



Veterinary Education and curriculum development in Tanzania

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1. Introduction

1.1 Background

- Tanzania is a low income rural economy country with Livestock sector contributing around 18%GDP (1/3 of agriculture GDP)
- This sector also supports the income levels of poor livestock keepers
- Livestock is one of Tanzania's leading sectors of the economy
- The country has the third largest cattle population in Africa after Ethiopia and Sudan.

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Background cont...

- The development of Livestock sector is basically coordinated by the MLDF
- It has the mandate of overall resources for sustainable management and development of livestock and fisheries
- Achievement of the Millennium Development Goals, National Strategy for Growth and Reduction of Poverty
- Improved livelihood of livestock and fisheries dependent communities
- Food safety and security without compromising animal welfare and environmental conservation.

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Background cont...

- In order to achieve the above goals effective and appropriate veterinary services would be required.
- This should be supported by a relevant veterinary education system.

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Background cont..

- The degree level veterinary training in Tanzania started in 1976 (UDSM)
- 1984, FVM established (SUA)
- The veterinary degree programme enrolled the first undergraduate students in 1976.
- The first batch consisted of 12 students where 9 of these graduated in 1980.
- At the moment there are 114 BVM students in various years of undergraduate training where only 12 are females.


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Faculty of Veterinary medicine

- The Faculty of Veterinary Medicine, which is one of the 4 faculties of Sokoine University of Agriculture in Tanzania
- It is located 3 km from the centre of Morogoro municipality on the northern slopes of Uluguru Mountains.



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Faculty of Veterinary medicine

- The FVM is headed by the Dean and has six departments
- Veterinary Anatomy;
- Veterinary Pathology
- Veterinary Physiology, Biochemistry, Pharmacology and Toxicology
- Veterinary Microbiology and Parasitology
- Veterinary Medicine and Public Health
- Veterinary Surgery and Theriogenology
- These departments offer courses in related aspects to veterinary and other students in the university.


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Faculty of Veterinary medicine

- The FVM has a modern veterinary teaching hospital, as a clinical teaching facility and a referral veterinary hospital for the country
- The hospital has a modern theatre capable of performing different surgical operations on both large and small animals
- The hospital is supported by specialized laboratory services offered from the different departments within the Faculty
- Other facilities include animal kennels and pens, which serve as wards for sick animals and the isolation facility for rabid animals
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1. 2.Mission

- The Faculty of Veterinary Medicine has a threefold mission; training, research and provision of advisory services and patient care to animals belonging to a broad range of clients.
- The implementation of the Faculty's mission is guided by University's corporate strategic plan for 2005-2010.


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1.3 Human resource base

- The faculty has a well-trained academic manpower of 50 PhD holders; 19 with Masters and 10 have BVM/BSc qualifications.
- The technical cadre involves about 28 staff trained at B.Sc and Diploma levels in Laboratory Technology who are supported by 13 certificate holders and laboratory assistants.

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2. Veterinary Education

2.1 Undergraduate training

- The main goal of the faculty is to provide education to the undergraduate students in order to enable them to apply and disseminate knowledge and technology related to the veterinary profession, biotechnology, laboratory and other allied sciences to the public.

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2.1.1 Bachelor of Veterinary Medicine (BVM)

- **Admission Requirements**
- 1. Advanced Level passes in Chemistry, Biology/Zoology, Physics, Mathematics, Geography or Agricultural Science.
- Of these, at least THREE must be passed at the Principal Level and must include Biology/Zoology.
- The total points must be not less than four. Such candidates must also have O-level passes in English and Mathematics.
- **OR**

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Admission cont...

- 2. Holders of an appropriate Diploma from accredited colleges such as Diploma in Animal Health, Diploma in Animal Production, Diploma in Wildlife, Diploma in Fisheries or equivalent qualifications, with at least, a credit.
- A holder of such a Diploma should have four passes in either of the following Ordinary Level subjects: Biology/Zoology, Chemistry, English, Physics, and Geography, Practice in Agriculture and Mathematics or equivalent.
- **OR**

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Admission cont...

- 3. First degree in life sciences
 - Such candidates can be exempted from doing certain courses upon submission of evidence of having done and passed such courses.
- 4. Candidates from other Veterinary Faculties / Schools may join in at any stage of the programme upon providing satisfactory evidence of having done and passed core courses that are supposed to have been done before the applied entry point.

