

**REPORT FROM A MISSION TO THE  
FACULTY OF VETERINARY MEDICINE  
AT THE SOKOINE UNIVERSITY OF  
AGRICULTURE,  
MOROGORO, TANZANIA**

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## **PREFACE**

The consultants underline that this report is a review of the current situation at the Faculty of Veterinary Medicine (FVM) and not a comprehensive evaluation of the faculty. The final report is based on the study of relevant documents (Annex 1), field visits and discussions with people at FVM and institutions related to the faculty. A draft report was submitted to the Vice-chancellor at Sokoine University of Agriculture (SUA) July 3<sup>rd</sup> 1996. The recommendations and conclusions in the final report correspond with those outlined in the draft report.

Oslo, September 4th 1996

Arve Lund  
Noragric

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## **ACKNOWLEDGEMENTS**

The consultants would like to express their gratitude to the Dean at the Faculty of Veterinary Medicine, Dr. R. Mosha and the academic staff for their hospitality and cooperation during our stay at Sokoine University of Agriculture. The assistance of all other persons and institutions listed in the programme (Annex 2) is acknowledged. The discussions were conducted with openness and transparency.

The Royal Norwegian Embassy (RNE) was responsible for the overall planning of the mission. Discussions with the Ambassador and his co-workers in addition to assistance during preparation of the draft report were very much appreciated.

## **ACRONYMS**

AUN	Agricultural University of Norway
BVM	Bachelor of Veterinary Medicine
DANIDA	Danish International Development Agency
DASP	Department of Animal Science and Production
PhD	Doctor of Philosophy
DPSR	Directorate for Postgraduate Studies and Research
FVM	Faculty of Veterinary Medicine
GOT	Government of Tanzania
ICE	Institute of Continuing Education
MSc	Master of Veterinary Science
NCVM	Norwegian College of Veterinary Medicine
NORAD	Norwegian Agency for Development Cooperation
RNE	Royal Norwegian Embassy
RVAU	Royal Veterinary and Agricultural University
SDP	Staff Development Programme
SUA	Sokoine University of Agriculture

## **1 SUMMARY**

### **1.1 General**

From the 22th of June to the 4th of July Dr. Arve Lund, Centre for International Environment and Development Studies, Noragric, Agricultural University of Norway (AUN) and Dr. Eivind Liven, Norwegian Animal Health Authority visited Sokoine Agriculture University (SUA) at Morogoro to make an appraisal of a possible future support from NORAD to FVM at SUA. The Danish International Development Agency (DANIDA) had supported the faculty from 1980 up to 1994.

### **1.2 Current status at FVM**

#### *1.2.1 Undergraduate teaching*

The curriculum has been recently revised. In 1990 the curriculum was extended from 4 to 5 years with the 5th year concentrating on clinical practicals. The students express a general satisfaction with the curriculum in most fields. The annual intake of students has been approximately 25. For 1996 40 students are supposed to be enrolled. By year 2000 the prospective enrollement is 50 students.

#### *1.2.2 Postgraduate training*

The FVM offers postgraduate training on Master and PhD levels. The master programmes are allocated to each department and consist of one year course work and a second year with research and dissertation. A new postgraduate diploma/master degree is being proposed within tropical animal health and production involving several departments and other faculties in the same project. The PhD programme is a 4 year study. Most of the candidates take their degrees abroad. PhD candidates normally recruit to the scientific staff at FVM. PhD and to some extent master programmes have been carried out or otherwise linked to Denmark, Germany, Kenya, Norway, Russia, Sweden, UK and USA.

#### *1.2.3 Research and competence*

There are several research programmes. These are normally attached to masters and PhD programmes. Research topics focus on infectious diseases and animal production. The present competence of academic staff is good. The recruitment is too low to replace scientific staff in the years to come. Little priority seems to be given to the areas of meat inspection and artificial insemination. There is a shortage on properly trained technical staff. In the last few years it has become increasingly difficult to attend relevant international academic fora.

Equipment is generally oldfashioned and needs repair or replacement. Some updated equipment is not in use. Chemicals and drugs are scarce or completely missing.

#### *1.2.4 Infrastructure*

There is a general absence of supporting functions at FVM. The workshop at FVM is not in a position to maintain equipment and instruments adequately. The workshop has at present only one technician. System for maintenance and repair should be strengthened in advance of any procurement of instruments, equipment as well as computers. Other faculties at SUA also need the same type of service.

A unit for logistics responsible for purchasing, storing and surveilling of equipment, reagents etc. should be established at the FVM

The buildings seem to be in a reasonable good condition.

#### *1.2.5 Finances and cost units*

The government is responsible for the salaries and allowances covering approximately 10-15% of the running costs needed. The sponsorships, which specifically should be linked to research programmes, partly cover additional running costs. DANIDA reports state that the overall funding of running costs from the government was approximately 10%. The low support from the government has put teaching, research and extension activities at FVM in an immediate crisis.

The cost units attached to the Deans office are 1) the small animal unit, 2) the clinics, 3) vehicles and tractors at FVM, 4) computer-room, 5) FVM mini library, 6) the workshop and 7) the audiovisual unit.

#### *1.2.6 Extension and collaboration*

Non-FVM units emphasize that FVM should pay more attention to collaboration inside and outside the university. There is a general shortage of means to link the FVM to the agriculture society in Morogoro area and in Tanzania. Due to lack of transport, equipment and drugs, the extension workers in the field are also without means to advise in disease control and livestock production. The isolation of the FVM is therefore bilateral. This situation hampers the FVM in its goal to be a referral unit in Tanzania.

Academic isolation both at a national and international level, was underlined as a major problem impairing teaching and research. In this context it was mentioned that the contact internationally in the past had been directed mostly to European countries

### **1.3 Recommendations**

#### *1.3.1 General*

FVM which is the only centre for veterinary medicine in Tanzania, faces a rather critical situation. Therefore, FVM should be given support by NORAD. The fact that NORAD gives considerable attention to other faculties at SUA further justifies a NORAD-involvement.

