THE UNIVERSITY OF ZAMBIA

RECORD OF DISCUSSIONS WITH JICA TECHNICAL GUIDANCE TEAM AND STAFF OF THE SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE REGARDING THE UNZA: VETERINARY EDUCATION PROJECT (1st Meeting)

Date and time of Meeting -Friday August 5, 1988 at 08:30 Hours (1st Meeting)

Venue for Meeting - Board Room of the School of Veterinary Medicine, UNZA.

Present at Meeting - See attached Appendix for a list of those who attended the meetings of the School Committee.

1ST MEETING - AUGUST 5, 1988

INTRODUCTORY REMARKS

The Chairman opened the meeting by extending a welcome to all present and particularly the JICA Technical Guidance Team led by Professor Takeuchi. He stated that the reason for the visit of the JICA Team was to review the progress made by the UNZA: Veterinary Education Project and to discuss the possibilities of JICA's support for a further period when the current phase of Japanese cooperation ends in January 1990. The Chairman then introduced the JICA Technical Guidance Team and all members of the School Committee.

It was NOTED that the papers circulated for the meetings were a basis for discussion. The Chairman REQUESTED that members feel free to frankly discuss any matter related to the Project whether or not there was a paper prepared on the matter.

In response Professor Takeuchi thanked the University for the preparations made in connection with the meetings and expressed the pleasure of the JICA Team at being present at the planned discussions.

1. REVIEW OF PROGRESS IN THE DEVELOPMENT OF THE SCHOOL OF VETERINARY MEDICINE TO JUNE 1988.

1.1 Staff Recruitment

(1) Academic Staff (Paper 1.1)

(1) NOTED that the introduction of the Paper 1.1 drew attention to the problems experienced in recruiting staff for the Project namely:-

- the relatively short duration of contracts resulting in high turnover of staff
- the scarcity of Zambian staff
- the unattractive salary and conditions of service offered to potential Zambian staff and expatriates who did not receive any salary supplementantion.
- the period of time taken to recruit staff

(2) NOTED that the largest number of fully funded staff were the JICA - supported staff. ALSO NOTED that other supported staff (i.e. supplemented staff) were from Britain, Ireland, Belgium, Germany and Denmark.

(3) NOTED that the School had experienced difficulties particularly in recruiting staff for the two departments that were not supported by JICA namely Biomedical Sciences and Clinical Studies.

(4) SUGGESTED that these recruitment problems would be alleviated were JICA to consider extending it's support for staff in these departments and/or for JICA to consider supplementation of salary to nationals of other countries.

(5) Regarding the academic staff of Biomedical Sciences Department:-

(a) NOTED that great difficulty had been experienced in recruiting lecturers in Anatomy and INFORMED that the teaching during 1987/88 had been covered with the assistance of four short-term lecturers. ALSO INFORMED that a new candidate had been

offered a senior appointment in Anatomy and a second candidate was under consideration.

(b) FURTHER INFORMED that the imminent arrival of Dr. Ayliffe would resolve the problems experienced in recruitment of a lecturer for Pharmacology.

(6) Paraclinical Studies Department:-

(a) NOTED that this department had considerable support through JICA and although there would be a turnover in JICA staff this year it WAS HOPED that the vacancies created would be filled by replacements.

(b) INFORMED that the vacuum left in Veterinary Entomology with the departure of Professor Kitaoka might be filled either by a Zambian candidate or an Indian resident in Zambia. FURTHER INFORMED that both candidates were to be interviewed shortly and that the School was confident one of them would be appointed.

(c) NOTED that the Microbiology post had been difficult to fill and with the departure of Dr. Gabbar, there was now urgent need to recruit two long-term experts from Japan, one for Bacteriology in this department and another for the Department of Disease Control.

(d) At this point a query was raised about UNZA policy regarding a lecturer teaching in two departments and also regarding the maximum teaching-load of staff. CLARIFIED that teaching in more than one department was quite common at UNZA. AGREED that shared teaching should be encouraged for academic and interest reasons but not for reasons of staff shortages as this had a tendency to burden staff. INFORMED that clarification regarding the policy on maximum teaching-loads would be sought and that members would be advised of this at one of the subsequent meetings.

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(c) NOTED that a JICA expert for Helminthology was expected and that this would assist Dr. Ihimo who had been responsible for teaching this subject with Dr. Tada.

(7) Disease Control Department

(a) NOTED that with the sudden departure of Dr. Nariharan, Professors Shimizu and Falade had been required to take on extra teaching loads in both 4th and 5th year.

(b) INFORMED that a Zambian candidate had been offered a post in Microbiology but due to his relative inexperience felt that there was urgent need to recruit a senior, experienced Microbiologist. NOTED that Microbiology would be affected further with the imminent departures of Professor Shimizu in October and Professor Falade in December. AGREED that this made the need to recruit a senior Microbiologist essential. In this connection REQUESTED JICA's assistance for a long-term microbiologist or short term experts to teach this course in the 1988/89 academic year.

(c) NOTED that the School did not feel that it would be helpful to recruit a microbiologist to do purely diagnostic work since he would then be divorced from teaching.

(d) NOTED that although Professor Tamamura was a Clinical Pathology expert he was teaching Clinical Biochemistry.

(e) INFORMED that Clinical Parasitology would be taught by Professor Akinboade who was expected shortly and the Dean, Professor Thomas.

(f) NOTED that earlier problems experienced with the teaching of Virology and Public Health had been alleviated by the appointment of Professor Nagabayashi and Professor G. Sato who was expected before the next academic session.

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(8) Clinical Studies Department:-

(a) NOTED that the posts that were filled in this department, as in Biomedical Sciences were only those where supplementation was available.

(b) NOTED that there was urgent need to recruit a replacement for Dr. Koomson who would be leaving in October. ALSO NOTED that there was urgent need to appoint staff for Surgery, Anaesthesia and Radiology. INFORMED that in the past the post in Surgery had been filled by short-term lecturers.

(c) REQUESTED that JICA consider extension of their support to this department to recruit staff in the areas which had proved difficult to fill for the same reasons stated as for Biomedical Sciences.

(9) House Surgeons

(a) INFORMED that the School had submitted proposals to the University for the establishment of two House Surgeon posts.

(b) CLARIFIED that the School intended to recruit new graduates to these posts for a period of one year and that these would be clinical posts to assist with the increasing volume of clinical work and on the linked farms and also to give an opportunity for selected graduates to obtain invaluable experience.

(c) NOTED that the JICA Team was completely in favour of this idea of the School as they felt it would contribute to improving the clinical/surgical experience of recent graduates. Whilst fully recognizing and accepting the significance of such a system the JICA Team QUERIED whether the duration of such appointments would not be better if they were for a two year period.

(d) The School REPLIED that, as it was anticipated that the salary for these posts would be low, it felt that prospective candidates would be more willing to accept such an appointment if it were for one year only.

(10) (a) In response to the requests made to the JICA Team for assistance of staff in the departments of Biomedical Sciences and Disease Control INFORMED that JICA policy was restricted by budget limitations which fixed the number of experts that would be assigned to the Project was about ten (10) long-term experts at any time and several short-term experts per annum.

(b) EXPLAINED that the main support of JICA was to the departments of Paraclinical Studies and Disease Control. and that the positions in these departments should be filled before it would be possible to recruit JICA experts to be assigned to the other departments.

(c) NOTED that if the demand for JICA experts for Paraclinical Studies and Disease Control were reduced this would enable the School to request recruitment of JICA experts for the other departments.

(d) In response to the request of JICA supplementation for other nationals INFORMED that JICA was working on this issue but emphasised that any decision in this regard would require Government approval.

1.1 (ii) Technical Staff (Paper 1.2)

(1) NOTED the information on Technical staff in the School as indicated in Paper 1.2.

(2) INFORMED that in 1987 there had been a freeze implemented by UNZA on the recruitment of non-academic staff but that the School had been permitted to employ eight technical staff.

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(3) NOTED that the School continued to experience difficulties in recruiting trained and experienced senior technical staff. Two Zambians now held Acting Chief Technician posts and it was hoped that after their current training and some experience they would eventually be promoted to Chief Technician posts.

(4) INFORMED that it was hoped that three technicians would join the department of Clinical Studies in September. These would not be appointed to the senior levels because although they had been trained at the Animal Health Institute in Mazabuka this was only to Certificate level. NOTED that the diploma level studies offered by the Natural Resources Development College was in agricultural sciences rather than animal health.

(5) NOTED that the non-availability of local training courses at diploma-level for Veterinary technicians meant that it was not easy to recruit technicians for senior posts.

(6) ALSO NOTED that shortages and high turnover rates of academic staff hindered the inservice training of technicians in their areas of specialization.

1.1 (iii) Administrative, Secretarial and Ancillary Staff (Paper 1.3)

NOTED that the information on these non-academic staff contained in Paper 1.3. indicated that recruitment had been satisfactory and that most positions had been filled.

1.1 (iv) JOCV Volunteers: (Paper 1.4)

AGREED to postpone discussions about the JOCV Volunteers until the JICA Zambia Office Resident Representative, Mr. Tomita was present to answer questions about JOCV.

1.2. Curriculum Development (Paper 2)

(1) NOTED that Paper 2 contained details of the curriculum as it had been developed up to this year.

(2) ALSO NOTED that the 2nd Year appeared to be the easiest year in terms of the course load.

(3) QUERIED whether it would be possible to include some basic clinical courses in the 2nd year and to make this year more difficult so that disinterested students could be eliminated from the programme at an earlier stage.

REPLIED that it had been observed that the students were not familiar with handling livestock and the School was considering exposing the students to handling healthy animals prior to their vacational farm training.

(4) On Curriculum Development for Postgraduate studies:-

(a) EXPLAINED that the University had, within its postgraduate regulations, possibilities of doing Ph.D studies by research taking 3 years and one of two ways of doing Masters degree a) one year of course-work and 8 months - 1 year of research or b) by research only, for 2 years.

(b) ALSO EXPLAINED that the School had been under pressure from the university to establish Masters degree programmes and had decided that it would implement a degree by coursework and research. The coursework would be general and broad-based in ruminant medicine followed by supervised research and the writing of a thesis.

(c) The JICA team EXPRESSED CONCERN that the taught coursework might take a lot of time and staff. As there had been staffing shortages a query was raised as whether the inclusion of taught courses for Masters degree would not increase the already heavy work load of the staff?

(d) The School's response to this query was that through selection of broad-based general course work it was intended that there would be small amounts of input from staff in all departments and that ILRAD had expressed interest in helping with the supervision of students research.

(e) The JICA Team INFORMED the Committee that Japan did not have Masters degrees for veterinarians but did have Ph.D studies by research and thesis only. ALSO INFORMED . that it would not be possible for JICA to assist with training in Japan at Masters level but that assistance to postgraduate students to obtain Ph.D degrees would be possible. The Team EXPRESSED doubt about Masters degrees being sufficient for candidates to become lecturers and for this reason felt that the School should emphasize postgraduate studies to be done through the research and thesis system.

1.3. Equipment (Paper 3)

(1) NOTED that the paper listed the major receipts of equipment purchased through JICA, HEDCO and British Council.

(2) CLARIFIED that JICA equipment supplies were basically for non-consumables and were distributed to all the departments.

(3) INFORMED that the School had faced special problems in consumable supplies. The problems included the unavailability of supplies locally and the purchase from abroad being subject to the extremely lengthy process of applying for foreign exchange allocation.

(4) OBSERVED that there were two problems experienced in regard to JICA equipment one being the length of time that consignments took to reach UNZA and the other was

that no feedback was received from JICA about what would be purchased from the lists of requests submitted

. The JICA Team ADVISED that these problems would be discussed in their Internal meetings and if possible a response would be given to the Committee at a subsequent School meeting.

1.4. Financial and other Resources Supplied by UNZA (Paper 4)

(1) NOTED that Paper 4 showed what had been allocated by UNZA for the running of the School and how these funds had been spent.

(2) INFORMED that what was not shown was the substantial income ± K100,000 p.a. generated from the services of the clinic.. FURTHER INFORMED that this income assisted to run the clinic, purchase necessary drugs etc.

(3) INFORMED that JICA had provided local funds for the day - to-day running expenses of the Project. Sometimes these funds had been utilized to purchase small items.

The Committee AGREED to adjourn the meeting at this point of the agenda to resume discussions on Monday August 8, 1988

The Chairman closed the meeting at 12:30 Hours.

Date: ..... Confirmed: .....
(Chairman)

THE UNIVERSITY OF ZAMBIA

APPENDIX

List of participants who attended the School meetings to discuss the UNZA: Veterinary Education Project with the visiting JICA Technical Guidance Team

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JICA Technical Guidance Team

Professor A. Takeuchi	-	(Team Leader)
Professor K. Oshima		
Dr. Y. Oku		
Mr. M. Yamagata		

School Team

Professor R.J. Thomas	-	Dean (Chairman)
Professor S. Falade	-	Disease Control (ren.)
Professor Y. Fujimoto	-	JICA Team Leader
Professor K. Shimizu	-	Head, Disease Control
Professor Y. Tsutsumi	-	Head, Paraclinical Studies
Dr. Bafi-Yeboa	-	Clinical Studies (rep.)
Dr. D.N. Kisauzi	-	A/Head, Biomedical Sciences
Dr. J.E.D. Hlangwa	-	Paraclinical Studies (rep.)
Dr. G.S. Pandey	-	Assistant Dean
Dr. K. Stafford	-	Head, Clinical Studies
Mr. R.V.J. Griffin	-	Central Services
Mr. T. Hiruta	-	Central Services (rep.)
Mr. H. Saito	-	JICA Coordinator
Mr. C.A. O'Mahony	-	Biomedical Sciences (rep.)

In attendance

Mr. A. Chishimba	-	Administrative Assistant to Dean Vet. Medicine
Mr. H. Chitambo	-	Disease Control
Mr. K. Tomita	-	Resident Representative JICA, Zambia Office
Ms. K. Tomita	-	JICA Zambia Office
Ms. J.M.F. Calder	-	UNZA Vice-Chancellor's Office (Secretary for the meetings)

August, 1988

THE UNIVERSITY OF ZAMBIA

RECORD OF DISCUSSIONS WITH JICA TECHNICAL GUIDANCE TEAM AND STAFF OF THE SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE REGARDING THE UNZA: VETERINARY EDUCATION PROJECT (2nd Meeting)

Date and times of Meetings:	Monday August 8, 1988 – 08:30 Hours (First Session) 14:15 Hours (Second Session)
Venue for Meetings:	Board Room of the School of Veterinary Medicine
Present at Meetings:	See Appendix attached on attendance.

2ND MEETING - 1ST SESSION

1.5 Cooperation with other Organizations and Funding Bodies (Paper 5)

(1) Within Zambia

(a) NOTED that the School continued to have good and helpful collaboration with the Department of Veterinary and Tsetse Control Services (DVTCS).
REPORTED that the School had provided facilities for inservice training courses for DVTCS technicians, had assisted with investigations regarding the outbreak of anthrax and that the facilities of the School's diagnostic laboratory complemented the services of the Balmoral Institute. ALSO REPORTED that in return the DVTCS Director sat on the School Board of Studies, the DVTCS provided its facilities for the vacation training of students and its staff had given guest lectures/seminars to students. NOTED that most of the students were recipients of GRZ bursaries and therefore would be employed by DVTCS upon graduation to serve their bonding period with Government.

