Experts

According to the development plan for phase II,

the role of the short term experts is explained as an advisor or supervisor for PhD course work and part time lecturer for MS/PhD course work.

In the past, all academic staff have to stay 3-4 years in foreign countries for their MS/PhD course because there were no facilities or training programme in the School of Veterinary Medicine. This is one of the reasons for shortage of academic staff.

In the phase II, the major part of the postgraduate programme will be carried out in the School.

We would like to introduce sandwich programmes for the Ph.D. students. In the first stage the student will be in Japan for 3-6 months, to decide his/her research project and develop methodology with his/her supervisor. Then the major part of research work will be carried out in UNZA, for 2-3 years. During this time a JICA Short Term Expert will visit to the Research Centre as the supervisor. Finally, compilation work will be arranged under the supervisor in Japan for 6-9 months and the thesis will be written.

c. Official Request for JOCV

5 JOCV member are requested, three(3) members will be assigned to the School of Veterinary Medicine as lecturer III and two(2) members will be assigned in the diagnostic laboratory and P.M. room respectively.

d. Official request for Monbusho Scholarship (Ministry of Education in Japan) and JICA scholarship.

Up to now, three academic staff including SDF have been awarded Monbusho scholarships and nine(9) technical staff have received JICA scholarships.

These training programmes were very valuable in the first stage of the School.

In phase II, Monbusho scholarship will be introduced as a postgraduate training programme for PhD and training programme as explained above (b)

(Ref. Attachment 34-36, 37)

- e. Involvement of the JICA Long Term Experts in the MS course work will be carried out in the School prior to construction of the Research Centre.

JICA Long Term Experts will be transferred from the School to the research centre after the commissioning (Appendix - 36) and all long term experts will be assigned in the Research Centre at the end of phase II except JICA Co-ordinator and Electrical Engineer.

3. Official Request for Grant Aid

Twelve projects are under discussion in phase II.

The small Research Centre and accommodation for visiting researcher are requested by Zambian government as the major parts of phase II.

The purpose and contents of the Research Centre are as follows. The function and management plan are described in Chapter 3.

a. Veterinary Research Centre

It is the purpose of the research centre to establish the facilities and equipment for the postgraduate programme in veterinary medicine, this will contribute greatly to development of expertise to improve livestock production. According to the development plan, the building of research centre is the minimum requirement for postgraduate programme. Research laboratory, diagnostic laboratory, post-mortem room and small lecture room (appendix 43, 44) are included in the main building (3.706m²) and insectory (150m²) is attached in main building.

Main building has two stories and the insectory is one storied house (appendix - 45).

Total space of the research centre is $3,856\text{m}^2$ that is 1/3 of present building ($12,909\text{m}^2$).

Development plan was decided based on following assumption (Appendix-42)

- 1) The start of construction = August 1992
- 2) The completion of construction = December 1993
- 3) Commissioning of Research Centre = July 1994

b. Accommodation of Visiting Researcher

Accommodation for ten(10) researchers is requested as an additional request for the research centre.

For the purpose of investigation on infected animals and insects, researchers will have to work late in the evening and thus accommodation for researchers attached to the research centre is very important.

c. Equipment supply for postgraduate programme:

Special equipment for postgraduate programme and research works have not been supplied up to now, for example an Electron microscope.

Electron microscopes (E.M.) are strongly requested by UNZA and Zambian government. Two types of E.M. (transmission type and scanning type) are requested by every field of Veterinary Medicine.

In the past, E.M. has been requested by many disciplines including Veterinary medicine, human medicine and natural sciences but one has not yet been obtained.

The research work on infectious pathogens and parasites must be investigated in Zambia because it is very difficult to carry these materials to other countries. This is the background of the official requirement for research equipment.

According to the development plan, major pieces of research equipment must be obtained by the end of 1993, because it would be good to commence research work just after the commissioning, expected date is July 1994.

4. Importance of continuous Technical Cooperation and Grant Aid for phase II plan

An education project is often compared to a ladder because it is necessary to develop step by step over a long period. On the other side, an education project is essential as the third generation of international cooperation. Supply of hard materials (e.g. buildings, dams, roads) is considered the first generation of cooperation; the supply of advisors (JICA Experts) is introduced as the second generation of cooperation. In the third generation, counterparts are trained by the counterparts of JICA experts. The fourth generation reaches "Self-sufficiency". It is a special feature of an education project that continuous long term support is essential, if assistance is stopped before a project is independent it is very difficult to recover. On the other hand, independence may be slowed down if the support is continued for too long a time.

The point of independence for the School of Veterinary Medicine is the time when eight Zambian academic staff are assigned above senior lecturer out of 32 Zambian staff (70% of all academic staff). This timing is anticipated in 2005.

For the development of Zambian academic staff it is essential to dispatch JICA long term experts for 4-5 years at a time.

We are looking forward to phase II and future development with technical cooperation and grant aid.

Imagine in the Zambian land, a steam locomotive is running at full speed for the next station. Name of next railway station is "Zambianization" where there is high land. The railway forward is uphill all the way to this station.

Consider the locomotive to be the facilities of the School of Veterinary Medicine and the coals as equipment. The total of 99 JICA experts are the railway from the starting point to the station.

A railway of very high quality is necessary, that is the real meaning of the official request for dispatch of JICA experts in

phase II. Small locomotive and coal in high quality are required additionally to push up the slope from here to the next station, that is the official requests for grant aid and research equipment supply.

Construction of railway is underway to further on from "Zambianization - station" using locally made rail.

Railway in further slope (phase II) must connect to previous rail (phase I).

If not the locomotive will run off the rail certainly because the locomotive (education project) cannot stop immediately.

It is very hard to put this locomotive back on the rail again.

We do not want to see a rusty locomotive in Zambia's beautiful land.

V. Development plan of facilities to be managed by UNZA in phase II

Twelve(12) subjects for phase II projects have been proposed by the School of Veterinary Medicine. Two(2) projects out of the twelve(12) projects have been proposed to Japanese Government as the core part of phase II.

The other projects as follows are under discussion to be managed by UNZA.

1. New Facilities and remodelling
- a. Facilities related to postgraduate programme
 - 1) Experimental farm including poultry farm and piggery
 - 2) Accommodation for infected large animals
 - 3) Large animal ward
 - 4) Paddock for animal
 - 5) Experimental pond for fresh water fish and crocodiles

Land space for the experimental farm (500,000m²) has been already arranged in February 1990 by UNZA for the School of Veterinary

Medicine. The land space is about 15km from Lusaka campus. It is proposed that accommodation for infected animals and large animal ward will be available using the construction section of UNZA.

(Ref. Appendix - 16)

b. Facilities Related to undergraduate programme

- 1) Accommodation for SDF
- 2) Kiosk
- 3) Fence for the School and student hostel
- 4) Extension of small animal clinic
- 5) Remodelling of workshop and store room

The blue-prints of (1), (2), (3) have been prepared and construction of (4), (5) can be carried out by the construction section of UNZA

2. Budget

All general expenditure for the research centre and additional facilities will be budgeted by UNZA

It is anticipated that general expenditure for research centre is 35% of the budget of the School of Veterinary Medicine.

3. Staffing

Assignment plan for non-JICA staff is shown in appendix - 33,

All remuneration will be managed by UNZA.

LISTS OF APPENDIX

<u>APPENDIX NO.</u>	<u>TITLE OF APPENDIX</u>
1.	Student intake 1983-89
2.	Departmental curriculum
3.	Proposed training programme for Veterinary students and postgraduates.
4.	Present staffing levels - 1990 October.
5.	Number of graduates.
6.	Latest information for graduates (1988, 1989) and their destination.
7.	Education programme - curriculum and unit.
8.	Master of Veterinary Medicine - Course contents.
9.	University annual research grant to the school.
10.	Staffing - UNZA Vet. School (1984-1989).
11.	Lists of JICA experts (10/1990).
12.	Lists of JOCV member (10/1990).
13.	Trend of budgeted expenditure for all academic school from 1984 to 1990 and projections for 1991 and 1992.
14.	Academic staff on further training 1989-1990.
15.	Technical staff on further training 1989-1990.
16.	The mid- and long term future planning on the development of The School of Veterinary Medicine, University of Zambia.
17.	The development plan of the School of Veterinary Medicine, University of Zambia.
18.	Development plan - Indication and target.
19.	Development plan - Number of student (1991-1997).
20.	Development plan - Number of postgraduates (1991-1997).
21.	Development plan - Number of Zambian academic staff (1991-1997).
22.	UNZA Veterinary education project - objectives w/target phase I/II.
23.	Expected date of establishment.
24.	Development plan for the School of Veterinary Medicine - organisation chart. (draft No. 1).
25.	Establishment plan of master's course.