Attention should be paid to the following principles:

- realistic and appropriate level of support also considering the aspect of sustainability
- stepwise realisation based on results obtained
- documentation of priorities regarding curriculum and research at department level as well as for FVM as a whole
- linking of FVM activities to extension work and continuing education
- development of infrastructure
- establishment of collaboration both within SUA, on national and international levels

### *1.3.2 Equipment, literature etc*

FVM is on the edge of crisis due to lack of updated equipment, literature and infrastructure. Therefore, priority should be given to

- laboratory and clinical equipment
- procurement of updated textbooks, preparation of compendia and other needed tools for teaching
- access to international journals and periodicals
- means to supply graduates with basic kits to enable them to establish veterinary service in rural areas

Any purchase of equipment must be relevant for a sustainable level of teaching, research and extension activities.

### *1.3.3 Research*

A research strategy plan should be prepared identifying programmes/projects given priority with emphasis on applied research relevant for livestock diseases in Tanzania. Attention should be paid to the realistic level of research within the areas of infectious diseases and animal production systems.

### *1.3.4 Collaboration*

Priority should be given to establish cooperation with other African universities. In relevant areas collaboration involving the Norwegian College of Veterinary medicine (NCVM) and other veterinary institutions in Europe should be encouraged. Cooperation with other faculties and departments at SUA is equally important.

### *1.3.5 Infrastructure*

Strengthening of the workshop in a joint venture with other faculties at SUA should be given high priority. A well functioning workshop at SUA/FVM is a prerequisite for the maintenance of instruments and equipment. The workshop must have the necessary space, equipment and competence.

Maintenance of buildings etc. needs attention and funding should be allocated for this purpose. A plan for maintenance must be developed.

A unit for logistics should be established with the responsibility to purchase, store and surveille equipment, reagents etc.

### *1.3.6 Extension and continuing education*

A plan for FVM's contribution to extension work and continuing education should be developed. It is important to link the FVM/SUA to the rural community in Morogoro area and in the country as such. NORAD-support should therefore be given to an extension programme at FVM involving local farmers and extension workers as well as other departments, faculties and institutes at SUA.



## 2 INTRODUCTION

During the first annual meeting between Sokoine University of Agriculture (SUA) and the Norwegian Agency for Development Cooperation (NORAD) 8-9 February 1996 under the new "Frame agreement on continued Norwegian support to Sokoine University of Agriculture", Faculty of Veterinary Medicine (FVM) submitted a project proposal requesting NORAD for support (Annex 3). NORAD approved the project proposal and a limited budget for 1996/97. In addition, it was suggested to carry out a study of the FVM in order to obtain adequate information upon which future support could be based. Dr. Arve Lund, Noragric, Centre for International Environment and Development Studies, Agricultural University of Norway (AUN) and Dr. Eivind Liven, Norwegian Animal Health Authority, were appointed to undertake the mission.

A study proposal including terms of reference was prepared by SUA (Annex 4) and formed the basis for the consultants. The main objective of the study was to formulate a proposal for continued Norwegian support to FVM over the next 3 years. The work should comprise background information on FVM and suggest possible areas of support.

The consultants decided to put emphasis on:

- acquisition of information concerning the current situation at FVM
- certain principles and guidelines as a basis for programme development and future support from NORAD
- identification of major constraints for appropriate functioning of the faculty
- identification of areas of support

Estimation of costs would not be calculated at this stage. Certain principles and guidelines had to be in place before details on expenditures should be discussed. The consultants have considered the FVM in a wider context.

The field part of the mission was accomplished in the period June 22. - July 4. 1996. According to a revised programme (Annex 2) discussions with the following institutions/people took place:

- the Norwegian ambassador in Tanzania and his co-workers; introduction and debriefing
- the Dean and the Heads of the departments at FVM; introduction and debriefing
- the Dean and the associate Dean of FVM
- academic staff at each department at FVM
- 4 undergraduate students at FVM
- 7 postgraduate students at FVM
- the Head of the Department of Animal Science and Production (DASP) at the Faculty of Agriculture, SUA
- the Director of the Directorate of Postgraduate Studies and Research (DPSR), SUA
- the Director at the Institute of Continuing Education (ICE), SUA
- the governmental livestock officer in the Morogoro region
- the governmental livestock officer in Morogoro district

- the Acting Chief Veterinary Officer at Ministry of Agriculture and Livestock Development, Dar es Salaam

The mission made a brief survey of buildings and other premises at FVM and to some extent at other SUA-units (DASP, the university farm and the library).

### **3 BACKGROUND**

The FVM buildings were officially opened in 1986. Financial support from the Danish International Development Agency (DANIDA) and cooperation with the Royal Veterinary and Agricultural University (RVAU) in Denmark have been of major importance in the establishment of the FVM. The Danish support lasted from 1979 till 1994. Briefly, the DANIDA support included:

#### *Phase 1*

Construction of buildings, supply of equipment and vehicles, technical assistance personnel and scholarships for a Staff Development Programme (SDP), contribution to recurrent costs

#### *Phase 2*

Supplementary investments, maintenance of buildings, equipment and vehicles, technical assistance personnel and scholarships for SDP

#### *Phase 3*

Further consolidation of the manpower development programme

#### *Phase 4*

Phasing out support including rehabilitation of clinics and classrooms, replacement of vehicles and equipment

When DANIDA pulled out in 1994 the FVM was a well equipped faculty offering an internationally recognized 5 year Bachelor of Veterinary Medicine (BVM) degree programme with an annual intake of approximately 25 students. The SDP and training of technicians had been completed, although DANIDA still provides scholarships for a limited number of postgraduate students. The FVM was manned and equipped to undertake research activities relevant for livestock production in Tanzania and to supervise postgraduate students.