(b) REPORTED that the School also had links with the National Council for Scientific Research (NCSR), the Tropical Disease Research Centre in Ndola, the Southern African Centre for Cooperation in Agriculture Research (SACCAR) and the Zambia Institute of Animal Health. During the period under review, the activities with these organizations/institutes WERE REPORTED as including attendance of meetings/seminars, participation in courses, presentation of research papers, and participation in the 2nd National Fair on Scientific and Technological Research for Development in June 1988 at which the School was awarded a prize for its exhibit.

(c) ALSO REPORTED that the School continued to build on and maintain good relationships with various private and non-government practitioners.

(2) United Kingdom

(a) REPORTED that the School continued to benefit from close collaboration established with the British Council and ODA by their assistance to recruit and fund staff on both long and short-term assignments, the provision of books, equipment and consumables, and with long term technician training scholarships.

(b) EXPLAINED that the School had, with the assistance and funding of HED, established specific links with the University of Glasgow which resulted in the provision of short-term experts and purchase of small items of equipment and consumables. ALSO EXPLAINED that the University of Glasgow through Professor Holmes, acted as a recruiting agency for staff from any British University.

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(3) The Republic of Ireland

NOTED that Ireland, through DFA and HEDCO continued to assist the School with the provision and funding of long- and short-term staff, a grant for the acquisition of books, equipment and consumables and a technician training fellowship.

(4) Belgium

REPORTED that from September 1987 the Flemish Association for Education Programmes Abroad (VVOB) had provided the funding for two long-term lecturers.

(5) Federal Republic of Germany

REPORTED that the German Committee of Protestant Churches for Services Overseas (Dienste in Ubersee -DU) had recruited from September 1987, two West German Veterinarians for the School (one of which was fully funded) on long-term appointments.

(6) Denmark

REPORTED that the Danish Volunteer Service (DVS) and GRZ had agreed to assign Dr. Bau to the School for a period of 18 months. Dr. Bau was fully funded by DVS.

(7) NOTED the appreciation and approval of the JICA Team for the School's involvement with other countries and agencies. The Team EXPRESSED a hope that with this involvement the School would in future be able to attract staff from these countries.

(8) CLARIFIED that supported staff on long-term contracts were either seconded or on leave of absence. NOTED that with the financial cut-backs taking place in Europe it was becoming increasingly difficult to recruit staff on long term assignments.

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(9) REPORTED that nothing had materialized from the earlier contacts established with FAO and Tufts University in the USA although repeated communications had been sent.

(10) ALSO REPORTED that a Fulbright Scholarship had been awarded for the recruitment of an American Professor to come and teach in the School but although this offer had been widely advertised and kept open for 18 months no candidates applied. NOTED that this was perhaps an example of the difficulty to recruit staff from western countries through secondment.

(11) AGREED that continued efforts should be made to approach other agencies to assist in the recruitment and support of staff for the School.

1.6 Academic and Technical Counterpart Training (Paper 6)

(1) CLARIFIED that it had been agreed at a previous JICA/UNZA meeting that JICA Counterpart Training awards could be utilized for the training of technical staff should there be no academic staff available.

(2) REPORTED that the three JICA Counterpart Training awards allocated to the Project had been utilized by Dr. Chizyuka, the Director of the Department of Veterinary and Tsetse Control Services and for two Technicians from the School-Messrs. Benkele and Chisembe. ALSO REPORTED that Mr. Benkele left in May 1988 for 11 months individual training in Japan and Mr. Chisembe was due to leave in August for a 3 months JICA training course on Microbiological and Virological Laboratory Techniques.

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(3) NOTED that whilst the Counterpart Training awards were extremely useful to the School for short-term, specialized training of Zambian staff, they did not provide academic/ educational qualifications which would assist, particularly technical staff, in their requests for promotion. ALSO NOTED that the University system required higher qualifications in the consideration of promotion to the senior and Chief Technician levels and that such qualifications were unattaintable in Zambia. REPORTED that the School had successfully sought some long-term (2-3 year) training scholarships from other agencies such as HEDCO and the British Council for the further formal training of its technicians.

(4) AGREED that it would be difficult to replace the invaluable services of Mr. Hiruta.
INFORMED that even in JICA it would be difficult to find a replacement for Mr. Hiruta as people with his skills were scarce but that JICA would try to recruit a replacement for him.

(5)a) DISCUSSED the great need for training of technicians in the maintenance and repair of equipment and instruments. NOTED that the large variety of equipment and instruments available in the School, the scarcity of trained and experienced staff, the unavailability of spare parts and the lack of comprehensive training facilities covering most equipment were some of the problems which would have to be considered by the School in its attempts to resolve this problem.

b) SUGGESTED that the School should attempt to purchase equipment and instruments from suppliers who had local or regional agencies AND ALSO SUGGESTED that more extensive maintenance agreements be negotiated with suppliers in future. HOPED

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that if these suggestions were heeded the problems of future maintenance and spare parts for equipment and instruments might be alleviated.

c) AGREED that efforts would continue to be made through JICA and other agencies to train technical staff to obtain the necessary skills needed for the operation, maintenance and repair of equipment and instruments.

(6) a) REPORTED that the following arrangements had been made or were being made for the further training of Academic Counterparts:-

Dr. Musonda	-	in Japan for Ph.D studies funded by Monbusho Scholarship
Mr. Mizinga	-	in USA for Ph.D studies funded by AAI scholarship
Mr. Muimo	-	possibily to go West Germany in 1989 for Ph.D studies funded by the Deutscher Akademischer Austauschdienst (DAAD) German Academic Exchange Service
Mr. Chitambo	-	Possible Ph.D studies at ILRAD, Kenya or in Japan.

b) Through the discussion INFORMED that the Japanese Government had agreed to allocate one Monbusho scholarship every year for specific utilization of Zambia Counterparts in the School and FURTHER INFORMED that Mr. Chitambo had been nominated as a candidate to receive this prestigous Japanese Government scholarship to do his Ph.D studies in Japan commencing in 1989.

c) With the receipt of this very welcome news AGREED that academic staff would be nominated each year to use the Monbusho scholarship and that the JICA Counterpart Training awards for the Project would be utilized for short-term, specialized training of technicians.

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(d) INFORMED that for 1989 three Counterpart training awards had been allocated by JICA.

1.7. Research Activities (Paper 7)

(1) NOTED that the paper provided general information on the major research activities carried out or still going on in the School.

(2) REPORTED that the major problems related to research included the limitation of funding for projects and the lack of staff particularly in the Department of Clinical Studies in 1987.

(3) INFORMED that due to shortage of funds and possible staff turnover the university policy towards research was to encourage a few larger joint projects rather than a multiplicity of small individual ones. In this regard the School had concentrated on research related to major livestock diseases in Zambia.

(4) Each Department had added a brief verbal comment to the report on its research activities. NOTED that the reports indicated that interesting results were forthcoming even from research that was basic, but very necessary data collection.

(5) NOTED the particular problems experienced by Clinical Studies in conducting research. AGREED that this Department should continue to increase its research activities and AGREED that ways should be explored to develop more collaborative research work.

1.1 (iv) JOCV Volunteers (Paper 4)

It has been agreed at the meeting held on August 5 that discussion about the JOCV Volunteers should be held when the JICA Zambia Office Resident Representative was present.

v) REPORTED that the School greatly appreciated the assistance and valued the contribution made by the JOCV Volunteers who were currently assigned to the Departments of Paraclinical Studies and Disease Control.

NOTED that a strong request was made to have JOCV Volunteers assigned to all departments of the School and it was indicated that this should be possible.

The Chairman closed this session of the meeting at 12:30 Hours.

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2ND MEETING - 2ND SESSION

2. WORK PLANS

(1) Dispatch of JICA Experts 1988/89

(a) NOTED the contents of the Annual Work Plan for 1988/89 for the Project showing only the dispatch of JICA experts for long and short-term assignments.

(b) SUGGESTED that it would be more convenient to the School if the assignment - period of Professors Yoshikawa and Kida could be from February - April 1989 to fit in with the UNZA calendar.

(c) INFORMED that the short-term expert in Immunology had not yet been identified but that he would be dispatched from April to June 1989.

(d) NOTED that the schedule included the dispatch of two new long-term experts - Professor G. Sato expected in August 1988 and Dr. K. Yamaguchi expected in October, 1988.

(2) Tentative Annual Work Plan

(a) NOTED the document headed Tentative Annual Work Plan. CLARIFIED that this document had been drawn up to reflect particularly the JICA activities in the School. INFORMED that the document provided a summary in table form of all JICA activities to date with some projections for future activities. ALSO INFORMED that the document related closely to the original Tentative Schedule for the Implementation of the Project (TSI) document formulated and approved by all parties in January 1986.

(b) The JICA Team EXPLAINED that JICA policy was that one phase of any Project should be achieved within a 5 year period. In order to assess whether the plans for the project had been achieved JICA would send an Evaluation Team to Zambia between August and October

1989. The major task of the Evaluation Team would be to assess the project in relation to the TSI document. The Evaluation Team would recommend an extension of the Project if they assessed that a high percentage of the activities listed in the TSI would be achieved either within the 5 year period or given an extension of a further 2 years. A second Phase would then be recommended to follow when Phase I of the Project had been satisfactorily completed.

INFORMED by the JICA Team, that the School should be very particular to demonstrate that the quality and/or type of activities proposed for Phase II should be different to those listed in the TSI of Phase I. Added that the purpose of the activities should distinctly demonstrate differences so that Phase II would not appear to be merely an extension of Phase I.

(c) INFORMED that one of the major tasks of the present JICA Technical Guidance Team was to plan for the forthcoming evaluation.

(d) AGREED that the new TSI document should be examined very carefully so that modifications were made where necessary, particularly as this document would be used as a basis for evaluation of the Project.

(e) NOTED that while making adjustments to the TSI document the School should decide whether it would achieve the TSI aims by the end of the current phase or whether a 2 year extension would be desireable.

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(f.) In response to concern expressed about the research targets listed in the original TSI document the JICA team EXPLAINED that the main purpose for Phase 1 was to:-

- establish the education system for undergraduate studies
- establish the basis for postgraduate student education
- establish the basis of teaching staff requirements.
- establish the basis for further research work

CLARIFIED therefore, that it was possible to change the description of the targets listed in the original TSI.

(g) NOTED that the TSI document gives the targets for achievement by the Project within 5 years whereas the Tentative Annual Work Plan showed what was actually being achieved.

(h) CLARIFIED that for the evaluation information on all the School's activities would be required and AGREED that it would therefore be necessary to formulate a comprehensive School Work Plan for the JICA Evaluation Team.

(i) ACCEPTED the Tentative Work Plan document presented to the Committee.

(j) AGREED to circulate to members the original TSI document.

The Chairman closed the meeting at 16:50 Hours after it was AGREED that the Committee would meet again on Wednesday August 10, 1988 to discuss the TSI document and receive the reactions of JICA Team to the School's mid and long-term proposals.

Date: ..... Confirmed .....
(Chairman)

THE UNIVERSITY OF ZAMBIA

APPENDIX

List of participants who attended the School meetings to discuss the UNZA: Veterinary Education Project with the visiting JICA Technical Guidance Team

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JICA Technical Guidance Team

Professor A. Takeuchi	-	(Team Leader)
Professor K. Oshima		
Dr. Y. Oku		
Mr. M. Yamagata		

School Team

Professor R.J. Thomas	-	Dean (Chairman)
Professor S. Falade	-	Disease Control (rep.)
Professor Y. Fujimoto	-	JICA Team Leader
Professor K. Shimizu	-	Head, Disease Control
Professor Y. Tsutsumi	-	Head, Paraclinical Studies
Dr. Bafi-Yeboa	-	Clinical Studies (rep.)
Dr. D.N. Kisauzi	-	A/Head, Biomedical Sciences
Dr. J.E.D. Mlangwa	-	Paraclinical Studies (rep.)
Dr. G.S. Pandey	-	Assistant Dean
Dr. K. Stafford	-	Head, Clinical Studies
Mr. R.V.J. Griffin	-	Central Services
Mr. T. Hiruta	-	Central Services (rep.)
Mr. H. Naito	-	JICA Coordinator
Mr. G.A. O'Mahony	-	Biomedical Sciences (rep.)

In attendance

Mr. A. Chishimba	-	Administrative Assistant to Dean vet. medicine
Mr. H. Chitambo	-	Disease Control
Mr. K. Tomita	-	Resident Representative JICA, Zambia Office
Ms. R. Tomita	-	JICA Zambia Office
Ms. J.M.F. Calder	-	UNZA Vice-Chancellor's Office (Secretary for the meetings)

August, 1988

THE UNIVERSITY OF ZAMBIA

Record of discussions with JICA Technical Guidance Team and Staff of the Samora Machel School of Veterinary Medicine regarding the UNZA: Veterinary Education Project (3rd Meeting)

Date and time of Meeting:	Wednesday August 10, 1988 at 08:30 hours
Venue of Meeting:	Board Room of the School of Veterinary Medicine
Present at Meeting:	See Appendix

3RD MEETING

1. At the previous meeting it WAS AGREED to consider the original Tentative Schedule for Implementation (TSI) document in relation to the Tentative Annual Work Plan (or revised TSI).

2. AGREED to consider the revised TSI document page by page and make comparisons of each section when necessary with the original TSI document.

2.1 Page 1 - Section I (Start of departments)

AGREED that all departments had started operations as indicated and would be fully functional by the end of the 5 year period.

2.2 Page 1 - Section II (veterinary student enrolment)

(i) NOTED that the annual student intake target on the original TSI was 40 and on the revised TSI it was 30.

(ii) EXPRESSED considerable doubt that this target would be achieved. NOTED the current intake was about 21 students per year. FELT that a more achievable target might be an intake of 25 students per year by the end of the 5 year period.

EXPLAINED that the School did not admit students directly so the intake depended on a quota of students allocated to Veterinary Medicine after their first year spent in Natural Sciences and also upon their performance in their first year of studies.

(iii) REPORTED that although the student intake was low the quality of the students admitted to Veterinary Medicine had been kept at a high level which had resulted in an extremely low drop-out rate so far. ADDED that, due to reasons of cost effectiveness, the School preferred to admit fewer good quality students and therefore maintain the low drop-out rate.

(iv) NOTED the suggestion that the School should make efforts to recruit students from neighbouring countries. In this regard NOTED that official policy direction was needed and support of the University.

(v) NOTED that the graduation figures would be dependent to a large extent on the student intake.

2.3. Page 11 - Section III (Start of the Postgraduate Course

NOTED that as the School would only produce its first graduates in 1988 it would not be possible to produce any post-graduates by January 1990. However it was hoped to have some postgraduates students by then. NOTED that the new TSI indicated the start of post-graduate courses by October 1989.

3/...

2.4. Page 1 - Section IV (Staffing Projections)

(i) INFORMED that it would be difficult to make accurate predictions about the staffing situation in January 1990, but that there had been an increase in staff numbers during the development of the Project.