.....2"

26. Establish plan of PhD course.
27. Development plan - research project (1991-1997).
28. Organization structure of Veterinary research centre.
29. Development plan - Training programme.
30. Development Plan - Veterinary research centre minimum requirement of staff.
31. Development plan - Veterinary research centre staff positioning (1997) part 1.
32. Staff Positioning (1997) Part II.
33. Recruit plan for Veterinary research Centre.
34. Development plan - JICA experts involvement . (1991-97)
35. Development plan - JOCV involvement (1991-97).
36. JICA expert - Principle of shifting.
37. Development plan - JICA EXPERT IN THE SCHOOL. (1991-97)
38. list of equipment to be procured through Japanese grant aid for Veterinary research.
39. Rough sketch of Veterinary research centre.
40. Veterinary research centre-positioning.
41. Proposed floor space for each laboratory office and facility.
42. Development plan - overall construction programme.
43. Blue print of Veterinary research center.
44. Outline of Zambian research centre for Animal Disease in Tropics.
45. Layout of post mortem room.
46. Layout of insectory.
47. Development plan - JICA expert assignment plan (1991-1997).

STUDENT INTAKE 1983 - 09

Student	1983	1984	1985	1986	1987	1988	1989
Second year	12	13	20	23	20	27	33
Third year	-	12	13	22	20	14	20
Fourth year	-	-	12	15	19	18	19
Fifth year	-	-	-	13	15	19	14
Sixth year	-	-	-	-	13	15	18
Total Number	12	25	45	70	84	93	104

Sept. 1990

ORIGINAL PLAN - DEPARTMENTAL CURRICULUM

Department in Veterinary School	(Target student)
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Department of Bio-Medical Sciences	(2 - 3 year student)
Anatomy	
Physiology	
Biochemistry	
Pharmacology	

Department of Paraclinical Studies	(4th year Student)
Pathology	
Microbiology	
Parasitology	

Department of Disease Control	(5th Year student)
Epizootiology	
Preventive Medicine or Public Health	
Food Hygiene	
Environmental Science or Wild Life Disease	

Department of Clinical Studies	(5th Year student)
Animal Reproduction and Veterianry Obstetrics	
Artificial Insemination and Animal Breeding	
Medicine	
Surgery and X-Ray Radiation	

PROPOSED TRAINING PROGRAMME FOR
VETERINARY STUDENTS AND POSTGRADUATES

Courses	Years		Number of		Purpose
	required		students		
			Total		
Pre-Veterinary	1	40	40		Preparation for Veterinary course
Veterinary	5	30	150		Veterinary training
Master	2	8	16		Training of teachers and researchers
Doctorate	3	4	12		Training of teachers and researchers
Total			218		

SAMORA MACHEL
SCHOOL OF VETERINARY MEDICINE

PRESENT STAFFING LEVELS 1990 OCTOBER

	Original plan	In Post
1. Dean	1	
2. Professors) 15) 8'
3. Associate Professors		
4. Lecturers	15	21 (5z)
5. Pharmacist	1	1 (z)
6. Radiologist	1	1 (z)
7. C. Technicians	5	5 (z)
8. S. Technicians	10	4 (z)
9. Technicians	15	25 (z)
10. Teaching Assistants	-	8 (z)
11. Secretaries	9	9 (z)
12. Administrative Officers	2	2 (z)
13. Miscellaneous (Cleaners, Plotmen, Messenger, Duplicator & Drivers)	36	20 (z)
TOTAL	109	103

(Appendix -5)

Number of graduates - school of Veterinary Medicine

Academic Year	Male	Female	Total
1987/88	11	2	13
1988/89	13	2	15
1989/90	17	1	18
Total	41	5	46

31st October 1990

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

Latest Information for Graduates (1988) and their Destination

	NAME	TITLE & LOCATION	EMPLOYER
1	DIBALO G. CHIBUYE	District Vet. Officer, Box 64, Kalabo	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
2	BIHAIYAT, IQBAL M.	S. D. F. (Ph. D. study leave in Japan)	UNZA, School of Vet. Medicine
3	GRANT, JOHN S. D.	(Not known, he is in Botswana)	Botswana
4	HAANGOMA GIVEN	(Transferred, not known at present)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
5	MOONGA ELDER	Vet. Officer, Kasama (NP)	Zambia Agric. Dev. Ltd. Dairy (Private)
6	MULEYA, JANET I.	S. D. F. Dept of Clinical Studies, Lusaka	UNZA, School of Vet. Medicine
7	MUNEBWE, FINNY	Vet. Officer, Monze (SP)	Zambia Agric. Dev. Ltd Ranch
8	MWEENE AARON S.	S. D. F. Dept. of Clinical Studies, Lusaka	UNZA, School of Vet. Medicine
9	NGOMA, MICHEAL	S. D. F. Dept. of Disease Control, Lusaka	UNZA, School of Vet. Medicine
10	PATEL OSMAN	S. D. F. (Ph. D. study leave in U. K.)	UNZA, School of Vet. Medicine
11	SICHALA LUO	(not known)	(not known)
12	SONGOLO ANNA CHIBULU	District Vet. Officer, Lusaka	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
13	SYACHADA MUKONKA	District Vet. Officer, Mbala, (NP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE
 Latest Information for Graduates (1989) and their Destination

	NAME	TITLE & LOCATION	EMPLOYER
1	DWALYA, KENNETH	Vet. Surgeon (out of the country)	Private
2	CHITAMBALA, EMMANUEL	District Vet. Officer, Kalomo (SP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
3	CHOONGO, KENNEDY	Staff Development Fellow, Education.	UNZA School of Vet. Medicine
4	JEMBE, JOSIAS	District Vet. Officer, Isoka.	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
5	KIGALI GLADYS	Vet Surgeon, Hybrid Poultry Farm, Lusaka	Hybrid Poultry Farm (Private)
6	MUBANGA, JOSEPH	District Vet. Officer, Namwala (SP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
7	MUIONGO, INAMBAO	District Vet. Officer, Senanga (WP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
8	MULENGA, P.M.	Vet. Research Officer, Mongu (WP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
9	NOWA, C	District Vet. Officer, Mansa. (NP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
10	MULUNBA, MISHECK	District Vet. Officer, Kitwe (CP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
11	PHIRI, W.A.	Private Practice (Showgrounds) Lusaka	Private
12	SIAME, C.M.	District Vet. Officer, Mbala (NP)	M/O Agriculture, Vet. and Tsetse Control Dept. (GRZ)
13	SITALI, J.L.	District Vet. Officer, Mongu. (WP)	M/O, Agriculture, Vet. and Tsetse Control Dept. (GRZ)
14	SYAKALIMA, S.M.	Vet. Surgeon, Lendor Durton, Chisamba	UNZA School of Vet. Medicine
15	SAIRA, Y.	Private Practice, Mazabuka	Private