Due to failure to fulfill financial obligations by the Government of Tanzania (GOT) and lack of support from other countries, FVM has experienced severe constraints since the withdrawal of DANIDA. DANIDA assessed the sustainability of the FVM and also outlined a strategy for survival of the faculty in the absence of donor support. However, FVM did not manage to maintain the standards from 1994. The FVM faces a critical situation. Therefore, a request for support was submitted to NORAD.

## **4 CURRENT STATUS AT THE FVM**

### **4.1 General**

Veterinary training in Tanzania started in 1976 at the Division of Veterinary Science of the Faculty of Agriculture, Forestry and Veterinary Science at the University of Dar es Salaam. SUA was established in 1984 and the division obtained a faculty status at this university. FVM got modern structures and equipment with assistance from DANIDA. The faculty is located at the main campus of SUA in Morogoro.

#### *4.1.1 Objectives and priorities*

The main objectives are to

- conduct proper teaching at all levels
- perform relevant research
- do extension service

The FVM has a goal to be a referral unit in Tanzania in all veterinary disciplines. Especially the clinical departments are concerned about their ability to be attractive in all outreach sectors. FVM, as other faculties/departments at SUA, has to follow the political concept of privatization implying that the activities of the faculty to a greater extent should be self-sustained. The search for income generating activities is influencing the daily work and the overall priorities. Due to current donor support the other faculties at SUA, at present, seem to dispose of relatively more financial resources than FVM.

Teaching and research follow strategic plans up to year 2000. Research focuses on livestock related problems and priority is given to applied research. FVM, therefore, concentrates research activities on infectious diseases and animal production systems.

### **4.2 Undergraduate teaching**

The curriculum was extended from 4 to 5 years in 1990. In 1995 the first group of veterinarians following a 5 year curriculum graduated. There is a general consensus that the 5th year is necessary to give the students appropriate clinical training. The curriculum for undergraduate teaching was revised in 1995 but has not yet been approved by the Senate of SUA.

The undergraduate teaching programme at FVM is costly and demands considerable resources. At present the ratio between teachers and students is 1:4. The recommended ratio at SUA is 1:10. Therefore, the FVM plans to increase the number of students. The yearly intake has been approximately 25 students. The capacity of the FVM, however, corresponds to an intake of approximately 35 students. In 1996 40 students are supposed to be enrolled of which 13 are females. The intake of females have either been scarce or completely lacking in previous years. By year 2000 the aim is to enrol 50 students. There is obviously a great demand for veterinarians in the country and also with regard to recruitment of staff to the FVM.

A meeting with 4 undergraduate students pointed to several bottlenecks in the curriculum. However, basically the students were satisfied with the courses and the time they had spent at the faculty so far. They expressed that the 5th year is

necessary to give them a proper basis for future work. They suggested the following improvements:

- teaching in anatomy is too theoretical due to a 10 km distance between the place of teaching and the Mazimbu campus
- too few cases in the clinic (private practitioners compete with FVM in Morogoro area)
- courses should have a more practical approach
- exchange on student level with neighbouring countries should be stimulated
- a better advisory system at FVM on how to establish a private practice

The students were all concerned about their future job possibilities and underlined that the graduates in 1996 are the first veterinarians to leave the faculty without being provided with basic equipment and tools enabling them to open a private practice. However, they all seemed to be optimistic and enthusiastic about their possibilities to come into grip with the situation. The students outlined 3 target areas of importance:

- loans in terms of money and equipment including clinical instruments, drugs and basic literature
- official authorities and other responsible bodies should identify the veterinary profession as an important contributor to the development of livestock production
- establishment of a marketing system for farmers products

#### **4.3 Postgraduate training**

Holders of good BVM degrees from SUA or equivalent from any other higher learning institution may get the possibility to enter a master programme, Master of Veterinary Science (MSc). Candidates should at least have a credit pass in the subject of study to start a master programme which basically consists of a one year period of courses and a second year with research and dissertation. The existing master programmes are run separately at department level.

The FVM is planning to establish a MSc study in tropical animal health and production. This programme will involve several departments and also other faculties at SUA. The programme will be of 2 year duration with a separate diploma after the first year and a Master diploma following the second year of study. The master programmes, which have been recently revised, should all be oriented towards the livestock situation in the field.

Holders of good MSc or equivalent from other higher learning institutions can apply for admission to a programme for Doctor of Philosophy (PhD). This is a 4 year programme involving coursework and advanced research. Academic staff is mainly recruited from people holding a PhD.

At present there are 14 postgraduates at the faculty three of which follow a PhD programme while the others are doing masters. Five of the students are sponsored by Tanzanian funds, whereas the others are funded from Denmark, Sweden, Germany and Kenya (ILRAD). Among the 14 students there are 2 females. If sponsorships could be provided, the FVM intends to increase the number of postgraduates. The number of veterinarians willing to start a postgraduate programme surpasses the number admitted.

In a discussion with 7 postgraduate students, the students expressed general satisfaction in their studies so far. Their motivation was to obtain increased knowledge in specific areas in veterinary medicine, subsequently enabling them to apply for positions in the governmental veterinary service, seek an academic career or to promote veterinary extension. The link between postgraduate studies and the field impact of the veterinary profession was underlined as well as the relevance to research projects. Constraints were related to lack of textbooks, literature, equipment, offices and laboratory space, delays in approval of research projects, inferior accommodation and reduced possibilities to communicate with institutions in Tanzania and abroad. Improvements for postgraduate studies should focus on:

- accommodation facilities at FVM
- computer facilities
- access to literature and journals
- establishment of a field station in densely populated livestock areas

#### **4.4 Personnel and competence**

At present there are 44 academic staff and 20 technicians at the FVM. Altogether approximately 150 people are employed. Most of the academic staff has obtained their degrees abroad. The present competence among academic and technical staff is regarded to be good.

Academic isolation both at a national and international level, was underlined as a major problem impairing teaching and research. In this context it was mentioned that the contact internationally in the past had been directed mostly to European countries indicating that in the years to come the link to African universities and higher learning institutions should be strengthened.

The number of technical staff should be doubled according to the Dean and the Heads of departments.