(ii) REPORTED that there were currently 24 vacant positions in the technical and ancillary categories and unless the University permitted the School to fill these positions achievement of staffing targets would not be met.

2.5. Page 2 - Section I (Curriculum planning of the subjects)

(i) NOTED that the School had developed a Curriculum for all subjects in all the departments. ALSO NOTED that Curriculum development was an on-going activity and changes and improvements to the curriculum should be expected.

(ii) CLARIFIED that the solid lines opposite activities listed in the revised TSI document indicated JICA's contribution to or involvement in the departments of Paraclinical Studies and Disease Control AND the broken lines indicated JICA's contribution to or involvement in the other departments.

(iii) ALSO CLARIFIED that the revised TSI included more details (i.e. with sub-titles) for each of the activities. This had been done in preparation for the forthcoming evaluation, which would assess the achievements of the TSI targets both quantitatively and qualitatively.
ADDED that the TSI had included JICA activities in other departments as the evaluation would be done on both JICA activities and the activities of Project as a whole.

4/...

2.6. Page 2 - Section 2 (Lectures, laboratory work and field practice for veterinary students)

NOTED the targets listed in the TSI for this section.

2.7. Page 2 - Section 3 (Development and production of teaching materials)

(i) CLARIFIED that the targets indicated in the TSI under this section were JICA's contribution in the departments of Paraclinical Studies and Disease Control with some contribution given to Pharmacology.

(ii) NOTED that under (2) Audio-visual apparatus, preparation of slide materials was being achieved but that video production was still at an early stage.

2.8. Page 2 - Sections 4 and 5 (Collection and analysis of veterinary information and data AND Other necessary work for veterinary education)

NOTED that the activities listed in these sections were on-going activities.

2.9. Page 3 - Sections 1 and 2 (Survey of animal diseases in Zambia - Research on diagnosis of animal diseases)

NOTED that the research projects listed under these sections were currently on-going activities.

2.10. Page 3 - Sections 3 and 4 (Original TSI)

(i) AGREED that the activities listed in the original TSI under these sections should be removed as such activities were unattainable.

(ii) NOTED that these activities had in fact been removed in the revised TSI.

5/...

2.11. Page 3 - Section 3 in the revised TSI (Administrative collaboration in animal disease control and public health)

NOTED that the School was heavily involved in the activities listed and EXPECTED that diagnostic work would be a continuog process.

2.12. Page 3 - Section 4 (Applied research and dissemination of scientific and technical information)

(i) REPORTED that the School was not currently heavily involved in these activities but did collaborate with the research being done through a large, regional EEC-funded project.

(ii) NOTED that the titles of Sections 2 and 3 were slightly different to the headings of the corresponding sections (i.e. 2 and 5) in the original TSI.

2.13. Page 4 - Section 1 (Clinical Services for the Veterinary Hospital)

INFORMED that these activities were established but that the services of the large animal clinic were still being developed.

2.14. Page 4 - Section 2 (Farm Veterinary Services)

INFORMED that the School had established a fairly extensive Farm Veterinary Service and anticipated that this would continue to be built up.

2.15. Page 4 - Section 3 (Dissemination of animal health and public health knowledge)

NOTED that the School was involved in these activities.

2.16. Page 4 (Cooperation with other institutions and organizations)

NOTED that although the School cooperated with a number of institutions and organizations felt that it would require time to develop these further.

6/...

2.17. Page 5 and 6 (Japanese Contribution)

(i) NOTED that the activities listed in the revised TSI were a record of JICA's contributions and intentions for the Project.

(ii) INFORMED that the titles of Academic staff had been excluded deliberately in the revised TSI.

2.18. Page 7 - Section II (Equipment Supply Scheme)

NOTED that, through JICA and other agencies, a considerable amount of equipment had been procured for the School but in order to maintain the services an extension of the equipment supply would be required.

2.19. Page 7 - Section III (Counterpart Training Scheme)

NOTED that the Counterpart Training Scheme was operational and that 3 awards had been allocated for 1988.

2.20. Page 7 - Section IV (Japanese Government Scholarship)

NOTED that Dr. Musonda was currently a recipient of this scholarship and Mr. Chitambo had been nominated for this scholarship in 1989. (See also Item 6 (b) and (c) on page 6 of record of 2nd Meeting).

2.21. Page 7 - Section V (Veterinary Paddocks Project)

NOTED that the JICA involvement with the Paddocks had been for a relatively short period AND that this would of necessity be a very-long-term activity.

2.22. Page 8 (Zambia's responsibilities)

NOTED that the table in the TSI indicated UNZA's responsibilities for the Project.

7/...

3. FUTURE PLAN FOR THE PROJECT

3.1. The JICA Team EXPLAINED at the request of the Committee JICA's policies regarding the extension of Projects.

3.2. DISCUSSED in considerable detail the following:-

- the possibilities of UNZA being able to meet the revised TSI document targets by the end of the 5 year period or the necessity to request an extension.
- JICA policy regarding extension, support for this and moving into a second phase.
- JICA policy regarding aims of Phase I and Phase II
- the implications for the School should they request an extension.

3.3. NOTED that it would be in the long term interests of the School and Veterinary Education in general to request a 2 year extension of Phase 1 of the Project and at the same time submit a plan for Phase II.
AGREED that such an extension would result in more substantial achievement of the targets of the TSI for PHASE I; would consolidate the establishment of the undergraduate courses which was the main aim of the original TSI; and give time to develop the basis of postgraduate education.

3.4. NOTED that the School mid and long-term proposed plan had been based on three 5 year phases which was not in line with JICA Policy. AGREED that the School document would, in light of the discussions, need re-structuring and therefore would be withdrawn for reconsideration within the School. ALSO AGREED that the revised School plans would be sent to Japan and that there would be an exchange of views and opinions before the new plans were finally submitted to JICA for consideration.

B/...

4. POSTGRADUATE EDUCATION

4.1. AGREED that this opportunity should be taken to discuss the proposals regarding postgraduate education.

4.2. NOTED that there were different opinions regarding two issues related to postgraduate studies. The issues discussed in detail were:-

- whether it was necessary for postgraduate candidates to complete one year of field work after graduation before being admitted to postgraduate studies?
- whether the School should admit students with only the undergraduate degree directly into a postgraduate programme by research only?

4.3. DECIDED, in view of the opinions expressed on these matters, that there was need for the School to consider different possibilities for postgraduate training, as well as developing a Masters degree programme in Ruminant Medicine through the two-part structured system.

4.4. INFORMED that when Japan did have Masters degree programmes for veterinarians the students did this mainly by research and were given lectures and seminars on specialized areas. However there was no structured coursework in this system.

4.5. DECIDED that although a year's professional experience before embarking on postgraduate work was very desirable, it was accepted that this should not be made an obligatory prerequisite.

9/..

4.6. CONCLUDED that the School should retain as much flexibility as possible in its postgraduate training in order to maximise training possibilities for its graduates. This flexibility should range from a structural Part I - Part II course through Masters degrees by research involving some specialized taught courses to Masters and Doctoral degrees by research only.

There being no further business the Chairman thanked all members for their most useful contributions to the discussions and closed the meeting at 13:00 Hours.

Date: ..... Confirmed: .....
(Chairman)

ADDENDUM:

REQUESTED that the following be included in the record. The TSI had been revised to:-

- formulate the foundation of postgraduate education
- maintain the undergraduate education
- formulate the basis for research activities.

THE UNIVERSITY OF ZAMBIA

RECORD OF DISCUSSIONS WITH THE JICA TECHNICAL GUIDANCE TEAM AND UNIVERSITY OF ZAMBIA AUTHORITIES REGARDING THE UNIVERSITY OF ZAMBIA: VETERINARY EDUCATION PROJECT - UNZA/JICA JOINT COMMITTEE

DATES AND TIMES OF MEETINGS: Thursday, August 11, 1988
08.30 Hours (First Session)
14.30 Hours (Second Session)

VENUE OF MEETINGS: Senate Committee Room 1, University of Zambia

PRESENT:

Prof. K Mwauluka	-	Vice-Chancellor (Chairman)
Prof. A.A. Siwela	-	Deputy Vice-Chancellor
Prof. A. Takeuchi	-	JICA Technical Guidance Team, Leader
Prof. K. Ohshima	-	JICA Technical Guidance Team
Dr. Y. Oku	-	JICA Technical Guidance Team
Mr. H. Yamagata	-	JICA Technical Guidance Team
Prof. Y. Fujimoto	-	JICA Team, Leader
Prof. K. Shimizu	-	JICA Expert, Head, Disease Control
Prof. Y. Tsutsumi	-	JICA Expert, Head, Paraclinical Studies
Prof. R.J. Thomas	-	Dean, School of Veterinary Medicine
Mr. H. Naito	-	JICA Coordinator
Ms. R. Tomita	-	JICA Zambia Office

IN ATTENDANCE:

Ms. J.M.F. Calder	-	UNZA, Vice-Chancellor's Office (Rapporteur)

1. INTRODUCTORY REMARKS

The Chairman, Professor Mwauluka had, at a brief previous meeting, welcomed the JICA Technical Guidance Team led by Professor Takeuchi and had wished them a pleasant stay in Zambia and hoped that they would have fruitful discussions.

He opened today's meeting by saying he had NOTED from the documents that extensive discussions had been held with the School.

2. REVIEW OF THE UNZA: VETERINARY EDUCATION PROJECT

2.1 Staff Recruitment

(i) NOTED that the School had experienced difficulty in recruiting staff to the non-JICA supported Departments of Bio-medical Sciences and Clinical Studies. ALSO NOTED that the School had requested JICA's assistance to extend their staff-support to these Departments.

(ii) INFORMED that the possibility to extend JICA support existed subject to conditions such as limitation of funds; that such extension would not diminish the support to the departments of Paraclinical Studies and Disease Control, and provided the positions in these departments were filled.

(iii) On the question of supplementation by donor agencies for non-nationals INFORMED that current JICA policy was that JICA could not make any payments to non-Japanese staff. However this matter was currently under discussion in JICA. INFORMED that a decision about this should not be expected in the near future.

(iv) NOTED the proposal to establish a system of House Surgeons and the JICA Team's support for this proposal.

(v) On Technician recruitment INFORMED by the Deputy Vice-Chancellor that the University was pleased with the way the recruitment of technical staff had been done by the School. CLARIFIED that the School may recruit technical staff at the rate and numbers required and EXPLAINED that the freeze on recruitment was particularly in regard to administrative staff.

CLARIFIED that as the basic qualification for both Chief and Senior Technicians was the same, promotion to Chief Technician would be based on consideration of aspects such as experience, exposure, specialized skills acquired, recommendation from the School and contribution to the Department. This meant that even short-term training as would be obtained in Japan would be considered in the promotion to Chief Technician level.

2.2 CURRICULUM DEVELOPMENT

(i) NOTED that with the undergraduate curriculum no major problems had been raised.

(ii) NOTED that from the extensive discussions in the School meetings it had been agreed that the development of postgraduate training should remain flexible. The University accepted this.

INFORMED that as Veterinary Medicine was a new School it would be given top priority by the University to recruit Staff Development Fellows to undergo the School's postgraduate training.

2.3 EQUIPMENT

(i) NOTED that, besides some problems experienced in obtaining particularly consumables the School had no major equipment supply problems.

(ii) INFORMED that the School may seek the University's assistance particularly to purchase vaccines.

2.4 COOPERATION WITH OTHER AGENCIES AND ORGANIZATIONS

NOTED the efforts of the School to establish and develop cooperative links.

2.5 COUNTERPART TRAINING

(i) NOTED the importance of Counterpart Training provided by JICA and that for the time being these awards would be utilized mainly for the training of technicians.

(ii) NOTED the urgent need to train an instrumentation technician. The University AGREED to give its support and assistance to the School to identify a suitable candidate who would be trained with the help of JICA.

(iii) In regard to (ii) above AGREED that the University should submit a request to JICA to recruit a JOCV Electronic Engineer.

2.6 JOCV VOLUNTEERS

(i) NOTED the School's request to increase the number of volunteers assigned to the Project and for some of them to be recruited to work in the Departments of Bio-medical Sciences and Clinical Studies.

(ii) INFORMED that no response to this request could be made at these meetings as this matter would need to be discussed by JICA AND JOCV

2.7. UNZA FINANCING FOR THE PROJECT

NOTED the documents indicating UNZA's contribution to the project.

2.8 RESEARCH

(i) NOTED that no particular problems had been experienced by the School's research activities and that these would continue to develop.

(ii) INFORMED by the Chairman that the allocation of research funds to the School next year would be increased.

2.9 WORK PLAN 1988/89

(i) NOTED that this document recorded the number and timing of the dispatch of Japanese experts coming to the School for 1988/89.

(ii) POINTED OUT that the School minutes had inadvertently omitted that the assignment of Professor Sasaki would probably be from February to April 1989 and that his major responsibility would be to teach Radiology in the Department of Clinical Studies. The School had also expressed a hope that Professor Sasaki would contribute when possible to Surgery. REQUESTED that this be minuted in this record.

(ii) NOTED that it had been agreed in the School that it might be impossible to achieve the original TSI targets by the end of the 5 year period and therefore the TSI had been revised. Confirmed that the School was committed to achieving the aims of the TSI but was requesting an extension of the project-period to give more time for better achievement of the targets contained in the revised TSI.

(iii) NOTED that the University was completely in support of the School's request for extension of Phase I.

(iv) The JICA Team INFORMED the Committee that they had taken note of the Vice-Chancellor's strong recommendation for an extension of JICA support to the Project in order to more efficiently and effectively achieve the TSI targets.

(V) NOTED that all concerned had concurred with the School's decision to request an extension and hoped that this would be considered favourably by JICA.

2.11 JAPANESE GOVERNMENT SCHOLARSHIP

(i) CLARIFIED that the Monbusho Scholarship awarded to Dr. Musonda was not the same as the specific allocation of one Monbusho scholarship per year to the Project. The later scholarship was obtained after much pressure had been put on the Japanese Government by JICA. The JICA Team REQUESTED that the University make serious efforts to nominate outstanding candidates every year for this scholarship.

(ii) CLARIFIED that the candidates do not have to possess a Masters degree in order to be considered for this scholarship.

(iii) AGREED that the University should contact the Japanese Embassy to request an increase in the number of Monbusho scholarships awarded to the Project every year.