EDUCATION PROGRAMME - THE SCHOOL OF VETERINARY MEDICINECURRICULUM AND UNIT

<u>Year</u>	<u>Course No.</u>	<u>Subject Matter</u>	<u>Unit</u>
1	BZ 110	Introductory Biology	1
	C 110	Introductory Chemistry	1
	M 110	Introduction to Mathematics	1
	P 110	Introductory Physics	1
2	YMB 210	Veterinary Anatomy & Physiology	1
	YMB 211	Veterinary Embryology	½
	CA 210	Organic Chemistry & Biochemistry	1
	AGG 311	Probability & Statistical analysis	½
	AGA 332	Animal genetics and breeding	½
	AGC 342	Forage Crops Pasture and Range Management	½
3	YMB 310	Veterinary Anatomy	1
	YMB 315	Veterinary Histology	½
	YMB 320	Veterinary Physiology	1
	YMB 330	Veterinary Biochemistry	1
	AGA 320	Basic and Applied Animal Nutrition	1
	YMB 303	Farm Practicals	½
4	YMP 410	Veterinary Pathology	1
	YMD 425	Veterinary Pharmacology	½
	YMP 425	Veterinary Microbiology	1
	YMP 440	Veterinary Parasitology	1
	AGA 450	Animal Production	1
	YMP 403	Veterinary Laboratory Practicals	½
5	YMD 510	Special and Preventive Medicine	1
	YMC 510	Clinical Veterinary Medicine I	1
	YMD 515	Veterinary Clinical Pathology I	½
	YMD 511	Veterinary Epidemiology & Economics	½
	YMC 520	Veterinary Surgery I	1
	YMC 535	Veterinary Reproduction and Obstetrics I	½
	YMC 503	Veterinary Clinical Practicals	½
6	YMD 610	Veterinary Medicine II	1
	YMD 630	Veterinary Public Health	1
	YMD 612	Veterinary Extension & Jurisprudence	½
	YMD 615	Veterinary Clinical Pathology II	½
	YMC 620	Veterinary Surgery II	1
	YMC 635	Veterinary Reproduction and Obstetrics II	½

M. Vet. Med. Diagnostic Veterinary Medicine

Part I Course Content

1. Diagnostic Pathology VMM 710

Collection, preservation and transport of specimens, necropsy and laboratory diagnostic techniques. Advanced histopathology, haematology, cytology and clinical chemistry. Pathology and clinical pathology of tropical diseases of livestock.

2. Clinical Microbiology VMM 720

Systematic bacteriology, virology and mycology. The aetiological and serological diagnosis of major livestock diseases. Isolation and identification of pathogens. Vaccine production.

3. Clinical Parasitology VMM 730

Entomology and protozoology of major parasites of livestock in Africa, particularly trypanosomes and tickborne pathogens. Physiology, immunology and chemotherapy of common helminths and helminth zoonoses.

4. Scientific Methodology VMM 790

The searching of and use of scientific literature. Scientific writing. The collection and processing of data, including statistical methods. The use of computers for word processing and data handling.

Diagnostic Pathology YMM 710

a) Clinical Pathology

Collection, preservation and shipment of specimens. Advances in haematology, cytology, biopsy techniques, clinical chemistry.

b) Necropsy

Instruction and practice in the diagnosis of animal disease by means of necropsy and related laboratory techniques. Emphasis will be placed on correlation and interpretation of gross and microscopic lesions and results of other tests. Lesion interpretation and correlation with aetiology and pathogenesis of disease. The use of instruments in necropsy procedures. Forensic pathology.

c) Histopathology

An advanced and comprehensive study of histopathological aspects of systematic and special pathology including interpretation of electronmicrographs. Selected aspects such as digestive system, cardio-pulmonary and urogenital system pathology will be studied. Pathology of infective, toxic, nutritional deficiency, neuropathological and oncological diseases of domestic animals with an emphasis on ruminants.

d) Tropical diseases

Lectures on common tropical diseases of domestic animals with special reference to pathology and clinical pathology leading to diagnosis.

Lecture Hours

Lectures	: 60 hours @ 2 hours per week
Practicals	: 90 hours @ 3 hours per week
Seminars	: 10 hours @ 1 hour each

Clinical Microbiology VMM 730

a) Bacteriology and mycology

Advances in bacterial, rickettsial, mycoplasmal and fungal classification. Ultrastructure of bacteria. Mechanisms of pathogenesis. Bacterial genetics in relation to metabolism and pathogenesis.

Identification of aetiological agents of animal diseases important to the region. The serological typing of bacteria for example, Salmonella serovars and Escherichia coli. The isolation of bacterial antigens, eg. streptococcal antigens. Bacterial exotoxins and endotoxins and related tests. Bacterial plasmids and drug resistance: Drug sensitivity testing.

The use of immuno-fluorescent techniques, antibody separation and purification. ELISA techniques for the identification of bacterial antigens. Novel approaches to bacterial vaccines.

b) Virology

The study of viruses in tissue and cell culture and their propagation. Titration and neutralisation of viruses. Isolation and identification of viruses from clinical material. The ultrastructure of viruses. The passage of viruses in different cell culture systems. Vaccine production including modern methods such as the use of recombinant DNA technology.

The use of immunological tests for the diagnosis of viral diseases. Recent developments for rapid viral antigen detection, including adaptations of the ELISA technique such as the Dot-immunobinding assay.

Lecture Hours

Lectures	: 60 hours @ 2 hours per week
Practicals	: 90 hours @ 4-5 hours per week
Seminars	: 10 hours @ 1 hour each

Clinical Parasitology .VMM.740 .

a) Entomology

Identification of arthropods of veterinary importance with special emphasis on Ixodidae and Glossinidae with reference to: taxonomy, biochemistry, physiology, morphology, host immune responses, host-parasite-vector interactions, bionomics, and ecology. Practicals in the collection, identification, dissection and rearing techniques for Ixodidae and Glossinidae will be conducted.

b) Protozoology

Emphasis will mainly be on economically important diseases in the region such as trypanosomiasis, tick-borne diseases and coccidiosis. Other diseases such as toxoplasmosis also important in public health will be covered. Emphasis will be placed on biochemistry, physiology, pathogenicity and epidemiology of these parasites, together with clinical aspects and control strategies. Modern serological diagnostic methods, for parasite identification. Practicals will be conducted in field and laboratory techniques including parasite isolation and cloning.

c) Helminthology

Identification of helminths of economic and zoonotic importance with particular reference to parasite ultrastructure and metabolism, drug resistance and host immunity, and their implications in parasite control. Practical sessions will involve field surveys and collection techniques, immunological and other diagnostic methods.

Lecture Hours

Lectures	: 60 hours @ 2 hours per week
Practicals	: 90 hours @ 3 hours per week
Seminars	: 10 hours @ 1 hour each

Scientific Methodology .VMM.790 .

a) Scientific Communication

Library use, literature searches. Hypothesis formation. Writing of research proposals and protocols. Writing of scientific reviews and papers. Oral and other presentations, lecture techniques and use of audio-visual aids.

b) Statistics

Experimental design. Data collection and collation. Data processing. Statistical methods such as probability, variance, regression analyses, population distribution. Data presentation.

c) Computer use

Introduction, word processing, databases, data handling.

Lecture Hours

Lectures : 40 hours @ 3 hours per week
Practicals : 40 hours @ 4 hours per week

Reading Material

1. "Statistical Methods" by Snedecor, G.W. & Cochran, W.G. (1967) Iowa State University Press, Iowa.
2. "Skills in Advanced Biology, 1: Dealing with Data" by Garvin, J.W. (1986). Stanley Thornes (Publishers) Ltd., Cheltenham, UK.
3. "Writing Scientific Papers in English" by O'Connor, M. & Woodford, F.P. (1979) Pitman Medical, UK.
4. "Writing research Papers: An Easy Guide for Non-Native-English Speakers" by Stapleton, P. (1987). Australian Centre for International Agricultural Research, Canberra.
5. Journals & Periodicals eg. Index Veterinarius, Veterinary Bulletin.
6. Scientific databases.

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE
UNIVERSITY ANNUAL RESEARCH GRANT TO THE SCHOOL

<u>YEAR</u>	<u>AMOUNT IN KWACHA</u>
1984	5,500
1985	10,000
1986	20,000
1987	40,000
1988	35,000
1989	50,000
1990	117,250

At present there are several research projects funded by outside agencies, including IAEA, HEDCO, Belgian Government, ACIAR, with requests to the Norwegian Government

Projected Annual Research Grant to the School.