#### **4.5 Infrastructure**

There is a general absence of supporting functions and infrastructure at FVM. The workshop at FVM is not in the position to maintain equipment and instruments adequately. The workshop has at present only one technician. System for maintenance and repair must be strengthened in advance of any procurement of instruments, equipment as well as computers. Also other faculties at SUA need this service.

A unit for logistics should be established at the FVM for purchase, storage and surveillance of equipment, reagents etc.

The buildings seem to be in a reasonable good condition. However, a plan for maintenance is needed.

#### **4.6 Economy and cost units**

##### *4.6.1 Economy*

The funds for the FVM partly come from the GOT and partly from foreign donors. The GOT is responsible for salaries, various allowances and some running costs while the donors give financial support to research projects exclusively.

The money provided by the GOT should primarily cover the expenditures related to undergraduate teaching (teaching material, chemicals, students practicals, travelling costs, post and tele-communication, travelling allowances, sanitation and repair of cars). From 1992/93 until 1995/96 there has been an increase from approximately 75mill to 165mill Tanzanian shillings (Tsh) for salaries and allowances from the GOT (Annex 5). Due to inflation it is not possible to assess the real increase over this period. Presumably there has been a moderate increase.

The GOT supply for running costs amounts only to approximately 10-15% of what is required to continue the activities established by DANIDA. The Vice-chancellor is allocating governmental funds to the Dean and to each department at FVM. Allocated funds for running costs were in 1992/93 approx. 28 mill Tsh. In 1993/94 and 1994/95 the figures were 31 and 22 mill Tsh, respectively. For 1995/96 the expected allocations are approximately 73 mill Tsh. The amount actually payed is normally less than expected.

Financial support from foreign donors primarily covers running costs for research projects. To some extent donor money contributes to cover costs related to undergraduate teaching. It is not possible to determine the ratio between governmental and foreign funding, however, it is obvious that the donor support enables the FVM to maintain its activities (Annex 6).

The Dean underlines that due to the fact that DANIDA has provided the necessary funds not covered by the government in previous years, the SUA-administration is less familiar with the high costs in veterinary education.

#### *4.6.2 Cost units*

Each department and the Deans office represent separate cost units at FVM. The Dean is financially responsible for the

- small animal unit
- computer-room
- FVM mini library
- workshop
- audiovisual unit
- clinics
- vehicles and tractors.

The Dean will also be responsible for the proposed animal isolation unit for small ruminants.

The small animal unit supplies mice, rats and rabbits for experimental purposes. The experiments are carried out in the same facilities as the breeding of animals. Separate rooms are needed. One academic staff from the department assists the Dean in running the small animal unit. One technician operates the unit.

### **4.7 Departments**

#### *4.7.1 Department of physiology, biochemistry, pharmacology and toxicology*

The department has 8 academic staff (3 in physiology, 2 in biochemistry and 3 in pharmacology/toxicology) and 3 technicians. Teaching of undergraduates and postgraduates includes lectures and laboratory courses. Main research areas are

mineral metabolism and trace elements, probiotics in ruminants and ruminant lactation physiology, medicinal and toxic plants, antiprotozoan drugs, feed residues, vitamins and drug resistance. Collaboration has been established with DASP in the programme "Milk and meat production in goats" which is part of an international research programme. Diagnostic functions for the clinical departments have not been established.

#### *4.7.2 Department of anatomy*

There are 5 academic staff and 3 technicians at this unit. Teaching of undergraduate students includes gross anatomy, histology, embryology and cytology. Master students are also included. A museum for bones, organs and other relevant specimens is being planned. Research is for the time being marginal. The department has no collaboration with other institutions. Research priorities include blood vascular system, cell biology, the reproductive and endocrine systems.

#### *4.7.3 Department of parasitology, microbiology and immunology*

This department has 10 academic staff (3 in bacteriology, 1 in virology, 3 in parasitology, 1 in immunology and 2 in rodentology) and 4 technicians. Teaching of undergraduate students also includes public health (food and water borne diseases). The staff gives lectures in microbiology at the DASP. A compendium has been produced in bacteriology and mycology. Research areas include natural resistance to diseases, trypanosomiasis, tickborne diseases, anthelmintic resistance, food and waterborne diseases. Diagnostic functions for clinical departments and department of pathology are established to some extent. Although the staff has been abroad to accomplish their PhD, difficulties to run research programmes are encountered when returning to FVM.

#### *4.7.4 Departments of medicine, surgery and reproduction and clinics*

The objectives of the work in the clinical departments can be summarized as follows:

- enhance practical training of under- and postgraduate students
- strengthen the role as a referral clinic in Tanzania
- promote veterinary extension service in Morogoro area
- contribute to further development of AI-service
- enhance the capacity of the clinics for self-sustainment

The department of surgery and reproduction is responsible for teaching and research both in traditional clinical activities as well as reproduction. The department has 8 academic staff of which 4 work within reproduction.

The department of medicine is performing teaching, research and extension work in cooperation with the other clinical units with a staff of 7 professionals, 8 technicians and 2 field officers.

The clinic unit is administratively responsible for ambulatory work and outreach service. The unit has 1 professional allocated to the clinic and other members from departments of medicine and surgery. Four field officers/assistants and 6 technicians are employed in the clinics. The section of public health is part of the

department of medicine and is basically concentrating on teaching undergraduates in zoonoses, food quality control and meat inspection.

The number of presented cases either at the clinic or in the field are too low to maintain a proper basis for training. Meat inspection and activities related to AI-service seem to be given low priority.

Research topics are related to clinical services. Infertility and lameness in cattle, nutrition and reproduction in cattle and goats and application of techniques under field conditions are current projects. They are planning a project which should address cattle holding by smallscale farmers. This project, if sponsored, is to be a joint venture with DASP.

The requirement to be self-sustained seems to be an overall objective for these departments. They all look into various possibilities of future incomes like establishing a breeding unit for dogs, a pharmacy and a petfood supplying unit.