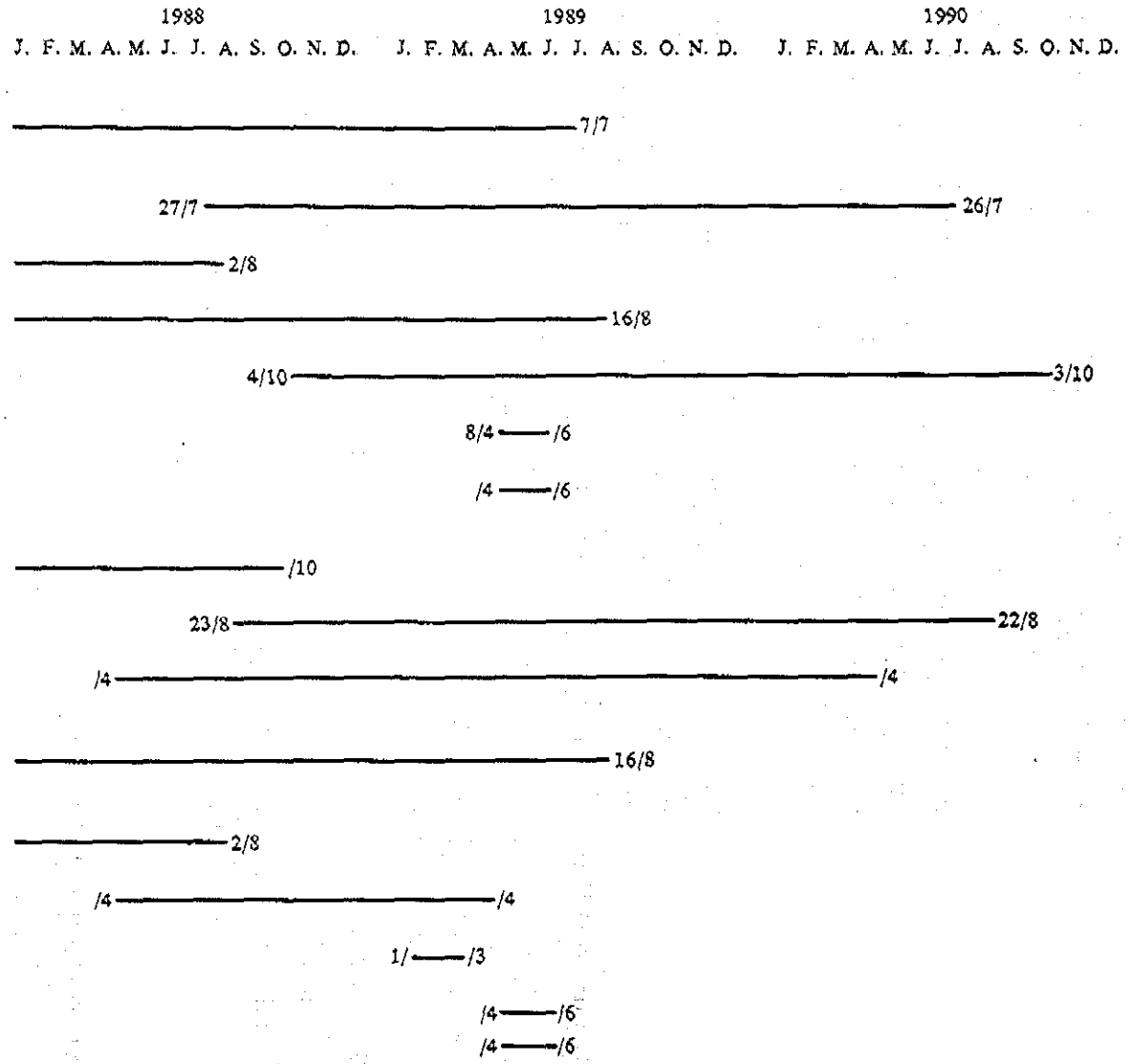
There being no further business the Chairman thanked the JICA Team for their most useful assistance to the University regarding the preparations for the forthcoming evaluation and all the deliberations held during the past week.

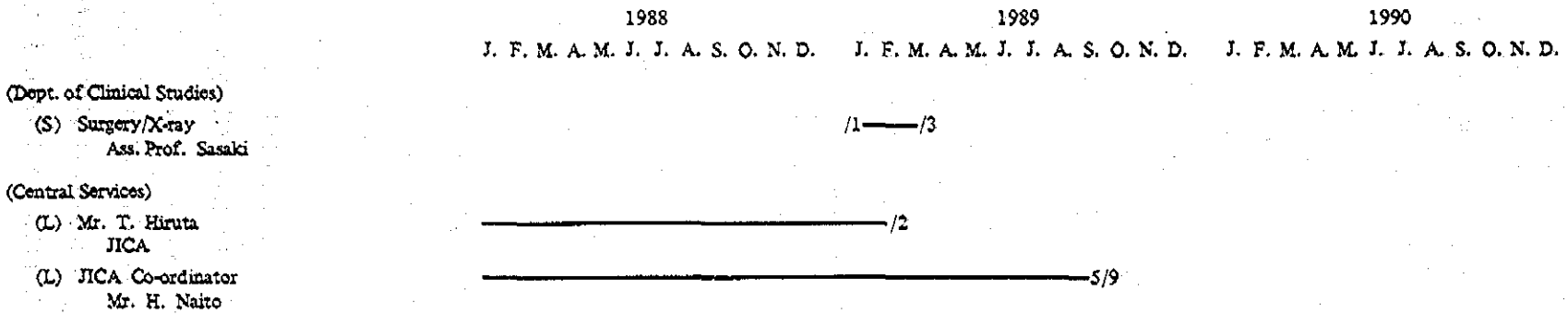
DATE: ..... CONFIRMED: .....

12th August, 1988

ANNUAL WORK PLAN FOR 1988/89 (UNZA: Veterinary Education Project)

1. Expert Dispatch Plan

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J. F. M. A. M. J. J. A. S. O. N. D. J. F. M. A. M. J. J. A. S. O. N. D. J. F. M. A. M. J. J. A. S. O. N. D.
(Dept. of Clinical Studies)
(S) Surgery/X-ray
Ass. Prof. Sasaki
/1——/3
(Central Services)
(L) Mr. T. Hiruta
JICA
/2
(L) JICA Co-ordinator
Mr. H. Naito
5/9

ザンビア大学

ザンビア大学獣医学部技術協力計画に関する日本側巡回指導調査団およびザンビア側関係者との討議々事録

開催日時：1988年8月11日木曜日
8時30分から（第一回），14時30分から（第二回）
開催場所：ザンビア大学，第1評議員室

出席者：K. ムワウルカ教授	—	副学長（議長）
A. A シウェラ教授	—	副学長補
竹内啓教授	—	巡回指導調査団長
大島寛一教授	—	巡回指導調査団員
奥祐三郎博士	—	〃
山縣正安氏	—	〃
藤本肆教授	—	JICAチームリーダー
清水亀平次教授	—	JICA専門家　疾病予防講座主任
提司厚教授	—	〃　基礎獣医学講座主任
Y. トーマス教授	—	獣医学部長
内藤久敏氏	—	JICA調整員
富田浩造氏	—	JICAザンビア事務所長
J. M. F. コールダー女氏	—	副学長室（書記）

1. 開　会

本会議に先立ち議長から，調査団に対する歓迎と有意義な協議を希望する旨発言があった。
既に広範囲にわたる討議が行なわれたことを附言した上で議長は開会を宣言した。

2. プロジェクトの見直し

2.1 教官リクルート

(i) JICAの協力がない生物医学，臨床講座において教官リクルートが困難であった旨報告された。これに対し大学側としてJICAに協力要請を行なった旨述べられた。

(ii) JICAの協力範囲の拡大について，重点2講座への協力を減じさせない点，同講座の必要ポストを充たすことを優先として予算上の制限を考慮した上で検討する余地がある旨報告された。

(iii) 他国籍の教官に対する補助に関して「現在のJICAの制度上ではJICA以外の教官に対して給与を支給することはできない。このようなケースに関して現在JICA内で協議が行なわれて

いるが本件については早急な回答は期待できない」旨，報告された。

(iv) House Surgeons（学部付臨床獣医師）制度の確立について要請があり，その要請に対するJICA側の支援が述べられた。

(v) テクニシャンのリクルートに関し副学長補から，獣医学部がテクニシャンのリクルートを行なったことは喜ばしいこととの発言があった。学部として必要とされる人数と割合のテクニカルスタッフの補充を行なう旨明言され，さらに補充の凍結は管理部門のスタッフに限定するとの説明もなされた。

主任および上級テクニシャンの基本的資格については違いがなく主任テクニシャンへの昇格は，経験，経歴，特殊技能，学部からの推薦，講座への貢献度を考慮して行なわれる旨確認された。これは，短期であっても日本での研修が主任テクニシャン昇格の考査対象となることを意味している。

2.2 カリキュラム整備

(i) 学部のカリキュラムについては問題なしとされた。

(ii) 学部内協議で大学院のプログラムの整備については臨機応変に対応することが合意され，大学側もそれを承認した。

獣医学部は新設学部であることから大学院プログラムを実施する為のスタッフディベロップメントフェローのリクルートを大学としては獣医学部を最優先に考える旨報告された。

2.3 機 材

(i) 消耗品の確保に若干の問題があった他は機材の供給に大きな問題はなかった。

(ii) ワクチンの購入に関し学部として大学の協力が得たい旨述べられた。

2.4 他の機関との協力

他の機関との協力体制の確立の為の学部の活動について発言があった。

2.5 カウンターパート（C/P）研修

(i) JICAによるC/P研修の重要性が述べられ，今後はテクニシャンの研修を重点に活用する旨述べられた。

(ii) 資機材に関する技師の緊急的必要性が述べられた。大学側は学部がJICAの援助による研修の適当な人材を選定することに協力支援する旨述べられた。

(iii) (ii)に関係して，大学側が電気技師の協力隊員を派遣要請する旨確認された。

2.6 青年海外協力隊員

(i) 本プロジェクトにはりつく協力隊員の増員と生物医学科学および臨床講座への隊員派遣の要請が学部側よりなされた。

(ii) (i)に関しJICA内部での協議が必要であり本委員会では即答できない旨報告された。

2.7 UNZA側プロジェクト予算

UNZA側のプロジェクトに対する予算書の説明がなされた。

2.8 研 究

(i) 研究分野については特に問題がなく，現状の発展をすすめる旨述べられた。

(ii) 議長が学部に対する来年度の研究費を増額する意向を述べた。

2.9 88/89年の活動計画

(i) 次年度の日本人専門家の派遣計画書が発表された。

(ii) 学部協議々事録から，来年2月から4月まで臨床講座でX線学を教授する佐々木助教授の派遣がもれていた点が指摘された。

学部側から佐々木助教授に外科学の講義も併せ行なう様要請があった。本件，本議事録に記録するよう要望された。

(iii) TSIが目標としているところを今5年間で達成することは不可能であることが学部協議で合意され，TSIの見直しを行なった旨述べられた。

学部側は改訂した目標を達成する旨約束する一方，より良い成果をあげる為プロジェクトの期間延長を要請する旨確認された。

(iv) 大学側はプロジェクト第1期の延長に関する学部側の要請を全面的に支援する旨述べられた。

(v) 巡回指導調査団は改訂TSIの目標を効率的かつ効果的に達成する為のJICAの協力期間延長に関する副学長の強い提言を書き留えた旨報告した。

(vi) 全ての関係者が延長を要請する学部の決定に合意しかつ本件がJICA内部で前向きに検討されうるよう期待する旨述べられた。

2.10 日本政府の国費留学生制度

(i) ムソンダ氏に与えられた文部省留学生枠が本プロジェクトに割り当てられた特別枠とは異なるものであることが確認された。後者はJICAから文部省に働きかけて確保されたものである。

調査団はこの留学生枠に対し毎年大学側が優秀な候補者を人選するよう要望した。

(ii) 候補者は修士号をもっている必要はない旨確認された。

(iii) 大学側が本留学生枠の拡大要請の為，日本大使館と折衝すべきである旨合意された。

全ての議事が終了し，議長はJICAチームによる今後予定されているエバリュエーションに対する準備の為の助言と先週来の討議に対し感謝の意を表した。

以　上

TENTATIVE ANNUAL WORK PLAN

Japanese Cooperation Duration		I	II	III	IV	V	
Five years from January 22, 1985 to January 21, 1990		Jan. 1985 Dec.	Jan. 1986 Dec.	Jan. 1987 Dec.	Jan. 1988 Dec.	Jan. 1989 Dec.	Jan. 1990
UNZA Academic Year (October - September)		1984 ~ 1985 Oct Sep	1985 ~ 1986 Oct Sep	1986 ~ 1987 Oct Sep	1987 ~ 1988 Oct Sep	1988 ~ 1989 Oct Sep	1989 ~ 1990 Oct Sep
《 UNZA ACTIVITIES 》							
I. Start of departments							
1. Department of Biomedical Sciences							
2. Department of Paraclinical Studies (Veterinary Pathology, Parasitology, Microbiology)							
3. Department of Disease Control							
4. Department of Clinical Studies							
II. Veterinary student enrolment							
1. Intake	13 (1983)	15	19	20	22	30	30
2. Graduation	-	-	-	-	13	15	19
3. Total	13	28	47	67	76	91	102
III. Start of the post-graduate course							

IV. Staffing projections

	Number Required	Present Number Including Process of Filling	Short fall
1. Dean	1		
2. Professors	4		
3. Assoc. Professors	11		
4. Lecturers	16		
5. Pharmacist	1		
6. Radiologist	1		
7. C. Technicians	5		
8. S. Technicians	9		
9. Technicians	15		
10. Teaching Assistants	5		
11. Secretaries	9		
12. Administrative Officers	2		
13. Miscellaneous	36		
Total	115		

Japanese Cooperation Duration Five years from January 22, 1985 to January 21, 1990	I Jan. 1985 Dec.	II Jan. 1986 Dec.	III Jan. 1987 Dec.	IV Jan. 1988 Dec.	V Jan. 1989 Dec.	 Jan. 1990
UNZA Academic Year (October - September)	1984 ~ 1985 Oct ~ Sep	1985 ~ 1986 Oct ~ Sep	1986 ~ 1987 Oct ~ Sep	1987 ~ 1988 Oct ~ Sep	1988 ~ 1989 Oct ~ Sep	1989 ~ 1990 Oct ~ Sep
《 PROJECT ACTIVITIES 》						
1. Veterinary Education						
1. Curriculum planning of the subjects						
Department of Biomedical Sciences						
Department of Paraclinical Studies						
Department of Disease Control						
Department of Clinical Studies						
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						
3. Development and production of teaching materials						
(1) Micro and macroscopic preparation						
(2) Audio-visual apparatus						
(3) Lecture notes Pharmacology (Biomedical)						
(4) Laboratory units						
(5) Laboratory animals						
4. Collection and analysis of veterinary information and data						
(1) Reference books						
(2) Reprints						
(3) Data from relevant institutions						
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						