<u>Year</u>	<u>Amount in Kwacha</u>
1991	150,000
1992	200,000
1993	270,000
1994	360,000
1995	500,000
1996	670,000
1997	900,000

C.E. Lovelace
ASSOCIATE PROFESSOR
ACTING DEAN
SCHOOL OF VETERINARY MEDICINE

STAFFING - URNA VET. SCHOOL (1984-1989)

Academic Year	1984/85		1985/86		1986/87		1987/88		1988/89	
	Establishment	In Post	Est.	In Post	Est.	In Post	Est.	In Post	Est.	In Post
1. Dean	1	1	1	1	1	1	1	1	1	1
2. Professors			6	7	4	2	4	1	1	1
3. Assoc. Professors	1	1			11	3	11	3	11	4
4. Lecturers	2	2	10	15	12	18	18	23	23	20
5. Teaching Assistants				2	3	6	6	6	6	10
6. C. Technicians	1	1	5	5	1	2	5	5	5	4
7. S. Technicians	1	1	9	9	5	5	9	9	9	5
8. Pharmacist			1	1		1	1	1	1	1
9. Radiologist			1	1		1	1	1	1	1
10. Technicians	5	5	37	37	20	37	46	37	53	39
11. Secretaries	3	3	9	9	7	8	9	8	9	9
12. Administrative Officers			2	2	1	2	2	2	2	2
13. Miscellaneous	1	1	7	19	17	15	19	15	25	20
TOTAL		15	84	306	70	102	126	102	144	115

30 AUG. 1990

- N.B. : (a) JICA long or short term experts are not included in the schedule.
 (b) British Council and WHO short term (visiting) personnel are excluded in the schedule.
 (c) Teaching Assistants include: House Surprons, SDFs, and Japanese Volunteers.
 (d) Miscellaneous include: Drivers, Dupliator Operators, Messengers, Cleaners and plotean/woman.
 (e) There is no adequate record for the year 1984/85.

THE UNIVERSITY OF ZAMBIA VETERINARY EDUCATION PROJECT
JICA/ ~~UN~~ STAFF LIST (No. 1)

JICA EXPERT	RANK/TITLE (Profession)	CONTACT
Prof. Y. Tsutsumi	Project Leader Head of Paraclinical Studies Dept. Professor - DVM, Ph.D. (Parasitology/Protozoology)	1988. 07. 23-1991. 07. 22
Prof. G. Sato	Head of Disease Control Dept. Professor - DVM, Ph.D. (Public Health)	1988. 08. 21-1991. 08. 20
Prof. K. Matsukawa	Professor - DVM, Ph.D. (Veterinary Pathology)	1989. 12. 21-1990-12. 20
Prof. T. Kaji	Professor - DVM, Ph.D. (Veterinary Virology)	1990. 01. 14-1992. 01. 13
Dr. Y. Sato	Senior Lecturer - DVM (Veterinary Clinical Pathology)	1989. 07. 14-1991. 07. 13
Dr. H. Seki	Senior Lecturer - DVM, M.Sc. (Veterinary Parasitology/ Helminthology)	1990. 07. 22-1992. 07. 21
Dr. H. Madarame	Lecturer I - DVM, Ph.D. (Veterinary Pathology)	1990. 08. 12. -1991. 08. 11
Mr. M. Kadono	Senior Technician - Eng. Spec.	1989. 05. 13-1991. 05. 12
Mr. O. Kosugiwa	JICA Coordinator - D. Sc. Agric.	1989. 03. 27-1991. 03. 26

31st October, 1990

(Appendix- 12)

THE UNIVERSITY OF ZAMBIA VETERINARY EDUCATION PROJECT

JACV/XXV STAFF LIST (No. 2)

JACV VOLUNTEER	RANK/TITLE (Profession)	CONTRACT
Dr. M. Iida	Teaching Assistant - DVM (Veterinary Pathology)	1988.07.10-1991.01.09
Dr. S. Yumura	Teaching Assistant - DVM (Veterinary Parasitology)	1988.07.10-1991.07.09
Dr. S. Inoue	Teaching Assistant - DVM (Veterinary Virology)	1988.07.10-1991.07.09
Dr. A. Suzuki	Teaching Assistant - DVM (Veterinary Microbiology)	1988.07.10-1990.10.09
Dr. H. Kobayashi	Teaching Assistant - DVM (Small Animal Clinic)	1989.01.02-1991.01.01
Dr. H. Tsukibara	Teaching Assistant - DVM (Veterinary Pathology)	1990.01.01-1992.03.31
Dr. M. Okumura	Teaching Assistant - DVM (Veterinary Pathology)	1990.07.13-1992.07.12

31st October, 1990

TREND OF BUDGETED EXPENDITURE FOR ALL ACADEMIC SCHOOLS FROM 1984 TO 1990
AND PROJECTIONS FOR 1991 AND 1992

SCHOOL YEAR	EXPENDITURE TYPE	AGRIC.		EDUC.		ENG.		H.S.S.		LAW		MEDICINE		SCI.		MINES		VEH. MED.		
		K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
1984	Emoluments	979,658	1,291,101	1,189,600	942,175	348,515	2,096,922	2,363,013	607,317	232,968										
	Gen Expenses	198,300	112,490	162,800	168,150	45,750	220,170	725,020	78,750	31,050										
	TOTAL	1,177,958	1,403,591	1,372,400	1,110,325	394,265	2,319,092	3,108,033	686,067	264,018										
1985	Emoluments	753,281	1,031,338	1,119,179	953,547	365,152	1,571,315	2,259,768	575,895	506,680										
	Gen Expenses	128,400	63,000	72,500	75,700	26,200	170,300	303,363	47,440	46,000										
	TOTAL	881,681	1,094,338	1,191,679	1,029,047	391,352	1,741,615	2,563,131	623,335	554,680										
1986	Emoluments	1,275,595	1,892,472	2,076,401	1,590,692	520,076	3,468,464	4,157,926	1,046,167	992,950										
	Gen Expenses	189,700	72,400	76,000	76,300	32,000	191,100	350,625	58,740	85,800										
	TOTAL	1,465,295	1,964,872	2,154,401	1,166,992	552,076	3,659,564	4,508,551	1,104,907	1,078,750										
1987	Emoluments	2,213,531	1,956,948	2,166,026	1,944,652	626,572	3,780,597	4,227,471	1,345,554	1,966,513										
	Gen Expenses	110,486	139,891	197,287	69,406	33,979	158,139	607,157	109,135	280,534										
	TOTALS	2,324,017	2,096,839	2,363,313	2,014,058	660,551	3,938,736	4,834,628	1,454,689	2,247,047										
1988	Emoluments	1,977,140	2,495,004	2,828,446	2,422,542	823,716	5,232,409	5,216,065	1,537,499	2,541,315										
	Gen Expenses	386,748	243,879	313,601	167,254	113,099	363,056	1,185,207	282,703	632,997										
	TOTAL	2,363,888	2,738,883	3,142,247	2,589,796	936,815	5,595,465	6,401,272	1,820,202	3,174,310										
1989	Emoluments	2,647,438	3,787,121	5,410,418	3,562,776	1,129,231	6,589,361	8,216,418	2,571,506	3,467,201										
	Gen Expenses	408,763	235,390	1,027,166	332,489	143,515	297,674	2,229,881	253,339	434,213										
	TOTAL	3,056,201	4,022,511	6,437,584	3,895,265	1,272,746	6,887,035	10,446,299	2,824,845	3,901,414										
1990	Emoluments	3,306,890	5,104,714	7,167,012	4,751,427	1,476,636	9,090,800	11,166,483	3,286,779	4,426,370										
	Gen Expenses	1,078,750	1,123,300	3,758,390	1,024,300	975,100	1,770,496	8,288,428	1,911,620	978,040										
	TOTAL	4,385,640	6,228,014	10,945,402	5,775,727	2,454,016	10,861,296	19,454,911	5,198,399	5,404,410										
1991	Emoluments	4,378,521	5,550,362	9,511,043	6,208,221	1,931,128	12,028,045	14,748,526	4,353,106	5,924,746										
	Gen Expenses	1,402,375	2,955,030	4,291,581	1,331,590	1,267,734	2,301,645	10,774,956	2,485,106	1,271,452										
	TOTAL	5,780,896	8,505,392	13,802,624	7,539,811	3,196,862	14,329,690	25,523,482	6,838,212	7,196,198										
1992	Emoluments	5,851,865	6,862,443	12,428,210	8,155,134	2,542,662	15,950,557	19,542,500	5,761,763	7,940,626										
	Gen Expenses	1,833,086	1,898,377	5,579,053	1,731,067	1,648,055	2,992,142	14,007,444	3,230,639	1,652,886										
	TOTAL	7,674,951	10,780,820	18,007,263	9,886,201	4,190,717	18,942,699	33,549,944	9,012,402	9,593,512										