#### *4.7.5 Department of pathology*

The department has 4 academic staff and 3 technicians.

The department gives priority to

- appropriate training of undergraduates for practical work in the field
- relevant research projects and postgraduate training
- international contact for technical and scientific staff
- supplying graduates with basic equipment for non-university activities
- refresher courses and short time practicals for extension staff
- logistics for collection of relevant specimens

The research programmes are oriented towards field problems. Some of the ongoing projects concentrate on parasitic and enteric diseases in cattle. In the future common diseases like East Cost Fever, tuberculosis, contagious pneumonia in cattle and diseases in village chickens will be focused.

### **4.8 Consultants comments on the status at FVM**

#### *4.8.1 Undergraduate teaching, postgraduate training and research*

The FVM seems to have an updated curriculum for student teaching and reasonable advanced postgraduate programmes. In both sectors there have been recent adjustments with the aim to improve the courses and the programmes. The new postgraduate diploma/master programme in tropical animal health and production is promising. Topics for research seem basically relevant. The plan to increase the student intake should be thoroughly considered before realized. An increase inevitably will generate higher costs. An analysis of the economical consequences must be carried out. The consultants underline that no increase in number of students should be recommended unless economical compensation can be met. A major goal should be to obtain a greater budgetary share from GOT in the current situation of student enrollement. The main constraints for improved teaching and increased intake of students seem to be:

- reduced space in terms laboratories, offices and clinics
- outdated and partly lack of teaching material; this applies to



- \* instruments, updated equipment, chemicals, reagents and drugs
- \* textbooks and compendia
- \* facilities for illustration
- \* low number of clinical cases
- \* maintenance of buildings, offices and laboratory space
- \* transport and communication

A list for purchase of items has been prepared by the FVM in the document “Project proposal for strengthening the Faculty of Veterinary medicine” (Annex 3). Priority should be given to equipment intended for teaching purposes. Purchase of research instruments must pay attention to the realistic level and especially to the ability of the workshop for repair and maintenance.

Inconveniences related to the fact that anatomy is taught at Mazimbu about 10 km from SUA the first year and that the dissection courses take place at the FVM, should be underlined.

The accomodation with regard to offices, laboratories and clinics, specifically for postgraduates, is limited. An increase in the number of students and postgraduates will necessitate expansion at most departments.

#### *4.8.2 Competence*

The qualifications of the academic and technical staff are good, however, without proper adjustments there will be shortage of qualified personnel in the near future. There is a general understanding that academic and scientific activities are given high priority at FVM. The concept of linking the faculty to rural livestock farming is obviously not properly reflected in the courses given at the institution. There is an immediate danger of deterioration of the present competence due to reduced availability of:

- international journals and literature
- sabbaticals
- international contact in terms of participation in
  - \* workshops
  - \* congresses
  - \* research programmes
  - \* bilateral exchange of staff

#### *4.8.3 Infrastructure*

Major constraints identified for proper functioning of FVM are related to inferior systems for repair of instruments and equipment also including computers. The existing workshop should be further developed. This unit could be a joint venture for all the faculties at SUA.

A unit for logistics responsible for purchasing, storing and surveillance of equipment, reagents etc should be established.

Buildings are still in a reasonable good condition, however, maintenance costs will increase in the years to come. A plan for maintenance should be worked out.

#### *4.8.4 Economy*

The present funding of the activities is too low to maintain the standards obtained during the DANIDA era. Either the activities must adjust to resources provided by the GOT resulting in lowered quality of teaching, research and extension services or extra funds must be provided. In this situation an increased enrolment of students as well as expansion of any activity must be thoroughly considered before realized. The concept of privatization of the veterinary service to a great extent influences on the priorities at FVM towards income generating activities. This may not be of benefit to livestock production in Tanzania.

**Concluding remark:** The present economical situation impairs the FVM to achieve its objectives of quality teaching and research and its contribution to the extension service. The consultants consider the financial situation as rather critical. Thus, donor support earmarked for recurrent costs, investments and infrastructure related to undergraduate teaching should be emphasized in the first place. Allocations for research should then be given priority. The support should be on a long term basis.

## **5 INFORMATION OBTAINED FROM RELEVANT INSTITUTIONS OUTSIDE FVM**

### **5.1 Institute of continuing education**

The institute of continuing education (ICE) is an outreach arm of SUA for the purpose of developing and promoting continuing education in order to secure dissemination of applied sciences and technologies. Enhancement of rural economy is focused through this activity. The ICE should act as a link between the faculties and the extension workers by providing refresher courses and other professional support enabling them to keep updated. Only non-degree projects are established.

The ICE has a staff of approximately 15 people and is served by SUA in terms of buildings and equipment. According to the director, ICE is an important unit for connecting academic life to the society outside the university. The courses given seem to be attractive even if there is a fee to be paid by the participants.

The FVM has not been able to participate fully in the courses offered by ICE in the past and FVM has therefore a low level of contact with extension workers. The director emphasizes that FVM now seems to be ready to participate more actively in the courses.

The activity is funded by the government, by foreign sponsors, including NORAD, and by users fee.

### **5.2 Directorate for postgraduate studies and research**

The directorate for postgraduate studies and research (DPSR) is responsible for the administration and management of research and postgraduate training across faculties and institutes. In addition it is the secretariat for the Senate administering all research funds at the SUA. All faculties have to apply and compete for research funding paying attention to the guidelines given. Research programmes initiated by the FVM must be approved by the Research and Publication Committee and subsequently the Senate.

The document "Research policy priorities and guidelines" gives an outline on research activities at the different faculties of SUA also including FVM at department level. Thereby, DPSR suggests priority areas. Interfaculty collaboration is stimulated. Likewise, collaboration at an international level is maintained through formal agreements with several countries in Europe and America. Memorandum of understanding has been established between SUA and universities in East African countries in order to promote collaboration. Regional cooperation is also an important issue of the Inter University Council in East Africa.

The overall policy of SUA is to increase the percentage of postgraduate students to 25% of the total number of undergraduates. The present figure is 17%. NORAD support has recently been allocated for 9 students at FVM.