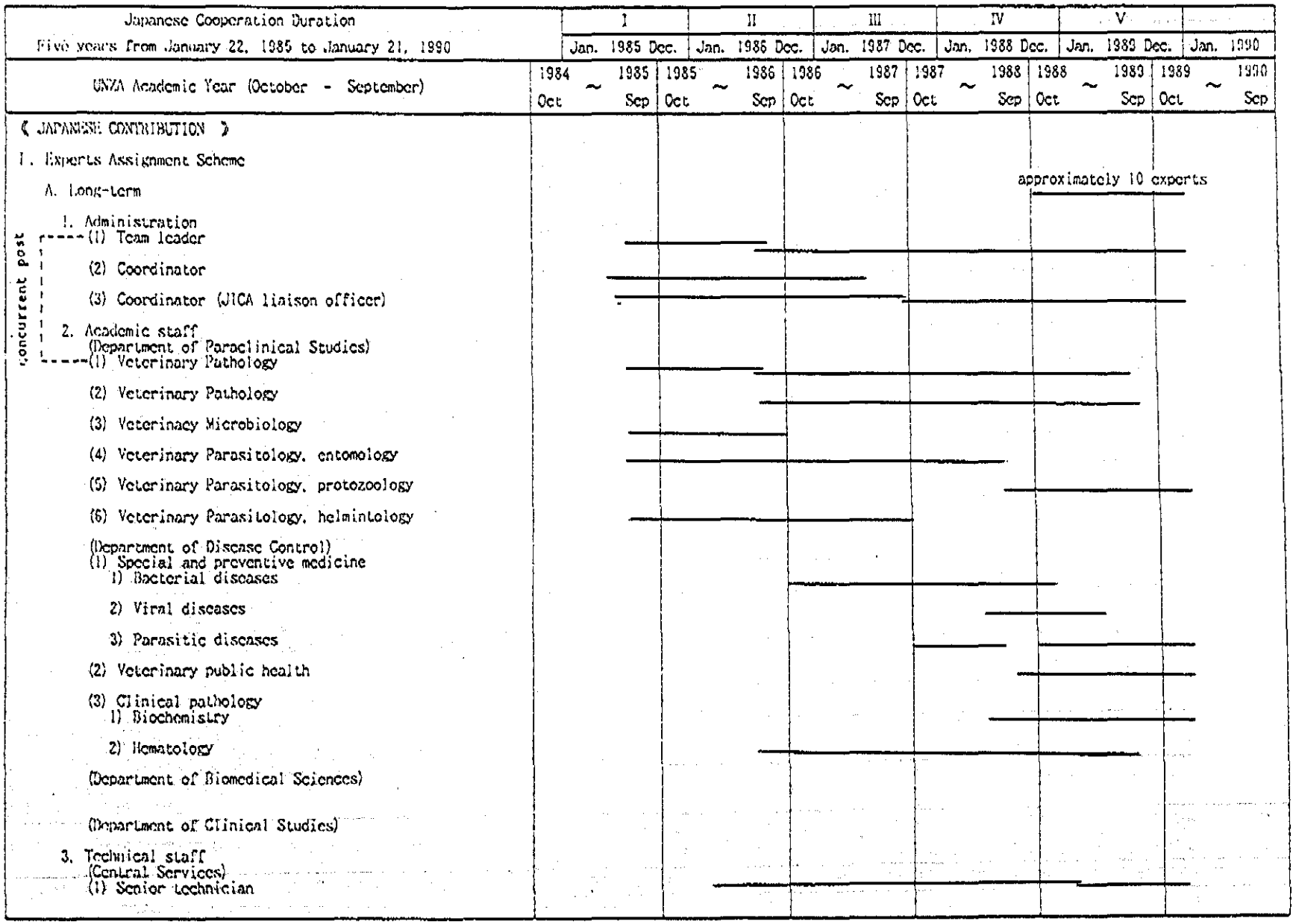
Japanese Cooperation Duration	I	II	III	IV	V	
Five years from January 22, 1985 to January 21, 1990	Jan. 1985 Dec.	Jan. 1986 Dec.	Jan. 1987 Dec.	Jan. 1988 Dec.	Jan. 1989 Dec.	Jan. 1990
UNZA Academic Year (October - September)	1984 Oct ~ 1985 Sep	1985 Oct ~ 1986 Sep	1986 Oct ~ 1987 Sep	1987 Oct ~ 1988 Sep	1988 Oct ~ 1989 Sep	1989 Oct ~ 1990 Sep
II. Veterinary Research						
1. Survey of animal diseases in Zambia						
(1) Seroepidemiological studies on anaplasmosis and toxoplasmosis			———	———		
(2) Preliminary surveys on pneumonia of domestic animals		———	———	———		
(3) Pathological analysis	———	———	———	———	———	
(4) Studies on transmission mechanism of Rift Valley fever			———	———	———	
(5) Seasonal fluctuation of gastrointestinal helminths and coccidia in sheep and goats	———	———	———	———	———	
(6) Faunal study of adult culicoides (*)	———	———	———	———		
(7) Preliminary survey on viral disease in crocodile				———	———	
(8) Geoepidemiological study on Akabane virus				———	———	
(9) Preliminary study of health and disease in Zambian goats			- - -	- - -		
2. Research on diagnosis of animal diseases						
(1) Indirect fluorescent antibody technique for Rift Valley fever			———			
(2) Complement fixation test for Brucellosis and Paratuberculosis			———			
(3) Rapid agglutination plate test for Brucellosis			———			
(4) Preliminary study on establishment of method of crocodile kidney cell culture				———	———	
(5) Maintenance method of animal cell lines				———	———	
(6) Preliminary neutralization and IFA test for Akabane disease				———	———	
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	———	———	———	———	———	
4. Applied research and dissemination of scientific and technical information				———	———	

(*) Collaboration work on culicoides with NCSR

Japanese Cooperation Duration	I	II	III	IV	V	
Five years from January 22, 1985 to January 21, 1990	Jan. 1985 Dec.	Jan. 1986 Dec.	Jan. 1987 Dec.	Jan. 1988 Dec.	Jan. 1989 Dec.	Jan. 1990
UNZA Academic Year (October - September)	1984 ~ 1985 Oct Sep	1985 ~ 1986 Oct Sep	1986 ~ 1987 Oct Sep	1987 ~ 1988 Oct Sep	1988 ~ 1989 Oct Sep	1989 ~ 1990 Oct Sep
III. Veterinary Extension						
1. Clinical services for the Veterinary Hospital						
(1) Laboratory diagnosis (hematological, biochemical, parasitological, microbiological, serological and histpathological)		———	———	———	———	
(2) Postmortem examination		———	———	———	———	
(3) Technical advices		———	———	———	———	
2. Farm veterinary services						
(1) Laboratory diagnosis (hematological, biochemical, parasitological, microbiological, serological and histpathological)		———	———	———	———	
(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 microbiology in UNZA		———	———	———	———	

Notes: 1. These activitis 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 Water Development and the National Council for Scientific Research.


Japanese Cooperation Duration
Five years from January 22, 1985 to January 21, 1990
I
II
III
IV
V
Jan. 1985 Dec.
Jan. 1986 Dec.
Jan. 1987 Dec.
Jan. 1988 Dec.
Jan. 1989 Dec.
Jan. 1990
UNZA Academic Year (October - September)
1984 ~ 1985 Oct Sep
1985 ~ 1986 Oct Sep
1986 ~ 1987 Oct Sep
1987 ~ 1988 Oct Sep
1988 ~ 1989 Oct Sep
1989 ~ 1990 Oct Sep
《 JAPANESE CONTRIBUTION 》
I. Experts Assignment Scheme
A. Long-term
approximately 10 experts
1. Administration
(1) Team leader
(2) Coordinator
(3) Coordinator (JICA liaison officer)
2. Academic staff
(Department of Paraclinical Studies)
(1) Veterinary Pathology
(2) Veterinary Pathology
(3) Veterinacy Microbiology
(4) Veterinary Parasitology, entomology
(5) Veterinary Parasitology, protozoology
(6) Veterinary Parasitology, helmintology
(Department of Disease Control)
(1) Special and preventive medicine
1) Bacterial diseases
2) Viral diseases
3) Parasitic diseases
(2) Veterinary public health
(3) Clinical pathology
1) Biochemistry
2) Hematology
(Department of Biomedical Sciences)
(Department of Clinical Studies)
3. Technical staff
(Central Services)
(1) Senior technician
concurrent post

Japanese Cooperation Duration	I	II	III	IV	V	
Five years from January 22, 1985 to January 21, 1990	Jan. 1985 Dec.	Jan. 1986 Dec.	Jan. 1987 Dec.	Jan. 1988 Dec.	Jan. 1989 Dec.	Jan. 1990
UNZA Academic Year (October - September)	1984 ~ 1985 Oct ~ Sep	1985 ~ 1986 Oct ~ Sep	1986 ~ 1987 Oct ~ Sep	1987 ~ 1988 Oct ~ Sep	1988 ~ 1989 Oct ~ Sep	1989 ~ 1990 Oct ~ Sep
A. Short-term					several experts annually	
(Department of Paraclinical Studies)						
(1) Microbiology						
1) Virology		—				
2) Immunology		—				
3) Bacteriology						
(2) Pathology		—		—		
(3) Parasitology						
1) Protozoology				—		
(Department of Disease Control)						
(1) Special and preventive medicine						
1) Viral diseases			—	—		
2) Avian diseases			— —	—		
(2) Public Health						
1) Environmental hygiene			—	—		
2) Zoonosis			—			
3) Laboratory animal				—		
(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, Helmintology)			—	—	—	
(4) Teaching assistant (Veterinary Parasitology, Protozoology)			—	—	—	
(5) Teaching assistant (Veterinary Clinical Pathology)			—	—	—	
(6) Teaching assistant (Veterinary Viral Diseases)					—	

Japanese Cooperation Duration	I		II		III		IV		V		
Five years from January 22, 1985 to January 21, 1990	Jan. 1985	Dec.	Jan. 1986	Dec.	Jan. 1987	Dec.	Jan. 1988	Dec.	Jan. 1989	Dec.	Jan. 1990
UNZA Academic Year (October - September)	1984 Oct ~	1985 Sep	1985 Oct ~	1986 Sep	1986 Oct ~	1987 Sep	1987 Oct ~	1988 Sep	1988 Oct ~	1989 Sep	1989 Oct ~	1990 Sep
II. Equipment Supply Scheme Equipment and materials to be provided based on annual supply system	———		———		———		———		———		———	
III. Counterpart Training Scheme Two or three Zambian counterparts to be received in Japan annualy (Technical training and observation)	———		———		———		———		———		———	
IV. Japanese government scholarship(Technical cooperation)									———		———	
V. Special Measures of Model Infrastructure Improvement Programme for construction of veterinary paddock attached to the School of Veterinary Medicine			———									

Notes : 1. ——— full activities

2. —— - —— supplementary activities

Japanese Cooperation Duration: 5 years from January 22, 1985 to January 21, 1990	I			II			III			IV			V			
	Jan. 1985		Dec.	Jan. 1986		Dec.	Jan. 1987		Dec.	Jan. 1988		Dec.	Jan. 1989		Dec.	Jan. 1990
UNZA Academic Year (October ~ July)	1984 Oct.	~ 1985 Jul.	1985 Oct.	~ 1986 Jul.	1986 Oct.	~ 1987 Jul.	1987 Oct.	~ 1988 Jul.	1988 Oct.	~ 1989 Jul.	1989 Oct.	~ 1990 Jul.				
ZAMBIAN RESPONSABILITIES																
I. Counterparts																
1. Head of the Project	———															
2. Academic staff																
(1) Professor	———															
(2) Associate Professor	———															
(3) Senior Lecturer	———															
(4) Lecturer	———															
(5) Chief technician	———															
(6) Technician	———															
(7) Teaching Assistants					———											
3. Administrative Personnel																
(1) Lusaka Compus administration	———															
II. Provision of running expenses of the Project	———															
III. Provision of land, buildings and facilities	———															

仮訳

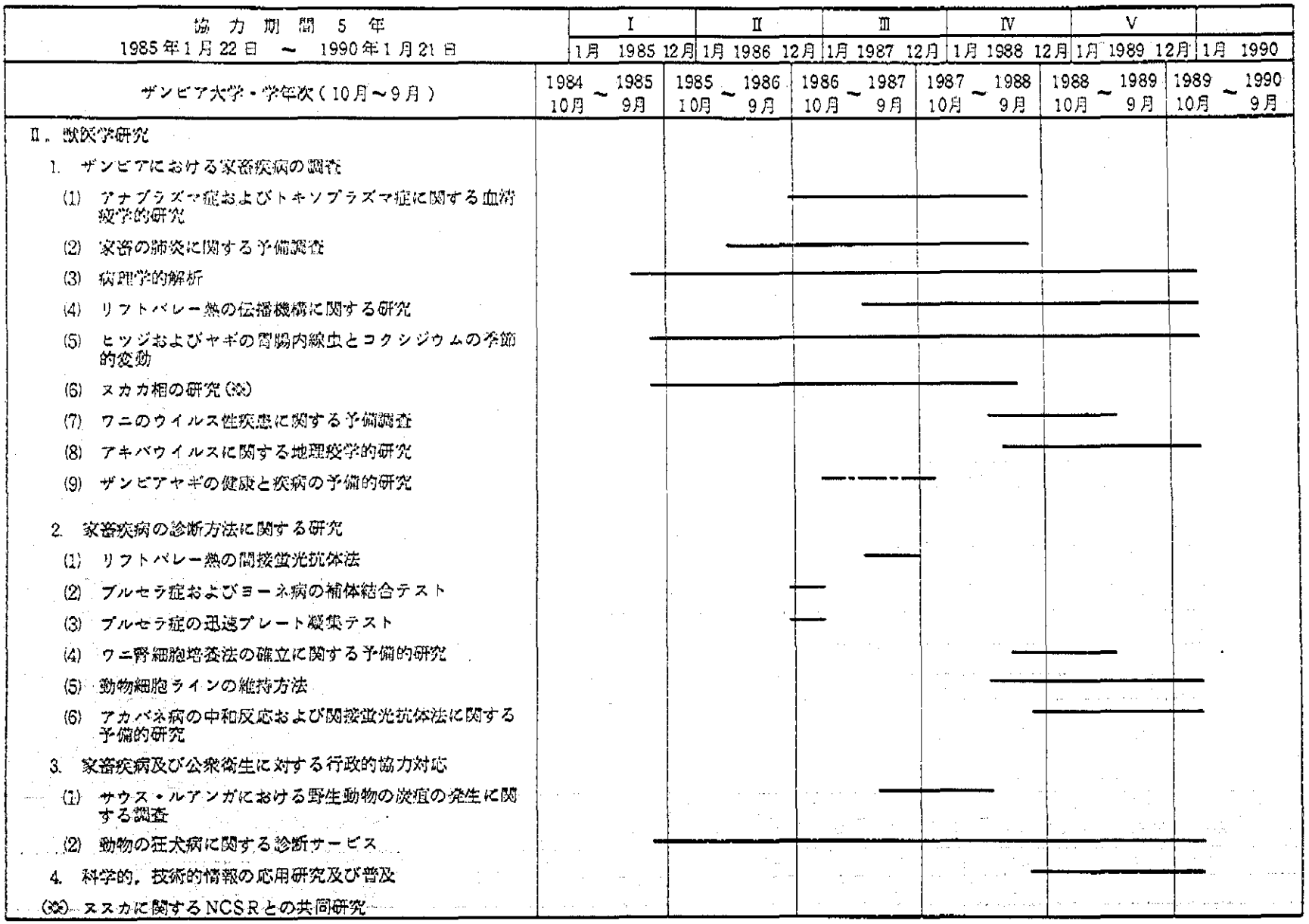
暫定実施計画

協力期間 5年 1985年1月22日 ～ 1990年1月21日		I 1月 1985 12月	II 1月 1986 12月	III 1月 1987 12月	IV 1月 1988 12月	V 1月 1989 12月	 1月 1990
ザンビア大学・学年次（10月～9月）		1984～1985 10月～9月	1985～1986 10月～9月	1986～1987 10月～9月	1987～1988 10月～9月	1988～1989 10月～9月	1989～1990 10月～9月
≪ザンビア大学獣医学部活動計画≫							
Ⅰ．講座開始時期							
1. 生物医学講座							
2. 基礎獣医学講座 （病理学・寄生虫学・微生物学講座）							
3. 疾病予防学講座							
4. 臨床獣医学講座							
Ⅱ．登録学生数							
1. 入学	13（1983）	15	19	20	22	30	30
2. 卒業		－	－	－	13	15	19
3. 計	13	28	47	67	76	91	102
Ⅲ．大学院教育開始時期							