Staff on further training 1989-90

[ILRAD = International Laboratory for Research on Animal Diseases; ZIAH = Zambia Institute for Animal Health, Mazabuka; UNZA = University of Zambia; CTVM = Centre for Tropical Veterinary Medicine, Edinburgh]

B. Academic Staff and Staff Development Fellows

1. C. Amoo - MSc (Biochemistry) - UNZA, Zambia 1988-90
2. I. Bhaiyat - PhD (Pathology) - Japan 1990-93 (SDF)
3. H. Chitambo - PhD (Parasitology) - Japan 1989-92
4. Z. Mbawa - PhD (Biochemistry) - ILRAD, Kenya 1988-91 (SDF)
5. K. Mizinga - PhD (Physiology/Pharmacology) - USA 1987-91
6. R. Muimo - PhD (Parasitology) - UK 1989-92
7. J. Muleya - MYM (Surgery) - Scotland 1990-91 (SDF)
8. M. Musonda - PhD (Pathology) - Japan 1987-90
9. A. Mweene - MSc (Microbiology) - England 1990-91 (SDF)
10. H. Ngoma - MSc (Public Health) - CTVM, Scotland 1989-90 (SDF)
11. O. Patel - MYM (Theriogenology) - Scotland 1989-90 (SDF)
12. I. Phiri - Surgery - Japan 1990 (5 mths)
13. M. Schneebeli - MSc (Theriogenology) - UNZA (Part time) 1989-
14. E.T. Mwase - PhD (Entomology) - England 1989

C. Staff Development Fellows at UNZA

- K. Choongo - SDF, Biomedical Sciences.
J. Muleya - SDF, Clinical Studies
A. Mweene - SDF, Disease Control

Staff on further training 1989-90

[ILRAD = International Laboratory for Research on Animal Diseases; ZIAH = Zambia Institute for Animal Health, Mazabuka; UNZA = University of Zambia; CTVM = Centre for Tropical Veterinary Medicine, Edinburgh]

A: Technical Staff

1. W. Benkele - Chief Technician -
Cert. Virology - Japan 1988-89 (10 mths)
2. J. Daka - Senior Technician -
Cert. Instrumentation - Japan, 1989 (3 mths)
3. D. Chilinda - Technician -
Cert. Instrumentation - Japan 1990-91 (10 mths)
4. E. Chisala - Animal Attendant -
Cert. Vet. Asst. - ZIAH, Zambia 1989-90 (2 yrs)
5. S. Chisemba - Chief Technician -
Cert. Parasitology - Japan 1988 (10 mths)
6. A. Chota - Asst Technician -
Diploma - NRDC, Zambia 1988-91 (3 yrs)
7. F. Chitondo - Pharmacy Technician -
B. Pharm - Tanzania 1989 (3 yrs)
8. P. Hasebe - Technician -
Radio-immunoassay - Austria 1990 (3 mths)
9. C. Mubita - Technician -
HND, Microbiology, Scotland 1988-90 (2 yrs)
10. D. Mu'le - Asst. Technician -
Microbiology - Belgium 1990 (3 mths)
11. M. Mwape - Technician -
Elisa Techniques - ILRAD, Kenya 1989 (3 mths)
12. G. Mwanza - Technician -
Cert. Virology - Japan 1990-91 (10 mths)
13. J. Nyambe - Asst. Technician -
Cert. Vet. Asst. - ZIAH, Zambia 1989-91 (2 yrs)
14. Nyeleti - Lab. Assistant -
Veterinary Degree - USSR 1987-
15. I. Nyirenda - Technician -
Histochemistry - Norway 1990 (3 mths)
16. L. Nyirenda - Technician -
Cert. Radiology - Japan 1989 (3 mths)

- 17 P. Phiri - Senior Technician -
Parasitology - ILRAD, Kenya 1988-9 (3 mths)
18. B. Sakala - Technician -
HND, Applied Biology - Eire 1988-90 (2 yrs)
19. G. Sakala - Asst. Technician -
Anatomical techniques - Zimbabwe 1989 (10 wks)
20. M. Silumbwe - Technician -
Cert. Pathology - Japan 1989-90 (10 mths)
21. W. Ulaya - Senior Technician -
Cert. Microbiology - Japan 1990-91 (10 mths)
22. M. Mubiana - Senior Technician
Cert. Clinical Diagnosis - Japan 1990-91 (10 Months)

C O N T E N T S

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1. Basic Concept of Mid- and Long-term Plan

(1) General Discussion

Three years have passed since JICA started its cooperation to the school of veterinary medicine, and the necessity for a future concrete scheme regarding JICA's possible collaboration to this school has been raised among people concerned. This mid- and long-term plan has been produced to meet such a demand and to indicate the precise direction of JICA cooperation to this school.

According to the Record of Discussion concluded between the Zambian and Japanese Governments, JICA project has put as its ultimate objective the Zambianization of the school of veterinary medicine, which is the sole institute for veterinary education in Zambia. The realization of this objective has involved the cooperation of a number of donor countries and the programme is based on three main themes, namely education, research and extension work.

To evaluate the achievement in undergraduate education so far accomplished it must be appreciated that the school will produce its first graduates this year, despite a chronic shortage of academic and technical staff, which is gradually being overcome. However, following this achievement there are new challenges to be faced, in particular the zambianization of academic staff and the further education of graduates of the school who are expected to take on an important role in the future development of both the school and of the livestock industry in Zambia. A postgraduate programme is under development to meet this need as and when graduates become available and to facilitate these new educational and research responsibilities. The JICA project has to consider the extent and direction of its contribution to these plans.

So far research and extension work, two essential aspects of the JICA project, in the absence of a strong postgraduate sector, have been motivated by individual interest and not on the basis of a coordinated activity with systematic terms of reference. To some extent this has also been due to the preoccupation of staff with the development and introduction of the teaching curriculum, which has restricted the time and facilities which could be devoted to research. A satisfactory level of research activities is essential to the development of a higher degree education programme and the two must be closely integrated to fulfil the twin objectives of the

university as a whole, namely education and research.

As part of the mid- and long-term planning we must therefore consider how we can best determine those general research themes which will contribute most effectively to the further development of the school as a research and postgraduate institution, and how we can give them continuity in an overall project. In so doing we shall be working toward JICA's ultimate objective of the zambianization of the school and its firm establishment as the academic base for veterinary medicine in the country, and identifying the contribution which JICA can make to this objective in the next phase:

(2) Reconsideration of the Scope of Donor Support

The school has been supported by the technical and financial cooperation of several countries. JICA as the main donor has been involved from the planning stage and as agreed in the record of discussions has contributed mainly to two of four departments. Consequently the other main donors have diversified their contribution largely to the other two departments.

However, the chronic shortage of qualified staff is a general problem, which occupies much time and energy by the senior administrators in its solution, and is made more difficult by the fact that the individual donors restrict their staffing activities to their selected departments. This can result in one department having an excess of highly qualified staff while another is severely short-staffed, resulting in a situation which takes no account of the balanced development necessary to the health of the school as a whole.