### **5.3 Department of animal science and production, SUA**

The Head of the department focussed especially on collaboration between the FVM and DASP. Three areas were pointed out:

- teaching of undergraduates and postgraduates are exchanged to a certain extent in reproduction physiology and animal nutrition
- research collaboration
- assistance at the university farm regarding treatment, artificial insemination and fistulation is performed by FVM personnel.

Discussions on collaborating research programmes between the FVM and DASP have been almost non-existing.

### **5.4 Livestock officers in Morogoro region**

Discussions with the regional and district livestock officers in the Morogoro area provided information about the governmental services in the area. Obviously the governmental extension service has collapsed. It was stated that several serious diseases like Footh and Mouth disease, Rabies, Contagious Bovine Pleuropneumonia and Tuberculosis were present and that official authorities had no possibility to perform any type of control. Even the system for reporting of disease outbreaks had broken down.

The livestock officers both agreed that well qualified veterinarians graduated from FVM, however, they had in general no means of establishing a practice. Some of them were likely to settle down in more urban areas to be involved in pet animals practice. They commented that the FVM put too much emphasis on academic activities and paid too little attention to extension work. The regional livestock officer suggested that a special extension programme should be established. Furthermore, he underlined the need for refresher courses, supply of kits to graduated veterinarians as well as publishing of newsletters and other literature service.

### **5.5 Ministry of agriculture and livestock production**

The acting chief veterinary/livestock officer at the Ministry of Agriculture and Livestock Production in Dar es Salaam was of the opinion that in the training programmes for undergraduates at FVM too little attention has been paid to extension and that the linkage to livestock production was weak. This was also due to

lack of means for example due to failure from the government to organize and establish infrastructure in the field. He further underlined that undergraduate training should be adjusted in order to prepare veterinarians for settling in rural areas more easily.

The plans for governmental services within the livestock and veterinary sectors are based on privatization of all extension services in terms of treatment, drug distribution and general consultant work. GOT resources should primarily be directed against enforcement of regulations to control infectious animal diseases. They want to stimulate veterinarians to do practice in rural areas, however, they do not have finances to support this goal. Some donors (among others the European Union) have taken up this issue, however, more support is needed. The role of disease control and the livestock sector in general as an important contributor to development within the agriculture sector should be emphasized more. Until now the crop sector has been given priority. Therefore, a former cabinet minister recently proposed "to establish a fully-fledged ministry for livestock matters" in a July issue of *The Guardian* (Annex 7). Further, he said "that the livestock-keeping was a potential money spinner but has for decades been neglected".

A retrenchment programme is in force within governmental service. The intention is to reduce the number of employees and remain with specially trained and well paid staff. The manpower should be concentrated at district level. There will also be an administrative governmental unit in the region in the future organization of governmental services. To day there are 110 district livestock/veterinary officers and 20 regional officers.

The acting chief livestock/veterinary officer emphasized the necessity to establish a pilot extension project which should be connected to the FVM at SUA. All relevant disciplines and extension workers should be involved.

Figures from 1994, given by the Ministry of Agriculture, show that there are approximately 14 mill. cattle and 11 mill. sheep and goats in Tanzania. About 28%, 31% and 13% of all agricultural households keep cattle, goats and sheep, respectively. The number of chickens is slightly above 20 mill, most of them being of indigenous breed. Disease constraints are considered to be severe. Foot and Mouth Disease, Tuberculosis, Contagious Bovine Pleuropneumonia, tick born diseases of which East Coast Fever is a real killer, are commonly found. Rabies is rampant and approximately 20 to 30 human cases are reported every month. Official disease control measures are generally lacking. Animal diseases, therefore, are not only a threat to livestock production but also of importance for human health.

## **5.6 Consultants comments**

### *5.6.1 General*

It is of importance to establish optimal collaboration between FVM and DASP for future work at FVM. This cooperation should include teaching, research and exchange of technical personnel, workshop facilities and complicated and expensive equipment. DASP also seems to have considerable experience in extension work.

The ICE seems to be an appropriate instrument to bridge the gap between the rural society and the academic activities at the FVM. Collaboration with ICE should be encouraged to assist the FVM in attaining its objective to apply veterinary science to the Tanzanian livestock sector through various types of refresher courses for non-graded personnel and farmers.

DPSR fills an important function at SUA with regard to coordination of research and postgraduate studies in addition to management of financial resources for research. The good cooperation which exists to day between DPSR and FVM should continue in order to improve research strategy and preparation of research proposals.

Representatives within the governmental service all underline the need for FVM to extend their knowledge to the agricultural society in Tanzania. The present situation, as stressed by the acting chief veterinary officer, is also due to the collapsed infrastructure of the country and the grounded official services. It is obvious that future support to FVM must take this situation into consideration.

### *5.6.2 Extension programme*

A paramount feature of the activities at FVM is that the outside society, especially the rural areas, is not in a position to utilize the service afforded by the faculty. At the same time the FVM also has minimal resources to apply their competence. As the overall objective of any activity or programme at the FVM is to support and improve the Tanzanian animal production and animal health aspects, a better communication between the field and the faculty is a prerequisite for promoting relevant teaching and research. A well defined and designed extension programme, therefore, should be an integrated part of a possible future support from NORAD to FVM.

## **6 PROPOSAL FOR FUTURE COLLABORATION BETWEEN FVM/SUA AND NORAD**

### **6.1 General**

Considering that FVM/SUA is the only centre of teaching, training and research in animal health disciplines in Tanzania and that the animal health status is threatening livestock production in the country, it is of immense importance to maintain and develop this faculty. NORAD support to the FVM is therefore recommended for the next 3 years. The support should, however, be planned on a long term basis.