Ⅳ．教職員充足計画

	計画数	現員（含手続中）	不足数
1. 学部長	1		
2. 教授	4		
3. 助教授	11		
4. 講師	16		
5. 薬剤師	1		
6. 放射線技師	1		
7. 主席技官	5		
8. 上級技官	9		
9. 技官	15		
10. 教官助手	5		
11. 秘書	9		
12. 事務員	2		
13. その他	36		
計	115		

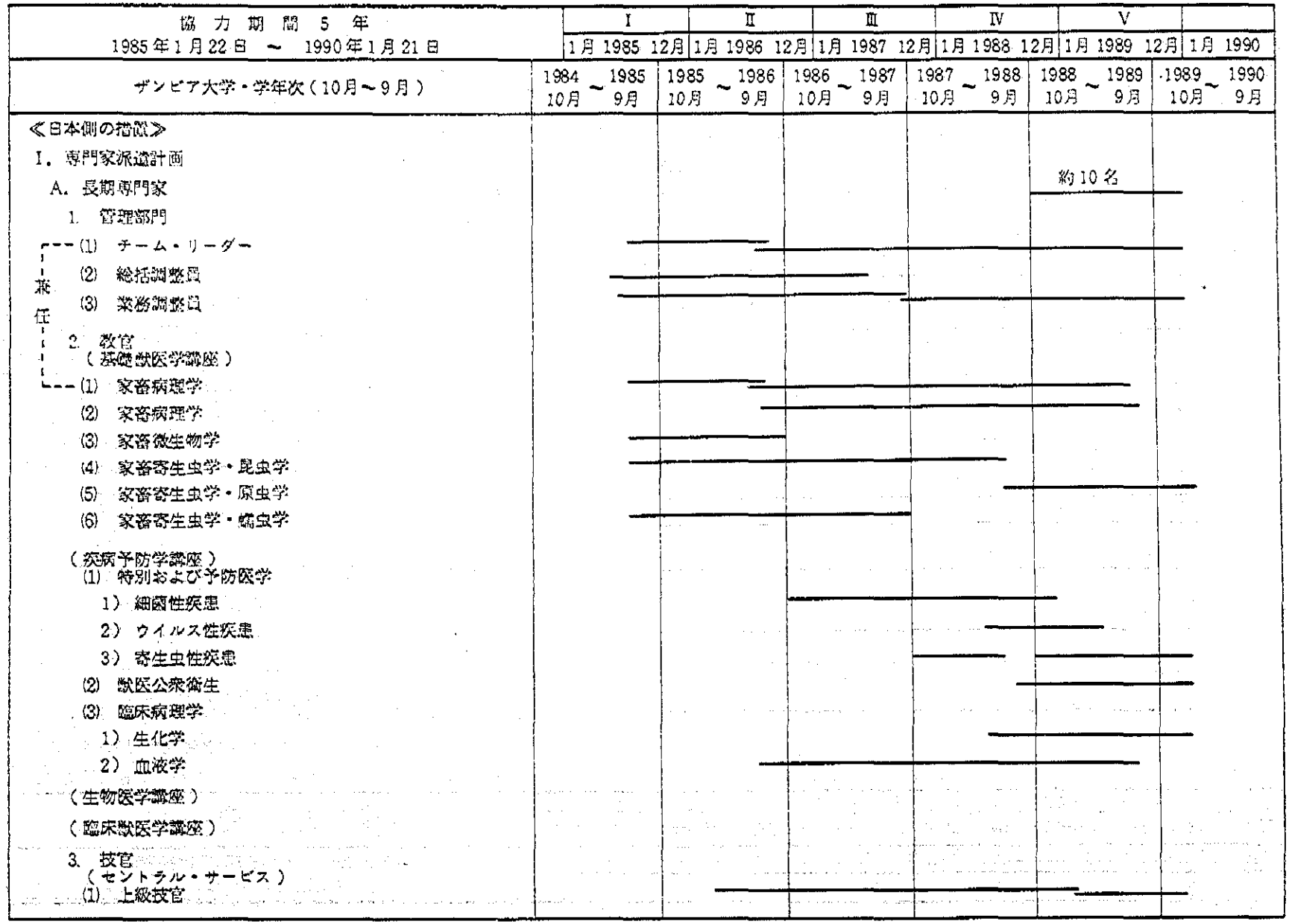
協力期間 5年 1985年1月22日 ～ 1990年1月21日	I 1月 1985 12月	II 1月 1986 12月	III 1月 1987 12月	IV 1月 1988 12月	V 1月 1989 12月	1月 1990
ザンビア大学・学年次（10月～9月）	1984 10月 ～ 1985 9月	1985 10月 ～ 1986 9月	1986 10月 ～ 1987 9月	1987 10月 ～ 1988 9月	1988 10月 ～ 1989 9月	1989 10月 ～ 1990 9月
≪プロジェクト活動計画≫						
I. 獣医教育						
1. カリキュラム企画						
生物医学講座						
基礎獣医学講座						
疾病予防学講座						
臨床獣医学講座						
2. 獣医学部学生に対する講義，実験実習，野外実習						
生物医学講座						
基礎獣医学講座						
疾病予防学講座						
臨床獣医学講座						
3. 教材の開発						
(1) ミクロおよびマクロ標本						
(2) 視聴覚教材						
(3) 講義ノート						
薬理学（生物医学講座）						
(4) 実習用セット						
(5) 実験動物						
4. 獣医情報，データの収集・分析						
(1) 参考書						
(2) プリント						
(3) 関連機関からのデータ						
5. その他の獣医教育に必要な活動						
(1) 機材及び施設の維持管理，修理及び改造						
(2) 機材の製作及び開発						
(3) 実験室作業に関する技官の教育						


協力期間 5年
1985年1月22日 ～ 1990年1月21日
I
II
III
IV
V
1月 1985 12月
1月 1986 12月
1月 1987 12月
1月 1988 12月
1月 1989 12月
1月 1990
ザンビア大学・学年次（10月～9月）
1984 10月 ～ 1985 9月
1985 10月 ～ 1986 9月
1986 10月 ～ 1987 9月
1987 10月 ～ 1988 9月
1988 10月 ～ 1989 9月
1989 10月 ～ 1990 9月
II．獣医学研究
1. ザンビアにおける家畜疾病の調査
(1) アナプラズマ症およびトキソプラズマ症に関する血清疫学的研究
(2) 家畜の肺炎に関する予備調査
(3) 病理学的解析
(4) リフトバレー熱の伝播機構に関する研究
(5) ヒツジおよびヤギの胃腸内線虫とコクシジウムの季節的変動
(6) ヌカカ相の研究(※)
(7) ワニのウイルス性疾患に関する予備調査
(8) アキバウイルスに関する地理疫学的研究
(9) ザンビアヤギの健康と疾病の予備的研究
2. 家畜疾病の診断方法に関する研究
(1) リフトバレー熱の間接蛍光抗体法
(2) ブルセラ症およびヨーネ病の補体結合テスト
(3) ブルセラ症の迅速プレート凝集テスト
(4) ワニ腎細胞培養法の確立に関する予備的研究
(5) 動物細胞ラインの維持方法
(6) アカバネ病の中和反応および間接蛍光抗体法に関する予備的研究
3. 家畜疾病及び公衆衛生に対する行政的協力対応
(1) サウス・ルアンガにおける野生動物の炭疽の発生に関する調査
(2) 動物の狂犬病に関する診断サービス
4. 科学的，技術的情報の応用研究及び普及
(※) ヌカに関するNCSRとの共同研究

協力期間 5年 1985年1月22日 ～ 1990年1月21日	I	II	III	IV	V	
	1月 1985 12月	1月 1986 12月	1月 1987 12月	1月 1988 12月	1月 1989 12月	1月 1990
ザンビア大学・学年次（10月～9月）	1984 10月 ～ 1985 9月	1985 10月 ～ 1986 9月	1986 10月 ～ 1987 9月	1987 10月 ～ 9月	1988 10月 ～ 9月	1989 10月 ～ 1990 9月
Ⅲ．獣医学普及						
1. 家畜病院における臨床活動						
(1) 研究室診断（血液学，生化学，寄生虫学，微生物学，血清学および組織病理学）		―	―	―	―	―
(2) 剖検		―	―	―	―	―
(3) 技術指導		―	―	―	―	―
2. 野外獣医臨床サービス						
(1) 研究室診断（血液学，生化学，寄生虫学，微生物学，血清学および組織病理学）		―	―	―	―	―
(2) 剖検		―	―	―	―	―
(3) 技術顧問		―	―	―	―	―
3. 家畜衛生及び公衆衛生知識の普及						
(1) 水質環境調査				―		
(2) ニューカッスル病診断法の地域病性鑑定所職員への指導		―	―	―	―	―
(3) 農業祭および科学技術展示会への参加				―	―	―
※農学部，医学部，自然科学部等他の関連学部との協力活動						
(1) 理学部および農学部の大学院学生の指導			―	―	―	―
(2) UTHにおける人獣共通感染症に関する講義		―	―	―	―	―
(3) UNZAにおける微生物学マスターコースの諮問委員会の委員		―	―	―	―	―

（注）1. これらの活動は，主としてザンビア大学獣医学部基礎獣医学講座及び疾病予防学講座を中心に実行される。

2. プロジェクトの研究活動に関連して，農業水資源開発省獣医ツエツエ防除局所管の中央獣医研究所，家畜衛生学院及び国家科学研究会議と積極的に連携し協力を行う。


協力期間 5年
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I
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ザンビア大学・学年次（10月～9月）
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1986 10月 ～ 1987 9月
1987 10月 ～ 1988 9月
1988 10月 ～ 1989 9月
1989 10月 ～ 1990 9月
≪日本側の措置≫
I．専門家派遣計画
A．長期専門家
約10名
1．管理部門
兼任
(1) チーム・リーダー
(2) 総括調整員
(3) 業務調整員
2．教官
（基礎獣医学講座）
(1) 家畜病理学
(2) 家畜病理学
(3) 家畜微生物学
(4) 家畜寄生虫学・昆虫学
(5) 家畜寄生虫学・原虫学
(6) 家畜寄生虫学・蠕虫学
（疾病予防学講座）
(1) 特別および予防医学
1）細菌性疾患
2）ウイルス性疾患
3）寄生虫性疾患
(2) 獣医公衆衛生
(3) 臨床病理学
1）生化学
2）血液学
（生物医学講座）
（臨床獣医学講座）
3．技官
（セントラル・サービス）
(1) 上級技官

協力期間 5 年 1985年1月22日 ～ 1990年1月21日	I 1月 1985 12月	II 1月 1986 12月	III 1月 1987 12月	IV 1月 1988 12月	V 1月 1989 12月	 1月 1990
ザンビア大学・学年次（10月～9月）	1984 10月 ～ 1985 9月	1985 10月 ～ 1986 9月	1986 10月 ～ 1987 9月	1987 10月 ～ 1988 9月	1988 10月 ～ 1989 9月	1989 10月 ～ 1990 9月
B. 短期専門家					年間5名程度	
（基礎獣医学講座）						
(1) 微生物学		—				
1) ウイルス学		—				
2) 免疫学						
3) 細菌学						
(2) 病理学		—		—		
(3) 寄生虫学						
1) 原虫学				—		
（疾病予防学講座）						
(1) 特別および予防医学						
1) ウイルス性疾患			—	—		
2) 鶏病			— —	—		
(2) 公衆衛生						
1) 環境衛生			—	—		
2) 人獣共通感染症			—			
3) 実験動物				—		
（生物医学講座）						
（臨床獣医学講座）						
(1) 放射線学						
C. 青年海外協力隊						
(1) 教官助手（家畜病理学）			—	—	—	—
(2) 教官助手（家畜細菌性疾患）			—	—	—	—
(3) 教官助手（家畜寄生虫学・蠕虫学）			—	—		
(4) 教官助手（家畜寄生虫学・原虫学）			—	—	—	—
(5) 教官助手（獣医臨床病理学）			—	—	—	
(6) 教官助手（獣医ウイルス性疾患）					—	—

協力期間 5年 1985年1月22日 ～ 1990年1月21日	I 1月 1985 12月	II 1月 1986 12月	III 1月 1987 12月	IV 1月 1988 12月	V 1月 1989 12月	 1月 1990
ザンビア大学・学年次（10月～9月）	1984 10月 ～ 1985 9月	1985 10月 ～ 1986 9月	1986 10月 ～ 1987 9月	1987 10月 ～ 1988 9月	1988 10月 ～ 1989 9月	1989 10月 ～ 1990 9月
II. 機材供与計画	———	———	———	———	———	———
年次供与計画に基く供与資機材						
III. カウンターパートの研修受入計画 年間2～3名のザンビア人カウンターパートの日本受入 （技術研修及び視察）	———	———	———	———	———	———
IV. 文部省国費留学生（技術協力特別枠）					———	———
V. 獣医学部付属牧場造成に係るモデル・インフラ整備計画の特別措置		———				

注 1. ——— 全面的な活動

2. — — — 補足活動

協力期間 5 年 1985年1月22日 ～ 1990年1月21日	I		II		III		IV		V		
	1月 1985	12月	1月 1986	12月	1月 1987	12月	1月 1988	12月	1月 1989	12月	1月 1990
ザンビア大学・学年次（10月～9月）	1984 10月 ～ 1985 9月		1985 10月 ～ 1986 9月		1986 10月 ～ 1987 9月		1987 10月 ～ 1988 9月		1988 10月 ～ 1989 9月		1989 10月 ～ 1990 9月
≪ザンビア側の措置≫											
Ⅰ．カウンターパート											
1. プロジェクトの長	———		———		———		———		———		
2. 教 官											
(1) 教授	———		———		———		———		———		
(2) 助教授	———		———		———		———		———		
(3) 上級講師	———		———		———		———		———		
(4) 講師	———		———		———		———		———		
(5) 主席技官	———		———		———		———		———		
(6) 技官	———		———		———		———		———		
(7) 教官助手					———		———		———		
3. 事務職員											
(1) ルサカ・キャンパス管理部	———		———		———		———		———		
Ⅱ．プロジェクト運営費の確保	———		———		———		———		———		
Ⅲ．土地・建物及び施設の確保	———		———		———		———		———		

THE UNIVERSITY OF ZAMBIA

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

HANDBOOK 1987-88

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

HAND BOOK

1987/88

THE UNIVERSITY OF ZAMBIA

P.O. BOX 32379, Lusaka

TEL: 251985

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Medical Officer:	Dr. A.D. Patel, MB BS (Bda).

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Mines:	Dr. E.H. Jere, BSc. (Rutgers) MSc. PhD (Lehigh)
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Veterinary Medicine:	Prof. R.J. Thomas, BVSC,, M.Sc. (Bristol) Ph.D. (Dunelm) MRCVS.