Thus it would be detrimental for JICA to continue to restrict its support to only two departments, especially in personnel recruitment. It should now be prepared to enlarge its scope to embrace all four departments with other Aid Donors and so contribute to the development of the school as a whole.

Such a step would ensure a good mix of staff nationalities and improve interdepartmental cooperation within the school, and would give a lead to other donors which would almost certainly be followed. This move would greatly ease the difficulties currently faced in staffing a number of rather specialized teaching areas.

(3)Zambianization and Postgraduate Education

The Japanese government has made available a number of scholarships to eligible people each year, who are expected to be future member of staff of the school. This programme is highly appreciated but its full utilization has been restricted by the shortage of suitable candidates. With the imminent production of an annual group of new graduates this programme will become a major tool for the zambianization of the school in both its teaching and research activities, and will be a very important route for Ph.D. studies for these graduates. It is therefore essential that it should be continued and if possible increased. At the same time it is necessary that the school should proceed rapidly with the development of its own postgraduate programme in order to ensure in the long-term that it can produce zambian-trained staff and thus realize the aim of education of Zambians by Zambians without aid support, which must be the ultimate goal.

The continuing education and re-training of graduates will become another important task for the school in future years. As its graduates enter public life and professional activity, particularly in the government sector, they will be obliged to work with inadequate facilities and equipment and with virtually no back up in the form of reference and consultation facilities. Thus the school must also develop an advisory, consultation and reference role and for this an active research base is essential.

From all these aspects it is now essential to mobilize the postgraduate and research opportunities in the school to ensure its long-term future as an independent zambian institution, and enable the support of the donor agencies to be gradually phased out over a period of time.

2.Future Development Planning

The school capacity allows for 30 students per year, but so far this has not been reached, intake for the last 3 years being 20-20-19. This is partly due to a general shortage of well-qualified candidates and partly to insufficient numbers opting for veterinary medicine when making the choice at the end of the first year Natural Science which is the qualifying year. A high proportion of students opt for human medicine and engineering which are long established schools and careers. The school is endeavouring to increase its intake by an awareness campaign to schools and to first year Science students and the current target is for an intake of 25 in 1988/1989. Given the present low numbers of veterinarians in Zambia,

particularly in government service, and the current financial stringency, a slightly slower rate of growth in veterinary services initially will not be detrimental, but efforts must be made to improve it.

A problem in continuity of teaching syllabuses and research programmes is the relatively short contracts of 2-year duration generally favoured by donor organizations. A move to 4 or 5 year contracts would greatly improve this situation and make much more effective use of staff, and this is the future policy of the new University. However, the University itself offers 2- or 4-year contracts but most appointees prefer 2 years rather than the longer term commitment. (See Appendix 1)

Staff recruitment, except with donor support by salary supplementation, is increasingly difficult, the main causes being the level of inflation and consequent relative depression of salaries, and a general shortage of suitable accommodation. This particularly affects un-supplemented non-zambian staff and led to several resignations. However, the University is very active in attempting to solve its housing problem and hopefully this aspect will improve.

Extension services are an important aspect of the school's function for several reasons. Firstly contact with farms and livestock problems is necessary to expose students to field conditions and to provide material for field and laboratory diagnosis. Secondly the provision of expert advice and consultation by the staff to veterinarians and farmers has a directly beneficial effect on animal health and production and is a much-needed service to the community. Additionally this contact is valuable in identifying research problems and supplying research materials.

The school has been very successful in developing extension work in laboratory diagnosis, postmortem examination and hospitalization of sick animals, and in particular has established a laboratory diagnostic center for processing of samples from both veterinarians and farmers. However, the provision of these facilities which are not readily available elsewhere in Zambia has led to a steady increase in demand which has outgrown the school's resources, and these now require re-organization to cope with the routine diagnostic work without detriment to academic activities. (See Appendix 4 for detail)

The issues described above which have been recognized during the development of Phase I of the JICA programme should be taken into consideration in determining the future direction of the programme and the objectives to be attained in subsequent phases. In the Japanese aid system mid- and long-term planning is based on phases each of five years duration and this has been followed here. Thus three phases are identified to be referred to as Phase I, Phase II and Phase III respectively.

(1) Phase I (1985 - 1992)

1) In this phase the undergraduate curriculum and courses of study have been developed and implemented, and a period of consolidation will follow. (See Appendix 1 for details). The basis for postgraduate education is also being laid in this phase, to be implemented in full in Phase II as graduates become available. (See Appendix 2 for details)

2) There has been a heavy emphasis on undergraduate teaching and curriculum development in the first 3 years of this phase. As a result the research activities have been limited, and generally restricted to following the individual research interests of members of staff as time was available, and to group projects concerned with surveying the major disease problems in livestock management. With the completion of the 5 year syllabus in 1988, the development of research can now receive attention coupled with the expansion of postgraduate activities. (See Appendix 3 for details)

3) In association with the formulation of research policy the reorganization and expansion of research facilities within departments, and the provision of joint-use facilities and equipment between departments to encourage interdepartmental cooperation must be considered. (See Appendix 3) In this context the physical separation of routine diagnostic work and facilities from the academic activities of the clinical departments is desirable, to avoid conflict with their research functions, without losing their availability for teaching purposes. (See Appendix 4 for details)

(2) Phase II (1992 - 1997)

By the beginning of this phase the undergraduate school should be functioning routinely in its educational and administrative roles, and the annual production of 25-30 veterinary surgeons should be maintained without interruption. Attention should therefore be concentrated on other targets of

the JICA programme.

1)Zambianization should begin in this phase, and will start with the return of the two Zambian members of staff currently in postgraduate training, Dr. Musonda and Mr. Mizinga. The training of graduates to masters degree level after gaining field experience should be in progress, both within the school and outside the country, and this should provide a nucleus of junior staff. By the end of Phase II and at rate of 2-3 postgraduates per year, there should be up 10 Zambians in post in this way.

2)Further study to Ph.D. level will be required for these junior staff, having gained some teaching experience, and research opportunities for this must be created during this phase. The development of research in the school should create such opportunities in addition to overseas scholarships, and the availability of training in Japan will be particularly valuable at this stage. (See Appendix 2)

3)Following the development of research policy in Phase I the implementation of this policy will take place in Phase II. The expansion of research and extension facilities is envisaged and this, together with the definition of research themes, should encourage the participation of research workers from outside the school. In particular it should facilitate counterpart training with an influx of Japanese experts to work with Zambian staff and postgraduates. (See Appendix 3, 4)

(3)Phase III (1997 - 2002)

Provided that Phase II is properly implemented, Phase III should see a preponderance of Zambian staff at middle and lower academic levels, and a target of 70% zambianization should be achievable by 2000. While the most senior management positions will probably still need to be recruited from outside with aid support, future senior Zambian staff should already have been identified and able to fill these posts given sufficient experience.

At this stage further JICA involvement should only be to assist in the final zambianization of the school by advanced level staff training, and to support collaborative research projects between Japanese experts and Zambian counterparts.

Appendix 1

Phase 1 (1985 - 1992)

During this phase the present school buildings have been built and occupied and the five year course has been completed, with the first students due to graduate in 1988. Thus the full curriculum is now operating and will have run for 3 years by 1990. Course development will therefore slow down and a relatively fixed curriculum will exist at undergraduate level. Similarly the stock of teaching aids and materials will be more permanent and routinely available. However, to ensure this a high level of staff stability and of departmental organization is necessary and the aim should be to minimize staff turnover particularly in senior positions between now and 1990.

In 1987-1988 staff turnover has been a particular problem in the Biomedical Department with the loss of 4 staff after several years of stability, and reliance has had to be placed on shortterm visiting lecturers and ad hoc arrangements in Anatomy and Pharmacology. Hopefully this will be corrected in the 1988-1989 session. In Microbiology a more prolonged problem has existed due to the extent of the subject which covers two academic years and consequently the number of staff involved in teaching its various components. There has been an undesirable reliance on visiting staff, and the problem has become acute with the recent resignation of two microbiologists and the pending departure of the Head of Disease Control, Professor Shimizu. A senior academic expert in microbiology is urgently required to take charge of this key subject area on a longterm basis.