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BVM degree programme

- The five-year semesterised BVM is designed to provide more flexibility in the studies,
- Improved practical training and to cater for new subjects such as wildlife medicine, aquaculture, biotechnology, livestock economics and business practice.
- The curriculum is designed to provide opportunities that will allow students to acquire the knowledge, skills, experiences, values and attitudes necessary to become high-quality animal health specialists to meet the challenges of both the private and public sectors.

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BVM degree cont...

- In addition to treatment and prevention of diseases in domestic and wild animals
- The veterinary students are trained in safeguarding the public against the diseases that may be acquired through consumption of food of animal origin or interaction with animals.

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2.1.2 Curriculum development

- First BVM curriculum was developed in 1976 which was a four year programme which was implemented up to 1992; thereafter the Curriculum has been reviewed periodically.
- The main goal was to produce veterinarians who would be able to initiate efficient animal disease control and curative programmes, conduct research in animal diseases affecting livestock, enhance animal welfare and safeguard human health.
- In addition the veterinary graduate would be knowledgeable in the fields of animal production, farm economics

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1985 BVM curriculum review

- Increased duration of the BVM degree from 4 to 5 years
- Included new courses in wildlife management and fish diseases

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1999 BVM curriculum review

- Government policy of ceasing to be the main employer of the graduates.
- Increased privatization and new investments in the country (more animal species to attend)
- The revised curriculum put more emphasis on imparting entrepreneurship skills, research and integration of basic and applied knowledge


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2001 BVM curriculum Review

- Semester curriculum for the BVM degree
- The Main Objective was to produce qualified and practically competent veterinarians who can contribute more to the development of the animal industry so as to provide more animal protein to the people and increasingly contribute to the national GDP.


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2008 BVM curriculum Review

- Since the introduction of the semester system at SUA in 2001/2002, deficiencies in the various degrees curricula, BVM curriculum inclusive, have been noted.
- One such problem was the adjustment of credit hours into whole numbers and which led to an increase of contact hours from 4,745 of the 1999 term system curriculum to 5,315 in the referred semester curriculum.
- Thus the average contact hours for core courses alone in the 2001 BVM curriculum was 1,063 that is higher than the FAO recommendation of not more than 800 hours per year (Report of the FAO Expert Consultation on Veterinary Education in Africa, 1984 Recommendation 5.2.2).


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2008 BVM curriculum cont...

- Apart from these deficiencies, the prolongation of the BVM degree from 4 to 5 years in 1991 aimed at a lecture-free 5th year - engaged in clinical work.
- A growing sign of regional integration that will require graduates to be able to compete with graduates from neighboring countries
- Furthermore, the 2003 Tanzania Veterinary Act stipulates courses that students must do while on their undergraduate training in order to qualify for registration by the Tanzania Veterinary Council (The Veterinary Act 2003, Section 52. Training standards for registration, enrolment and enlistment Regulations).


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Justification for 2008 review

- Need to address deficiencies observed in previous curriculum
- In view of the 2005 tracer study there was a need to equip BVM graduates with knowledge skills and attitudes necessary in a competitive job market
- Need to make curriculum address advances in veterinary science and technology such as modern diagnostic techniques and emerging diseases


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Justification cont..

- Need to address requirements for BVM graduates to qualify registration with the Tanzania Veterinary Council.
- Need for having a curriculum that addresses the current national, Need to make the curriculum attract more students
- Regional and international needs such as AU/IBAR, OIE and FAO standards.


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Objectives

- **Overall Objectives**
- Bachelor of Veterinary Medicine curriculum is to produce qualified and practically competent Veterinarians who can contribute more to the development of the animal industry,
- Public health sector,
- biomedical research,
- Improvement of living standards of the people of Tanzania and of the world in general.


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Specific Objectives

- 1. To equip BVM graduates with professional skills that match to the current national, regional and international standards.
- 2. To introduce demand driven courses-attractive to the increased number of school leavers and college graduates.


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Specific Objectives cont...

- 3. To impart high quality skills and knowledge to BVM graduates- technological development in delivery of veterinary and allied services.
- 4. To produce highly competent BVM graduates who will be able to successfully compete in the labour market as well as in self employment.
- 5. To inculcate knowledge to BVM graduates on new emerging needs- the increasing demand for animal welfare, public health and international standards for animal trade

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Attributes of the BVM programme

Students pursuing the BVM degree will be required to take a minimum of 112 credits, for 9 semesters and divided into 3 levels each semester 12.5 credits

- 1. Preclinical courses – Semesters 1 and 2 of Year 1
- 2. Paraclinical courses – Semesters 3 and 4 of Year 2
- 3. Clinical courses – Semesters 5 onwards
- In semester 10 students will go for field attachment-lecture free!