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SCHOOL OF VETERINARY MEDICINE

Dean:	Prof. R.J. Thomas, BVSC., MSc. (Bristol) PhD. (Dunelm) MRCVS
Assistant Dean:	Dr. G.S. Pandey, B.Sc.Ag., (Agra) B.V.Sc. & A.H., M.V.Sc. (J. Puv)
Administrative Assistant to the Dean:	Mr. A. Chishimba, Dip.per. Admin. BA (Zambia)

STAFF OF THE SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF BIOMEDICAL SCIENCES

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Dr. D.N. Kisauzi:	B.Vet.Med. (Makerere) Dip. Nutr. Physiol. (Copenhagen) Ph.D (Dublin)
Dr.F. Sabbe:	Dr. Med. Vet. (Ghent) Dip. Trop. Anim. Hlth and Prod. (Antwerp)
Dr. K. Sabbe-Verstraelen	Dr. Med. Vet. (Ghent)
Mr. K.M.Mizinga:	M.Sc. (Tuskegee) B.Sc. Agric (Zambia) (On study leave)
Ms. Z.Mbawa	B.Sc. (Zambia) S.D.F. (On study leave)

DEPARTMENT OF PARACLINICAL STUDIES

Prof.Y.Fujimoto:	DVM, PhD (Hokkaido) (Head of Department)
Prof. S.Kitaoka:	MSc. PhD (Hokkaido)
Dr.K.M. Gabbar:	BVSc. (Khartoum) PhD (Cambridge)
Dr.J.E.D.Mlangwa:	BVM (Nairobi) DPVM, PhD (Copenhagen)

DEPARTMENT OF PARACLINICAL STUDIES Continued

Dr. M.M. Musonda:	BVM (Nairobi) Dip. Vet. Path. F.R.V.C. (Uppsala) (On study leave)
Dr. Y. Chihaya:	D.V.M., MSc. PhD (Hwate)
Mr. R. Muimo	B.Agric.Sc. (Zambia), MSc. (bangor)

DEPARTMENT OF CLINICAL STUDIES

Dr. T.O.M. Koomson:	DVM, MSc. (Amadu Bello) GRAD. DIP.AGR. (South Wales)
Dr. M. Bafi-Yeboa:	Tierazt, Dr. Med. Vet. (Giessen) Dip. Soc. St. (Leeds)
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Dr. C.J. Siame:	M. MSc. (Karl-Marx)
Dr. J. Baer:	TIERARZT, (Hannover) Dr. Med. Vet. (Munich)
Dr. G. Bau:	D.V.M. (Copenhagen)
Dr. S. Baer:	TIERARZT, (Hannover)
Dr. M.A. Thomas:	BVSc. (Bristol) M.R.C.V.S.
Dr. M.N. Shandomo:	BVSc. (E.Africa); Dr.Vet.Med. (Vienna), MSc.(Edin) (On leave of absence)
Mr.M. Lufungulo	B.Agric.Sc. (Zambia) (On study leave)

DEPARTMENT OF DISEASE CONTROL

Prof. K. Shimizu:	DVM, PhD. (Hokkaido) (Head of Department)
Dr. T. Sato:	DVM, (Hokkaido) PhD. (Tokyo)
Dr. Y. Tada	MSc. (Hokkaido)
Dr. G.S. Pandey:	B.Sc. Ag. (Agra) B.V.Sc. & A.H., M.V.Sc. (J. Puv)
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Prof. S. Falade,	D.V.M. (Ibadan), D.V.M. (A.B.U), Dip. BACT. (Lond), Ph.D (Ibadan)

SENIOR TECHNICAL STAFF

Mr. R.V.J. Griffin:	HNC, MIAT, AIST, Chief Technician, Central Services
Mr. G.A. O'Mahony:	F.I.M.I.S. F.A.M.L.S. Dip. Med.Lab.Mgt. Chief Technician, Biomedical Sciences.
Mr. J. Daka:	CGL Part I, II & III, Sci. Lab. Tech. SIMA Cert. (Scientific Instrumentation) Senior Technician, Biomedical Sciences.
Mr. S. Chisembe	Sci.Lab. Tech. HND Applied Biology. Acting Chief Technician, Paraclinical Studies.
Mr. William, D. Ulaya:	City and Guilds Parts I & II (Sc. Lab. Tech.) SIMA Certificate in Scientific Instrumentation Senior Technician - Disease Control
Mr. Wilmot Benkele:	Dip. Med. Lab. Tech. (EHC). Cert. Vet. Lab. Tech. (London). Advanced Cert. Vet. Lab. Tech. and Radiology (Kobe-Japan) Cert. Agric. Teaching Methodology (Wolverhampton), Acting Chief Technician, Disease Control.
Mr.T. Hiruta:	Certificate in Industrial Science & Technology. Senior Technician, Central Services.

THE UNIVERSITY OF ZAMBIA

SAMORA MACHEL SCHOOL OF VETERINARY MEDICINE

Introduction

In July, 1975, it was announced that the University of Zambia was to establish its own School of Veterinary Medicine to meet the critical shortage of qualified veterinary personnel, and with the cooperation of the Government of Japan the construction of a large and well equipped school 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 14 students to be admitted to the veterinary course in October 1983.

The intake is being increased annually in order to graduate a maximum of 30 Veterinarians each year. The programme of study extends over 6 years and leads to the award of the degree of Bachelor of Veterinary Medicine of the University of Zambia.

The first year is spent studying basic sciences in the School of Natural Sciences. Preclinical studies including biochemistry, biomathematics, agronomy, genetics, animal breeding, anatomy and physiology are taught collectively by the schools of Natural Sciences, Agriculture and Veterinary Medicine during the second and third years. The remaining 3 years are devoted to Paraclinical and Clinical work in the departments of Paraclinical Studies, Clinical Studies and Disease Control.

Dr. M.N. Shandomo, LVSc. (E.Africa); Dr.Vet.Med. (Vienna); MSc. (Edin.). Served as Co-ordinator of the School as in its formative stages - 1983-85.

Deans of the School 1985-87

1985-87 Prof. R.P. Lee - MA (Dub.), Ph.D. (NUI), MRCVS.

1987 - Prof. R.J. Thomas - BVSc. MSc. (Bristol) Ph.D. (Dunelm) MRCVS

THE BOARD OF STUDIES

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

The Dean, School of Veterinary Medicine, Chairman.

The Dean, School of Agricultural sciences or his representative.

The Dean, School of Natural Sciences, or his representative.

The Dean, School of Medicine or his representative.

The Head, Department of Animal Sciences, School of Agricultural Sciences or his representative.

The Librarian, or his representative.

The Dean of Students, or his representative.

The Director of Veterinary and Tsetse Control Services
Ministry of Agriculture and Water Development or his representative.

Dr. C.O. Oparaocha, Veterinary Surgeon in private practice.

All members of the academic staff of the School of Veterinary Medicine appointed on a full time basis for teaching and research.

The Administrative Assistant to the Dean as its Secretary.

A student representative of the preclinical and paraclinical years.

A student representative of the clinical years.

OBJECTIVES

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

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

(b) the promotion of public health through the control of zoonotic diseases, and other infections and intoxications transmissable to man through animal products,

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

(d) teaching and academic curriculum development in veterinary education,

(e) appropriate livestock and poultry products industries.

ENTRANCE REQUIREMENTS AND REGULATIONS

1. Entrance Requirements to the School of Veterinary Medicine

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

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

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

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

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

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

GENERAL ENTRANCE REQUIREMENTS

1. APPLICANTS OFFERING QUALIFICATIONS OF THE GENERAL CERTIFICATE OF EDUCATION OR THE CAMBRIDGE OVERSEAS SCHOOL CERTIFICATE

(i) Every applicant must hold passes in at least five approved subjects.
(ii) The passes must include (a) English, (b) either Mathematics or an approved science subject.
(iii) "Approved subjects" are those approved for this purpose by the University of Zambia.
(iv) Attainment of Grade A, B or C in an examination at the Ordinary Level of the G.C.E. or on the Cambridge School Certificate will be regarded as a pass for the satisfaction of these entrance requirements.

2. APPLICANTS OFFERING QUALIFICATIONS OF OTHER EXAMINING BOARDS

Qualifications of other Examining Boards may be recognized in complete satisfaction of the requirements listed in paragraph 1 above, if, in the opinion of the University Senate, the standard of examination is sufficiently high to warrant recognition for this purpose.

3. MATURE APPLICANTS

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

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

5. REQUIREMENTS OF THE SCHOOL OF NATURAL SCIENCES

A pass in an O level subject shall for the purpose of the entrance requirements of the School of Natural Sciences be deemed to be the attainment of Grade A, B or C in that subject.

Within the framework of the G.C.E. all candidates require passes in five O level subjects as follows:-

(1) A pass in Mathematics in which the minimum acceptable standard that must be attained is Grade B;

(2) A pass in Chemistry AND Physics OR Physical Science;

(3) A pass in one further approved science subject preferably Biology;

(4) A pass in English Language;

(5) A pass in one other approved subject.

THE QUOTA SYSTEM

Selection for the various quotas takes place at the end of the first year and is based on Grades obtained in the first year and the students preferences.

STAFF DEVELOPMENT PROGRAMME

In 1989 when the first students graduate from the school a staff development programme will commence to provide academic training opportunities. Staff Development Fellows are eligible to study for higher degrees, both within the University and overseas. There will also be a junior staff category of House Surgeon for the further practical training of new graduates.

HIGHER DEGREE IN THE SCHOOL OF VETERINARY MEDICINE

The degrees of M.Sc. and Ph.D. by research are available in the School of Veterinary Medicine, under general University regulations, and several M.Sc. postgraduate students are already at work in the Biomedical Department. The school postgraduate committee is currently involved in planning on M.Sc. by coursework in clinical studies, which should be available in 1989.

REGULATIONS FOR THE BACHELOR OF VETERINARY MEDICINE DEGREE

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

2. The normal length of undergraduate studies is six years subject to modifications arising from application of regulations concerning courses credited from other programmes and progression from one year of study to the next. The programme consists of 1 veterinary, two preclinical & three clinical years and includesthree periods of clinical practicall vacational training.

3. University Examinations

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

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

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

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

7. A student will be deemed to have passed a course if she/he obtains 50% of the total available mark and satisfies the examiners. The percentages allocated to theory, practical and oral examinations, and continuous assessment carried out during the year, are shown on pages 7 and 8.

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

   A+ Distinction
   A Distinction
   B+ Merit
   B Merit
   C+ Pass
   C Borderline Pass
   P Pass in Supplementary Examination

D Fail
NE No Examination Taken
LT Left without permission
F Fail in Supplementary Examination

These shall be approved by the University Senate.

9. Supplementary Examinations

On the recommendation of the Board of Studies the Senate may allow a student to take supplementary examinations as follows:-

(a) To qualify for a supplementary examination a student must have passed at least 2 full courses with a grade of C+ or better and

(b) Have performed satisfactorily in the continuous assessment part of the failed course.

(c) Supplementary examinations will be granted to a student in not more than two full course equivalents in any one year. The grade awarded will be P (Pass) or F (Fail).

10. Repeat Year

The Senate may on the recommendation of the Board of Studies allow a candidate to repeat all courses in the following academic year where-

(a) A candidate does not qualify for a supplementary examination in a failed course.

(b) A candidate fails less than three full courses

(c) A candidate fails a supplementary examination

11. The University Senate may, on the recommendation of the Board of Studies allow a student who has been prevented from participating satisfactorily in classes due to illness or other unavoidable cause to Repeat the Year. This must be supported by suitable documentation.

12. Exclusion

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

(a) Any candidate who fails three or more full courses in any one year.

(b) Any candidate who fails a course in a repeat year.

(c) This regulation shall not apply to final year students who are allowed to repeat the year once, and may subsequently take any failed course on a part-time basis.

13. Deferred Examination

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

14. Withdrawals

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

Course Assessment:

Course	Continuous Assessment	University Examinations Theory	Practical oral
	%	%	%
VMB 210	40	60	
VMB 211	30	60	10
CA 210	40	60	
AGG 331	40	60	
AGA 332	40	60	
AGC 342	40	60	

Course	Continuous Assessment %	University Examinations Theory %	Practical Oral %
VMB 310	20	50	30
VMB 315	30	40	30
VMB 320	30	50	20
VMB 325	30	50	20
AGA 320	40	60	
VMB 303			Satisfactory/ Unsatisfactory
VMP 410	30	40	30
VMB 425	30	50	20
VMP 430	30	40	30
VMP 440	30	40	30
AGA 450	40	60	
VMP 403			Satisfactory or Unsatisfactory
VMD 510	30	40	30
VMC 511	30	50	20
VMD 515	30	40	30
VMC 520	30	40	30
VMC 521	30	40	30
VMC 532	30	40	30
VMD 511	40	40	20
VMC 503	-	-	-

Course	*CA	*UWE	*UPOE
VMD 610	30	40	30
VMD 612	30	50	20
VMD 615	30	40	30
VMC 620	30	40	30
VMC 631	30	40	30
VMD 611	40	50	10

*CA = Continuous Assessment

*UWE = University Written Examination

*UPOE = University Practical/Oral Examination

Vacation Practicals

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

(a) VMB 303 Farm Practicals involving staying on a selected farm within Zambia for 7 weeks during the vacation after the 3rd year.

(b) VMP 403 Laboratory practicals at either the Goverment Central Veterinary Research Institute or the School of Veterinary Medicine for 10 weeks during the vacation after the 4th year.

(c) VMC 503 Veterinary Clinical practicals in Government or private veterinary practice and abattoirs within Zambia for 10 weeks during the vacation after 5th year.

Qualifications

The degree of Bachelor of Veterinary Medicine (B.Vet.Med.) will be conferred on those that have fulfilled the requirements of the sixth year examination after approval by the Senate of the University of Zambia.

THE CURRICULUM

COURSES AND DEGREE STRUCTURE

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

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

The digits used to number the courses should be interpreted as follows:

The 1st digit indicates the year the course is normally taken.
The 2nd digit indicates the subject area.
The 3rd digit indicates the time the course is taken.

(0) - full course taught over one academic year
(1) - half course taught in the first half year
(2) - half course taught in the second half year
(3) - half course taken during the vacation
(5) - half course taught throughout the academic year.