The teaching programmes in the 2nd 3rd and 4th years have now been repeated a number of times and following minor alterations are now well established. Appropriate lecture notes and practical class notes have been produced as teaching aids, and considerable stocks of practical class materials and specimens have been build up. In contrast the 5th year syllabus is being taught for only the second time, and the 6th year syllabus for the first time. Following this experience considerable changes are proposed for 1988-1989, largely in the clarification of specific course responsibilities between the departments of Disease Control and Clinical Studies and the distribution of subjects between the 5th and 6th years. This will improve the organization of classes, allow more time for clinical field work in 6th year, and produce a more logical progression of subjects.

Postgraduate Programmes in Veterinary Medicine

(1) Present Situation of Postgraduate Programme

The University of Zambia places strong emphasis on postgraduate training in a Staff Development Programme, which as the name indicates, is intended to ensure a regular input of qualified Zambian staff. The need for the programme is due to the fact that a Masters Degree is the minimum requirement for appointment to lectureship. The programme is approximately equally divided between Staff Development Fellowships for training to Masters degree level and Special Research Fellowships for training to Doctorate level, there being 60 - 70 places in each category. Since Staff Development Fellows are normally offered staff appointments on completion of their Masters degree they must be carefully selected for their academic potential. Special Research Fellows are already members of staff usually with several years experience. The University allocates some 10% of its budget to this programme, but endeavours to supplement this from overseas aid sources, particularly for training outside Zambia.

The school of veterinary medicine has had little opportunity so far to participate in the Staff Development Programme since it has not yet produced graduates for Staff Development Fellowships, and its staff is almost entirely expatriate and not eligible for Special Research Fellowships which are restricted to Zambians. However, two Zambian staff, Dr. Musonda a veterinarian, and Mr. Mizinga a non-veterinarian are currently on study leave for Ph.D. Dr. Musonda in Japan and Mr. Mizinga in America. We also have two junior non-veterinary staff with Masters degrees who would next year be eligible to compete for Special Research Fellowships, and one science graduate who is a Staff Development Fellow in Veterinary Biochemistry on a shared project between the school and ILRAD, Nairobi.

(2) Future Development

With the availability of the first veterinary graduates in 1988 a pool of potential postgraduates will begin to be available and training for these is being developed along two lines. These are as follows:

1) Postgraduate Training by Coursework and Research

The more usual route to a Master's degree is by a two-part programme. Part 1 consists of coursework for one year, including the preparation of a

research proposal. The courses of study must be prescribed in school regulations and are examined at the end of the year. Part II comprises one year's research and the preparation of a dissertation.

The coursework is normally more or less equivalent to a full year of study and covers a number of subjects. It therefore represents a considerable involvement of staff time and the general consensus is that the staff are already sufficiently committed to undergraduate teaching. It would not therefore be feasible to set up Masters programmes in individual departments. Furthermore such programmes require a minimum number of students to be viable, and at least for the next few years the number available would not support a range of programmes.

For these reasons the school has decided initially to offer one general Masters degree - Master of Veterinary Medicine - aimed specifically at ruminant medicine, to which all four departments can contribute and thus spread the burden of the additional teaching commitment. The programme for this degree is presently being developed by the school postgraduate committee with the aim of being operative in 1989 - 90, since a condition for entry will be at least one year of post-qualifying experience. Provisionally courses are proposed in clinical subjects (Microbiology, Pathology, Parasitology, Reproduction and Nutritional Physiology) plus practical experience in the large animal clinics, followed by research on ruminant diseases of importance in Zambia.

Since the number of subjects taught is small the programme can be quite flexible and each individual subject could be given in block form over a relatively short time. This would make JICA support for the degree possible in the form of short-term experts to teach these short courses and thus to relieve the burden on the permanent members of staff. They could also assist in the preparation and planning of research proposals for these students. Assistance with the research training will also be available from the International Laboratory for Research on Animal Diseases (ILRAD), Nairobi, Kenya, which is prepared to collaborate in the programme.

2) Further Training by Research

The objective of the University is to both transfer knowledge and to create new knowledge through a balanced continuation of education and research. Zambianization will eventually require the training of Ph.D. students by Zambian staff who are themselves trained to this level and active in

research. It is therefore necessary that the Masters programme should be followed by the availability of Ph.D. studies both overseas and within the school. While training abroad is likely to be more immediately available, the development of research programmes (Appendix 3) in which Ph.D. students can participate will create opportunities for training here in Zambia. Regulations for Masters Degree and Doctorate Degrees are already drawn up, and three postgraduate science students are engaged in research for the M.Sc. degree in the Biomedical Department, while two candidates for Ph.D. in Microbiology are under consideration.

A problem in the supervision of Ph.D. students is the absence of longterm contract staff to take on this role, and it is suggested that this could be overcome by joint supervision by both local and Japanese academics, who would themselves be involved in a joint research programme, while the students could also, if required, spend part of their training period in Japan. This would maintain continuity of supervision for Ph.D. students by experienced research workers, and would motivate such workers to become involved with the school and increase the scope and quality of the research programmes.

Research Policy and Facilities

(1) Research Policy

Previously the development of the curriculum and undergraduate teaching has been given high priority and research activities have tended to be restricted to individual projects. However, with the stability of teaching programme, more attention is now being paid to research activities and a research policy has been formulated to take account of the particular situation of the school in relation to veterinary and agricultural problems in Zambia and their solution, and to accommodate the relatively short-term (2-year) tenure of appointment of expatriate staff.

To cope with staff changes the agreed policy in the school is to develop broad research themes in and between departments which will extend over a period of years, and to which individual members of staff and postgraduates can contribute in their specialist fields without losing the continuity of the project as a whole. Due to the past and present shortage of veterinarians in Zambia, there is a need to first identify and characterise the major disease problems and to establish a baseline of health parameters, and then to proceed to in-depth studies of those conditions of economic importance. Therefore the research themes will initially be directed largely to disease surveys and the accumulation of clinical, physiological and biochemical data on healthy and diseased livestock, particularly cattle and goats, which are the most important farm animals in this country.

At departmental level these themes have been identified as follows:

1) Biomedical Department

The department will concentrate its studies on establishing the health parameters of normal indigenous goats under field and experimental conditions. These will include biochemical, haematological, anatomical and histological parameters. Subsequent studies will be extended to observations on pathophysiological changes in the major parasitic diseases, and in reproductive and nutritional disorders in collaboration with the Clinical Studies Department.

2) Preclinical Department and Disease Control

These two departments are already involved in survey work on a range of diseases in farm livestock and this will continue to be the main thrust of

research. The departments concentrate on microbiological, serological, pathological and epidemiological studies, the main emphasis in the Paraclinical Department being in pathology, while the Disease Control Department concentrates more on sero-epidemiology. Future work will narrow down to specific major diseases problems with the aim of developing control strategies. At the same time both departments are already involved in studying a small number of specific diseases which are of particular interest to department staff.

3) Clinical Studies

The emphasis in this department is on the reproductive and nutritional disorders of farm livestock, to be investigated in collaboration with the Biomedical Department. At the same time the department is involved in in-depth clinical investigations in a range of cases presented to the large and small animal clinics.

(2) Research Facilities

Facilities and equipment are generally good throughout the school, however these are to a considerable extent earmarked for undergraduate work and some expansion will be required as research and postgraduates develop. The establishment of a separate facility for routine diagnostic and postmortem work, and hospitalization (See Appendix 4) will partly meet this requirement but a number of specific needs can be identified.

The expansion of virological work and the study of zoonotic diseases (which are of major importance in Zambia) necessitate the improvement of safety conditions for biohazard work both in the department and in the experimental animal accommodation. Controlled environment facilities would also be a valuable addition for working with disease vectors. More animal accommodation will be required, particularly to establish and study experimental infections. Computing facilities to handle the data will be desirable as the programmes develop. Finally, as the change from survey work to experimental investigations takes place an electron microscope facility will become essential for work on disease pathogenesis.