Attention should be paid to the following guidelines:

- a realistic, appropriate and sustainable level of support
- stepwise realisation based on results obtained
- documentation of priorities regarding curriculum and research at department level as well as for FVM as a whole
- linking of FVM activities to extension work and continuing education

- development of infrastructure
- establishment of collaboration both within SUA, and on national and international levels

#### *6.2 Equipment, literature etc*

The immediate objectives and a list of inputs are outlined in the document "Project proposal for strengthening the Faculty of Veterinary Medicine at SUA" (Annex 3). The project focuses especially on purchase of equipment and instruments for teaching and research purposes as well as items related to infrastructure. In addition, financial support is requested for continuing publication of the Tanzania Veterinary Journal and staff attending scientific conferences.

Priority should be given to:

- laboratory and clinical equipment
- procurement of updated textbooks and compendia and other needed tools for teaching, research and extension
- access to international journals and periodicals
- field kits to graduated veterinarians

An immediate consequence of the obvious need to build a link between FVM and the field, is to supply the graduates from the FVM with kits enabling them to perform basic veterinary service. In the present situation, those not entering pet animal practice in urban areas, are supposed to be idle when it comes to animal health activities after graduation.

#### *6.3 Research*

A research strategy should be prepared identifying programmes/projects given priority with emphasis on applied research relevant for livestock diseases in Tanzania. Attention should be paid to the realistic level of research. Research projects at the various departments should be part of the overall research policy at FVM. Projects on infectious diseases and animal production systems should have priority.

#### *6.4 Collaboration*

Priority should be given to collaboration involving veterinary faculties in neighbouring countries, and where relevant with NCVN and other veterinary institutions in Europe. Compared with previous years the contact to African institutions should be strengthened. Funding should be allocated in order to establish such collaboration. Collaboration is equally important with faculties and departments at SUA and other institutions in Tanzania.

#### *6.5 Infrastructure*

Strengthening of the workshop in a joint venture with other faculties at SUA should be given high priority. A well functioning workshop at SUA/FVM is a prerequisite for the maintenance of instruments and equipment. The workshop must have the necessary space, equipment and competence.

Maintenance of buildings etc. needs attention and funding should be allocated for this purpose. A plan for maintenance must be developed.

A unit for logistics should be established with the responsibility to purchase, store and surveille equipment, reagents etc.

#### *6.6 Extension and continuing education*

A plan for FVMs contribution to extension work and continuing education should be developed. It is important to link the FVM/SUA to the rural community in Morogoro area and in the country as such. The purpose for this is to safeguard relevant teaching and research activities and to improve the standards of livestock production and animal health status in the country. Therefore, it is suggested to design an extension project. Veterinarians and other extension worker as well as farmers with certain interest or specific needs should be involved. The main aim of such a project would be to demonstrate the field impact of FVM/SUA. All categories of farming are of interest, however, farmers with a commercial interest should be given some priority. The basic component of an extension project would be

- appropriate and sustainable clinical service
- involvement of non-clinical departments at FVM
- practical involvement of private and official field advisers
- supplying of basic equipment to field workers
- refresher courses to non-degree personnel
- production of short notes and leaflets
- teaching and other relevant training of farmers
- involvement of non-animal health diciplines like crop production and irrigation

Within FVM/SUA all relevant departments should take part. Of special interest would be the cooperation with the DASP and the ICE. The clinical departments should be the executive unit of the programme which presumably should have a full-time coordinator.

## **7 CONCLUSIONS**

It is recommended that NORAD should support the FVM on a long term basis. The consultants are at this stage not ready to go into details on this support. However, a major objective must be to secure the investments and contribution afforded by DANIDA. Therefore, some first aid measures must be undertaken to avoid a breakdown of fundamental functions at the FVM. Recommendations are given which necessitate an adjustment of the project proposal prepared by FVM. FVM should have the responsibility to give priority to the different equipments etc. listed in the proposal.

Further discussions between FVM/SUA-personnel, NORAD and professionals from Norwegian institutions are needed to design a more detailed programme for cooperation between FVM/SUA and NORAD. A coordinator should be appointed on both sides. A visit of the Dean at FVM to Norway and equally a visit of the Dean at NCVM to Tanzania should be arranged. The general agreement between AUN and SUA which however, needs certain amendments to include explicitly veterinary medicine, should form the basis for the NORAD support (Annex 8).

FVM should develop strategy plans for future sustainable activity at the faculty. It is necessary to focus on the impact of FVM in the Tanzanian livestock and farmer community. Therefore an extension programme should be developed.

### **Documents consulted**

- Final review report prepared for DANIDA by a mission visiting Tanzania, August 1988, DANIDA
- Evaluation report "Support to the Faculty of Veterinary Medicine, Sokoine University of Agriculture, Tanzania, 1992, DANIDA Sokoine University of Agriculture
- Project completion report DANIDA support project Faculty of Veterinary Medicine, Sokoine University of Agriculture, Morogoro, Tanzania, 1979 - 1994, December 1994, DANIDA
- Agreement between Sokoine University of Agriculture and The Agricultural University of Norway on the Cooperation between SUA and NLH in the field of Agricultural and Allied Sciences
- Project proposal for strengthening the Faculty of Veterinary Medicine at SUA: A request to NORAD to strengthen the Faculty of Veterinary Medicine of Sokoine University of Agriculture
- Agreed minutes of the SUA - NORAD first annual meeting 8 -9 February 1996. Issued by the Secretariat Directorate of Research and Postgraduate Studies, February 1996
- Appraisal of project proposal on continued Norwegian support to Sokoine University of Agriculture (SUA), Dar es Salaam, 1994, NORAD
- Summary of programme document, TAN 091 - Frame agreement on continued Norwegian support to Sokoine University of Agriculture for the period July 1996 - June 2000 and
- Bevilgningsdokument TAN 091 - Rammeavtale for fortsatt norsk støtte til Landbruksuniversitetet i Tanzania (Sokoine University of Agriculture) for perioden juli 1996 til juni 2000
- Agreement between the Government of the Kingdom of Norway and the Government of the United Republic of Tanzania on the provision of continued Norwegian support to Sokoine University of Agriculture ("SUA")