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Field attachment

Students shall rotate or be assigned to the following stations (Total 15 weeks):-

- 1 Wildlife
- 1 Fisheries and Aquaculture
- 1 Abattoir
- 1 Food / Feed processing plants
- 1 Pharmaceutical industries / TFDA / TBS
- 2 Diagnostic laboratory (VIC/CVL, NIMR)

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Field attachment cont...

- 3 Veterinary clinics
- 3 District Veterinary offices
- (Administration; Outreach; NGOs, CBOs)
- 2 Report preparation and presentation

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2.2 Postgraduate training

- The faculty offers postgraduate training at both masters and doctoral levels.
- Two masters programmes: MVM and MPVM
- In the forthcoming academic year 2009/10 the Faculty will introduce 17 new Master of Science degree programmes
- These will include MSc in Cell Biology, Molecular Biology, Applied Microbiology, Public Health and Food Safety, Epidemiology etc.

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Postgraduate cont...

- The faculty also offers PhD training in veterinary and allied fields.
- These include veterinary medicine epidemiology, surgery, theriogenology, pathology, pharmacology and toxicology, public health
- In basic sciences such as anatomy, physiology, biochemistry, microbiology, parasitology and molecular biology.

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3. Veterinary Graduates

- So far FVM has produced over 400 hundred veterinarians with an average of 12 graduates per year.
- FVM is still the main source of veterinarian in Tanzania.
- There is a few numbers of veterinarians who were trained outside this country.

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Quality assurance

- Internal QA-internal examination, Department/Faculty/Senate
- External QA-external examiners, VCT
- Auditing/IUCEA/Accreditation by TCU.
- Establishment of QA Bureau

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4. Research activities

- The faculty values both basic and applied research.
- Over the past 30 years-extensive research in diverse themes on improving the productivity and control of diseases in domestic animals, and public health.

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Research activities cont...

- In management and productivity of village chickens, epidemiology of important cattle diseases such as tick-borne diseases, CBPP, tuberculosis, brucellosis, helminths and wild animal diseases.
- Studies on methods for controlling ticks, ecosystem health, treatment of trypanosomiasis and ethnoveterinary practises.

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Research cont...

- Improvement of performance of dairy cattle through hormonal assays, and wildlife resource assessment using high-tech satellite tracking methods.
- Animal welfare research such as control of pain by researching on different anaesthesia protocols and surgical techniques


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5. Cooperation with other Universities/institutes

- In furtherance of technology transfer and sharing knowledge and experiences the Faculty of Veterinary Medicine values cooperation with other institutions.
- The Faculty has longstanding cooperation with other universities in Europe, North America, East Africa and SADC region. A number of collaborative projects are being conducted under the framework of collaboration, between these universities.


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6. Veterinary Paraprofessionals Education

- The Veterinary paraprofessional training programme is implemented by six livestock training institutes (LITs), Tengeru, Morogoro, Mpwapwa, Madaba, Temeke and Buhuri.
- LITs offer two year courses in diploma in animal health, animal production
- Certificate course in animal health and production.


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Paraprofessional education cont..

- Certificate Animal Health and Production- O level, no specialization
- Animal Health Diploma-A level, Certificate holders, specialization


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7. Continuing Professional Development

- Short courses/tailor made courses for livestock economics and business practice
- Animal Welfare seminar for new graduates

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Challenges to delivery of veterinary education

- Emerging diseases-both animals and humans
- Organizational structures of veterinary services
- Increase the number of graduates-prospective students do not like Veterinary science- attributed to 5/6 years, sponsorship etc
- Salaries and personal emoluments do not much with the intensive veterinary training programme
- Private sector can not absorb all veterinary graduates.

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9. Recommendations

- The Universities in the SADC countries should strive to maintain high standards of veterinary degrees as per accreditation requirements of established organs.
- Harmonization of veterinary curricula (core courses) in veterinary schools within SADC-veterinary graduates compete for job markets within the region
- Smooth continuity of studies for veterinary students-partially or fully in any other veterinary school other than the one registered for.

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Thank you for your attention

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