The courses are as follows:

Year	Course No.	Subject Matter	Unit
1	BZ 110	Introductory Biology	1
	C 110	Introductory Chemistry	1
	M 110	Introduction to Mathematics	1
	P 110	Introductory Physics	1
2	VMB 210	Veterinary Anatomy and Physiology	1
	VMB 211	Veterinary Embryology	½
	CA 210	Organic Chemistry and Biochemistry	1
	AGG 311	Probability and Statistical analysis	½
	AGA 332	Animal Genetics and Breeding	½
	AGA 342	Forage crops Pasture and Range Management	½

Year	Course No.	Subject Matter	Unit
3	VMB 310	Veterinary Anatomy	1
	VMB 315	Veterinary Histology	½
	VMB 320	Veterinary Physiology	1
	VMB 325	Veterinary Biochemistry	½
	AGA 320	Basic and Applied Animal Nutrition	1
	VMB 303	Farm Practicals	½
4	VMP 410	Veterinary Pathology	1
	VMB 425	Veterinary Pharmacology	½
	VMP 430	Veterinary Microbiology	1
	VMP 440	Veterinary Parasitology	1
	AGA 450	Animal Production	1
	VMP 403	Veterinary Laboratory Practicals	½
5	VMD 510	Veterinary Medicine I	1
	VMC 511	Veterinary Therapeutics and Toxicology	½
	VMD 515	Veterinary Clinical Pathology I	½
	VMD 511	Veterinary Epidemiology & Economics	½
	VMC 520	Veterinary Surgery I	1
	VMC 521	Veterinary Radiology	½
	VMC 532	Veterinary Reproduction and Obstetrics I	½
	VMC 503	Veterinary Clinical Practicals	½
6	VMD 610	Veterinary Medicine II	1
	VMD 611	Veterinary Public Health	½
	VMD 630	Veterinary Public Health (1988/89)	1
	VMD 612	Veterinary Extension & Jurisprudence	½
	VMD 615	Veterinary Clinical Pathology II	½
	VMC 620	Veterinary Surgery II	1
	VMC 631	Veterinary Reproduction and Obstetrics II	½

FIRST YEAR (NATURAL SCIENCES)

Course No.	Description:

BZ 100 INTRODUCTORY BIOLOGY

An introduction to the most important areas of biology.

Basic cell biology, animal structure, function and physiology.

Plant structure, function and physiology.

Genetics, ecology, evolution and diversity of animals and plants.

C 110 INTRODUCTORY CHEMISTRY

An introductory course in chemistry covering such topics as stoichiometry, atomic and molecular structure, the periodic table, chemical reactions, equilibrium and simple organic compounds.

M 110 INTRODUCTION TO MATHEMATICS

Preliminary algebra, introctory set theory, elementary functions, analytical geometry and vector analysis, matrices and determinants, calculus.

P 110 INTRODUCTORY PHYSICS

Basic principles of matter structure, density and mechanical properties. Geometrical optics reflection, refraction, mirrors, lenses and simple instruments. Mechanics - kinematics, dynamics, circular, statics and dynamics of motion, the rigid body, simple harmonic motion, vibrations and waves.

Heat - thermometry, simple kinetic theory, specific heat and elements of thermodynamics.

Electricity and magnetism - electrostatics, D.C. circuits, the magnetic fields, A.C. circuits.

Modern physics - the atom and radio activity.

Associated laboratory course.

SECOND YEAR

VMB 210 Veterinary Anatomy and Physiology

General Anatomy: terminology, body regions, different organ systems. Neuroanatomy: the skull and vertebral column. Central Nervous

Central Nervous System: brain and spinal cord. Blood supply to the CNS. Peripheral Nervous System. Autonomic Nervous System.

Physiology: general cell physiology. Nerve cell and muscle physiology Blood and body fluids. General endocrinology.

Cytology: The cell and its components: cell membrane, nucleus, organelles, cytoplasm. Cell division

General Histology: Epithelia; connective, supportive, muscular and nervous tissues.

VMB 211 VETERINARY EMBRYOLOGY

Introduction, primary organs of reproduction and gametogenesis, fertilisation, cleavage and formation of morula and blastula, gastrulation and formation of the germ layers.

Establishment of the embryonic membranes and body structures, development of organ systems in avian and mammalian embryos.

CA 210 ORGANIC CHEMISTRY AND BIOCHEMISTRY

Broad coverage of organic chemistry whose treatment is factual in nature.

Bonding in organic compounds, isomerism, reaction of organic functional groups and their derivatives, synthetic transformations and compounds of biological importance. Analytical chemistry, precipitation, acid base, redox equilibria. The major constituents of the cell, their chemical structure, function and analysis including carbohydrates, lipids, proteins and nucleic acids.

Biochemical energetics and properties of enzymes.

AGG 311 PROBABILITY AND STATISTICAL ANALYSIS

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

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

AGA 332 ANIMAL GENETICS AND BREEDING

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

Quantitative genetics - variation, normal distribution, correlation, regression, heritability, repeatability.

Selection - response to selection, types of selection, selection methods.

Breeding systems - in-breeding, out-breeding, crossbreeding, coefficient of breeding, relationship, heterosis, species - hybridization.

Artificial Insemination in livestock genetic improvement.

AGA 342 FORAGE CROPS PASTURE AND RANGE MANAGEMENT

Introduction to forage crops, historical review of evolution of grass and legumes.

Physiology of grasses and legumes, establishment of pasture and legumes; pasture management and carbohydrate reserves, antiquality factors, forage conservation and wet storage systems, seed production.

Forage quality and utilisation, grazing behaviour.

THIRD YEAR

VMB 310 VETERINARY ANATOMY

Systematic and topographic anatomy of the integument, cardiovascular, respiratory, digestive, reproductive, urinary and lymphatic systems. Eye and ear. Avian anatomy.

Locomotion; Skeleton, joints, muscles, blood vessels and nerves of the limbs.

VMB 315 VETERINARY HISTOLOGY

Histological structure of the nervous, cardiovascular, respiratory, digestive, reproductive, urinary and lymphatic systems. Eye and ear. Endocrine system. Integument.

Reference will be made to anatomical, physiological and histopathological conditions whenever appropriate.

VMB 320 VETERINARY PHYSIOLOGY

Descriptive and quantitative functional analysis of the nervous, cardiovascular, digestive, endocrine, reproductive and renal systems. Homeostasis. Special senses. Avian physiology. Throughout the course normal body function will be emphasized as a foundation for pathology, surgery, clinical veterinary medicine and diagnosis of disease.

VMB 325 VETERINARY BIOCHEMISTRY

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

AGA 320 BASIC AND APPLIED ANIMAL NUTRITION

Chemical constituents of plants and animal body, properties and role of water in nutrition. Digestion and metabolism of protein carbohydrates, fat and minerals in ruminants and non-ruminants; methods of estimating feed value, chemical analysis, gross energy, digestion coefficients, total digestible nutrients, digestible energy, net energy, starch equivalent. Nutrient sources - protein, energy, minerals and vitamins for farm animals.

Principles and practical computation of rations for livestock and poultry. Specific aspects of the nutrition of livestock, poultry and fish, feed-lot nutrition.

Nutritional diseases, emphasis on metabolic pathway disorders and food toxins.

Nutrition of pet animals. (for Veterinary students).

FOURTH YEAR

VMP 410 VETERINARY PATHOLOGY

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

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

Pathology and pathogenesis of infectious diseases of domestic animals and poultry.

VMB 425 VETERINARY PHARMACOLOGY

Introduction. Drug action, absorption, administration, transport and distribution, excretion. Pharmacokinetics. Principles of pharmacotherapeutics.

Drugs acting on the digestive tract, central and autonomic nervous systems, respiratory and circulatory systems. Sedatives, anaesthetics and control of peripheral nerves. Drugs affecting tissue metabolism, the endocrine and reproductive systems.

VMP 430 VETERINARY MICROBIOLOGY AND IMMUNOLOGY

Historical background, classification, morphology, characteristics and physiology of pathogenic organisms including bacteria, mycoplasma, rickettsia and fungi.

Microbiological techniques and methods, sterilization and disinfection.

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

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

VMP 440 VETERINARY PARASITOLOGY

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

AGA 450 ANIMAL PRODUCTION

The husbandry of meat animals with special coverage of beef, sheep, goats, pigs, rabbits and poultry production in Zambia. Different animal management systems. The husbandry of dairy animals with emphasis on systems of dairying, growth and development of dairy animals, breeding plans for dairy cattle, milk production, milking and milk quality. Livestock Production Economics.

FIFTH YEAR

VMD 510 VETERINARY MEDICINE I

General Medicine

Clinical examination, general systemic states, diseases of the new born diseases of the liver cardio-vascular system, the blood & blood forming organs, the respiratory, urinary, endocrine, nervous and musculo skeletal systems, the skin; metabolic, nutritional and stress induced disorders.

Special Medicine

Bacterial, fungal and viral diseases; diseases caused by mycoplasma, chlamydia, rickettsia, protozoa, helminths and arthropod parasites miscellaneous diseases of importance diseases of fish and wildlife.

Preventive Medicine

Livestock movement, quarantine procedures vaccination and disease prophylaxis management systems, general methods of disease control and herd health programmes.

VMC 511 VETERINARY THERAPEUTICS AND TOXICOLOGY

The principles of chemotherapy, Antiseptics and disinfectants, antibiotics and antibacterials, antifungal and antiviral agents. Internal and external antiparasitic drugs.

Drug compatability. Drug administration. Vaccines.

Introduction to Toxicology. Mineral or inorganic substances, organic compounds, drugs, pesticides, poisonous plants, mycotoxins, venoms and stings, radio-active materials, plant teratogenic effects, infertility and abortions, carcinogenesis.

VMD 511 VETERINARY EPIDEMICLOGY AND ECONOMICS

Introduction to Veterinary Epidemiology and Economics; Measuring diseases and production in populations; Causality and approaches to its study; Descriptive Studies; Data and sources of Data; Screening tests and sero-epidemiology; Survey and sampling; Data Management and Computers in animal health; Surveillance and disease monitoring; Investigation of disease outbreaks; Analytical observational Studies; Intervention Studies; Disease transmission and spread; Principles of disease control including increasing host resistance; Introduction to animal health management economics.

VMD 515 VETERINARY CLINICAL PATHOLOGY I

Cytology

Definition of descriptive terms, collection and examination of blood and bone marrow, blood smears, normal blood values, blood cell counting, haemoglobin, erythrocyte, sedimentation rate and packed cell volume, protein, fibrinogen, erythrocyte and its disorders, leukocyte, and its disorders, thrombocytopenia and haemostatic disorders, interpretation of haemotological findings in relation to disease.

Clinical chemistry

Kidney function test, urine analysis, clinical enzymology, liver function tests, pancreatic function tests, cardio-vascular disease tests, calcium, phosphorus and metabolic borne disorders, cerebro-spinal fluid examination, serum biochemistry abnormalities, thyroid function.

Dermatology

Mycotic and parasitic skin lesions.

Autopsies

Attendance at Post-Mortem examinations in the Clinic.

VMC 520 VETERINARY SURGERY AND ANESTHESIA I

General principles of surgery, sterile techniques, fluid therapy, and shock burns, wounds and other skin lesions.

The principles of veterinary anaesthesia. Local, regional, spinal, epidural and lumber analgesia; premedication and general anaesthesia.

Surgery of the digestive system, organs of the head and neck, abdominal incisions, hernia, thorax, heart and great vessels, urogenital system, liver, spleen, pancreas, tendons muscles and fascia, fractures and joints, neoplasms, amputations, vertebral column and spinal cord.

VMC 521 VETERINARY RADIOLOGY

History, radiation safety, the X-ray machine and accessory equipment, density and contrast, radiographic positioning, development, and interpretation, radio-therapy.

VMC 532 VETERINARY REPRODUCTION AND OBSTETRICS I

Revision of the anatomy of the reproductive system and associated structures, the physiology of reproduction, embryo development, foetal membranes and the gestation period, development anomalies and teratology, physiological parturition and the postpartum period, care of the new born, the pathology of the gestation period and infertility in male and female animals.

The types, causes, diagnosis and treatment of dystocia, procedures before handling dystocia and obstetrical operations. Surgery of the female and male genital organs. The physiology and pathology of lactation, surgical operations of the mammary glands.

SIXTH YEAR

VMD 610 VETERINARY MEDICINE II

Continuation of Veterinary Medicine I with more practical orientation and ambulatory services.

VMD 511/611 VETERINARY EPIDEMIOLOGY AND ECONOMICS

Introduction to Veterinary Epidemiology and Economics; Measuring diseases and production in populations; Causality and approaches to its study; Descriptive Studies; Data and sources of Data; Screening tests and sero-epidemiology; Survey and sampling; Data Management and Computers in animal health; Surveillance and disease monitoring; Investigation of disease outbreaks; Analytical observational Studies; Intervention Studies; Disease transmission and spread; Principles of disease cotrol including increasing host resistance; Introduction to animal health management economics.

VMD 612 VETERINARY EXTENSION AND JURISPRUDENCE

Administration and Organisation of Veterinary Services and Schemes for livestock development, and animal health. The relationship of the veterinarian to the public and colleagues. The administration of Legal Acts involving animal health and production, veterinary clinical services, and livestock and wild-life control.

VMC 615 VETERINARY CLINICAL PATHOLOGY II

Continuation of Veterinary Clinical Pathology I

VMC 620 VETERINARY SURGERY II

Continuation of the Veterinary Surgery I with more practical orientation and ambulatory services.

VMD 630 VETERINARY PUBLIC HEALTH

Role of the Veterinarian in Veterinary Public Health.

Food hygiene: Food use of organs and tissues The processing and preservation of food, Prevention of food-borne diseases and food-poisoning. General pathology of animals in relation to food hygiene and food additives.

Meat and milk hygiene: The contruction, layout and sanitation of abattoirs, management of animals before slaughter, ante-mortem inspection, method of slaughter, Preperation of carcasses and offals, Post-mortem veterinary inspection. Bacteriology of meat and milk, and factors spoiling quality of milk and meat. Treatment and use or disposal of by-product and condemned meat. Inspection and control of poultry meat and fish. The hazards of milk hygiene and processing.

Environmental hygiene: Air and water pollution. Bacteriological and bio-chemical inspection of drinking and industrial water. Treatment of the industrial and general abandoned materials and water, Eradication of injurious insects, rats and others.

Zoonoses: Definition and classification of zoonoses, Epidemiology of zoonotic diseases, Prevention and erradication of zoonoses.

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

VMC 631 VETERINARY REPRODUCTION AND OBSTETRICS

Continuation of Veterinary Reproduction and Obstetrics I with more practical orientation and ambulatry services.

Artificial Insemination:

Historical background, advantages and disadvantages, revision of genital organs; semen production composition, conservation, the art of artificial insemination, conception rates, no-return rates and factors affecting the reproductive efficiency; records, oestrous synchronisation and embryo transfer in livestock improvement programme management and selection of artificial insemination animals, application of artificial insemination in livestock improvement programmes, the organisation of national artificial insemination services.

1987/88 SESSIONAL DATES

TERM I (1987)

WEDNESDAY	2nd December	Registration of 1st Year students
THURSDAY	10th December	Registration of Returning students
MONDAY	14th December	Classes Begin
MONDAY	28th December	Late Registration
FRIDAY	19th February (1988)	Last Classes of Term
SATURDAY	20th February	Holidays Begin

TERM II (1988)

SUNDAY	6th March	Students Return
MONDAY	7th March	Classes Resume
FRIDAY	13th May	Last Classes of Term
SATURDAY	14th May	Holidays Begin

TERM III (1988)

SUNDAY	29th May	Students Return
MONDAY	30th May	Classes Resume
FRIDAY	29th July	Last Classes of Term
MONDAY	8th August	Examinations Begin
FRIDAY	26th August	Examinations End
SATURDAY	27th August	Holidays Begin
FRIDAY	9th September	Board of Examiners Meeting
THURSDAY	6th October	Senate Examinations Committee
MONDAY	10th October	Publication of Results.

JICA