The ancillary requirement to all these research developments is the expansion of the veterinary library in terms of its range of books and particularly research journals.

Appendix 4

Extension Facilities

Extension work in clinical medicine is important to clinical teaching, providing material for student practical work, and enabling staff and students to keep in close contact with the farming community and farming problems. It also provides a valuable support to the State Veterinary Service in coping with the increased demand for diagnosis and advice associated with the government's effort to improve agricultural production.

However, the success of the school's programme has resulted in excessive pressure on facilities in three areas, namely the Veterinary Diagnostic Laboratory, the PostMortem Room and the Hospital Accommodation. The Diagnostic Laboratory is presently situated in the Department of Disease Control, and while this was logical in its initial stages since the appropriate facilities and equipment were located in that department, the expansion of the diagnostic work creates a number of problems. The most serious is the risk of transmission of infection from the wide range of microbiological samples received to staff and students involved in the normal teaching programme, and to the range of experimental animals kept for teaching and research purposes. Additionally there is difficulty in maintaining separation of this material from that for academic work, and a conflicting demand on equipment intended for research and teaching.

The influx of carcasses for routine diagnostic purposes creates a similar problem in the postmortem room which is used as a teaching facility. The very limited cold room space presents a problem in the storage of infected material since it also has to serve the anatomy department. Crossinfection is a real risk, and the storage problem is made worse by the small size of the incinerator which slows down the rate of disposal of carcasses.

The hospital accommodation for both small and large animals is very inadequate, due to the fact that there is only one private veterinarian in Lusaka and therefore a heavy demand for the school clinic services. Both to cope with this demand and to supply in-patient material for student practical work the school needs considerably more space and requires it to be separated from the teaching block which is not the case at present.

For these reasons, but particularly for health and safety reasons it is proposed that the diagnostic laboratory, the postmortem room and associated incinerator, and the hospital accommodation should be re-sited in a new block to be positioned close to but completely separated from the existing school buildings to form a closed hygiene system. The vacated laboratory would then be returned to clinical teaching use, and the postmortem room would form a useful extension to the present workshop which is no longer adequate.

FUTURE PLANNING
ON
THE DEVELOPMENT OF
THE SCHOOL OF VETERINARY MEDICINE
UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

OCTOBER, 1990.

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1. Basic Concept of Mid and Long-term Plan

(1). RATIONALE.

Over five years have passed since JICA started its cooperati^{on} to the School of Veterinary Medicine, and the necessity for a future concrete scheme regarding JICA's possible collabora^{tion} to this school has been raised among people concerned. This mid and long-term plan has been produced to meet such a demand and to suggest the possible direction of JICA cooperation to this school.

According to the Record of Discussion concluded between the Zambian and Japanese Government in 1985, the Veterinary Education project had the purpose of establishing veterinary education of internationally recognised standards and thus contributing to the promotion of animal production developme^{nt} and improvement of veterinary public health in the Republic of Zambia. The realization of this objective has involved the cooperation of a number of donor countries and the programme is based on three main themes, namely education, research and extension work.

The progress in development of ^{an} internationally acceptable University programme in Undergraduate Veterinary education has been very good. The first group of veterinary students graduated in 1988, with 13 veterinary Doctors. This was followed in 1989 with 15 graduates and ⁱⁿ 1990, it is hoped that 17 graduates will be produced.

The School has developed from temporary buildings in the School of Mines and a very small staff to a flourishing Academic School, with full teaching activities.

There have been shortages of both academic and technical staff but the staff training programme, with considerable assistance from JICA, is gradually producing highly competent personnel. This is particularly true for technicians, as technic^{al} training in veterinary expertise is difficult to find in Zambia, but is essential to produce back-up for student training and clinical and diagnostic services.

Curriculum development is an ongoing process, and improvements in our curriculum have been made. Graduates are now working for the Government as District Veterinary Officers, for private and parastatal companies and commercial farmers.

The type of occupation of our graduates when they leave must be reflected in our curriculum. Our graduates also have been to Britain and Japan for post-graduate study and have been fully acceptable to these Universities, and in fact have done particularly well in their studies.

However following this achievement there are new challenges to be faced, in particular the Zambianization of academic staff and the further education of graduates of the school who are expected to take on an important role in the future development of both the school and of the livestock industry in Zambia. A postgraduate programme is under development to meet this need as and when graduates become available and to facilitate these new educational and research responsibilities. The JICA project has to consider the extent and direction of its contribution to these plans.

A satisfactory level of research activities is essential to the development of a higher degree ^{programme} and academic progress in the school and these must be closely integrated to fulfil the twin objectives of the university as a whole, namely education and research.

Research activities up to now have been mainly motivated by individual interests but it has been agreed that collaborative projects will be more productive. The School has agreed that health and disease in Ruminants should be a main area of research, but supplemented with other farm animals, poultry and fish and studies on Zambian wild animals. A more concerted effort must be made on particular diseases of economic importance, in the areas of control, preventive medicine and disease management. This involves epidemiological units, greatly developed facilities for disease diagnosis and strong pathology support. This is an area in which Japanese Veterinary Medicine is strong, and an area in which JICA support may have considerable usefulness in developing research capacity building in Animal Diseases.

Extension services are an important aspect of the school's function for several reasons. Firstly contact with farms and livestock problems is necessary to expose students to field conditions and to provide material for field and laboratory diagnosis. Secondly the provision of expert advice and consultation by the staff to veterinarians and farmers has a directly beneficial effect on animal health and production and is a much-needed service to the community. Additionally this contact is valuable in identifying research problems and supplying research materials.

The ambulatory clinic goes out to a wide variety of farms, including rural livestock areas, small holdings and small and large commercial farms. The small animal clinic is open every day with surgical operations carried out routinely.

2 . ZAMBIANIZATION AND POSTGRADUATE EDUCATION

The Japanese government has made available a number of scholarships to eligible people each year, who are expected to be future members of staff of the school. This programme is highly appreciated as it will become a major tool for the Zambianization of the school in both its teaching and research activities, and will be a very important route for Ph.D. studies for these graduates. It is therefore essential that it should be continued and if possible increased. At the same time it is necessary that the school should proceed rapidly with the development of its own postgraduate programme in order to ensure in the long-term that it can produce Zambian trained staff and thus realize the aim of education of Zambians without aid support, which must be the ultimate goal.

The continuing education and re-training of graduates will become another important task for the school in future years. As its graduates enter public life and professional activity particularly in the government sector, they will be obliged to work with inadequate facilities and equipment and with little back-up in the form of reference and consultation facilities. Thus the school must also develop an advisory consultation and reference role and for this an active

research base is essential, and a data collection centre.

From all these aspects it is now essential to mobilize the postgraduate and research opportunities in the school to ensure its long-term future as an independent Zambian institution, and enable the support of the donor agencies to be gradually phased out over a period of time.

3. STAFFING

The School now has an international^{vet} staff, which has certainly contributed to the development of a curriculum to produce internationally recognised veterinarians. Some of these staff are Aid Donor supported and this often involves 2-3 year contracts only. This leads to problems in continuity. The School is requesting Donors, including JICA to consider allowing their supplemented personnel to stay for 4-5 year periods. This will allow senior staff to remain long enough to contribute to curriculum development, and to supervise a postgraduate student research programme. This will become increasingly important as research and postgraduate education are developed.

The School also has non-Zambian staff who are unsupplemented. Some have been very important in the School's development. They are finding the increasing costs of living very difficult and the school would like some way of cushioning the effects of this and is looking for some means of supplementation.

4. POSTGRADUATE PROGRAMMES IN VETERINARY MEDICINE

(1). Present Situation of Postgraduate Programme

The University of Zambia places strong emphasis on postgraduate training in a Staff Development Programme, which as the name indicates, is intended to ensure a regular input of qualified Zambian staff. The need for the programme is due to the fact that a Masters Degree is the minimum requirement for appointment to lecturership. The programme is approximately equally divided between Staff Development Fellowships for training to Masters degree level and Special Research Fellowships for training to