# ANNEXES

**Documents consulted**

- Final review report prepared for DANIDA by a mission visiting Tanzania, August 1988, DANIDA
- Evaluation report "Support to the Faculty of Veterinary Medicine, Sokoine University of Agriculture, Tanzania, 1992, DANIDA Sokoine University of Agriculture
- Project completion report DANIDA support project Faculty of Veterinary Medicine, Sokoine University of Agriculture, Morogoro, Tanzania, 1979 - 1994, December 1994, DANIDA
- Agreement between Sokoine University of Agriculture and The Agricultural University of Norway on the Cooperation between SUA and NLH in the field of Agricultural and Allied Sciences
- Project proposal for strengthening the Faculty of Veterinary Medicine at SUA: A request to NORAD to strengthen the Faculty of Veterinary Medicine of Sokoine University of Agriculture
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- Agreement between the Government of the Kingdom of Norway and the Government of the United Republic of Tanzania on the provision of continued Norwegian support to Sokoine University of Agriculture ("SUA")
- Strengthening of training, research and outreach veterinary services at SUA veterinary clinic. Application for NORAD - SUA frame-agreement funding, Sokoine University Clinic, Faculty of Veterinary Medicine
- Application for NORAD assistance for the Department of Anatomy, Faculty of Veterinary Medicine

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- Livestock. In: Medium term Agriculture Development Strategy 1996/97-2000/01 (First draft), United Republic of Tanzania, Ministry of Agriculture and Cooperatives, January 1996, Dar es Salaam, pp 90-106
- National Sample Census of Agriculture 1993/94 Tanzania Mainland, Report Volume II, United Republic of Tanzania, July 1994

**REVISED PROGRAMME FOR CONSULTANTS TO THE FACULTY OF VETERINARY  
MEDICINE, SOKOINE UNIVERSITY OF AGRICULTURE**

- 24.6. Meeting with the Norwegian ambassador in Tanzania Nils-Johan Jørgensen and his co-workers Arild Øyen and Karl Solberg  
Travel to SUA
- 25.6. Meeting with the Dean of FVM, dr. Mosha, and the Heads of departments  
Meetings with academic staff at department level and tour of departments
- 26.6. Meetings with academic staff at department level, continued  
Meeting with dr. Kinabo, Directorate for research and postgraduate studies  
Meeting with dr. Lubeye, Institute of continuing education
- 27.6. Meeting with a group of undergraduate students  
Meeting with a group of postgraduate students  
Meeting with the Dean and associate Dean of FVM
- 28.6. Meeting with the Regional livestock officer, Morogoro  
Meeting with the District livestock officer, Morogoro  
Meeting with the Head of Department of animal science and production  
Visit Animal farm and Library
- 29.6. Summing up and concluding remarks with the Dean of FVM and the Heads of departments
- 30.6. Travel to Dar es Salaam
- 01.7. Preparation of draft report, Norwegian embassy
- 02.7. Meeting with the Acting Chief Veterinary Officer at Ministry of Agriculture and Livestock Development, Dar es Salaam  
Preparation of draft report, continued  
Debriefing at the Norwegian embassy, meeting with Tore Gjør and Karl Solberg
- 03.7. Draft report submitted to the Vice Chancellor of SUA by fax



SOKOINE UNIVERSITY OF AGRICULTUR

PROJECT PROPOSAL FOR  
STRENGTHENING THE  
FACULTY OF VETERINARY MEDICINE  
AT SUA

A REQUEST TO NORAD TO STRENGTHEN THE FACULTY OF  
VETERINARY MEDICINE OF SOKOINE UNIVERSITY OF AGRICULTURE

1. SUMMARY:

The Faculty of Veterinary Medicine of Sokoine University of Agriculture was started in 1976 with aim of producing graduate veterinarians, conducting livestock research and extension to livestock farmers. The first batch of veterinarians graduated from the faculty in 1980. Up to this year (1995), a total of 213 graduate veterinarians have emerged from the Faculty. The Faculty has been facing a number of problems which impair its proper functioning. These problems include wearing or absence of laboratory and other equipment for teaching and conducting research, inadequate supply of laboratories chemicals and reagents and absence of funds to enable academic staff to attend scientific conferences, seminars or compendia writing. The Faculty clinic needs improvement to enhance its capacity in handling student clinical practicals. Moreover the dissemination of scientific information through the publication of Tanzania Veterinary Journal has been in problems due to lack of enough funds. In order to strengthen the capability of the faculty in teaching research and extension the problems mentioned above need to be solved through financial support to the faculty. NORAD is therefore requested to provide the financial support as detailed in this write-up so that the faculty can attain its targets.

2. CONTEXT:

2.1 Sector Specific:

Tertiary Education/Agriculture (Livestock)

The policy of the Government of Tanzania (GoT) on livestock is to encourage livestock farmers to keep good quality animals which will benefit them in terms of milk, meat, eggs and other livestock products. The keeping of the animal must take into account the carrying capacity of the land to avoid overgrazing, soil erosion and other forms of environmental degradation. Animal diseases must be controlled so that the farmer obtains optimum benefit from his animals. The Faculty of Veterinary Medicine is training graduate veterinarians geared towards helping the livestock farmer attain that goal.



## 2.2 Project Area

Sokoine University of Agriculture, Faculty of Veterinary Medicine, Morogoro Tanzania. Morogoro is 200 km West of Dar es Salaam on the Highway to Zambia. The Faculty of Veterinary Medicine was started in 1976 as a Division of Veterinary Science in the then Faculty of Agriculture, Forestry and Veterinary Science which was under the University of Dar es Salaam. The role of the Division of Veterinary Science was to produce graduate veterinarians who would help the livestock farmer in livestock extension and production, and livestock disease control and treatment. Prior to the commencement of the Division of Veterinary Science, graduate veterinarians were trained outside the country - mainly from Nairobi University and a few others from abroad.

## 2.3 Present situation

The Faculty has 42 academic staff members and 20 technicians. There are six departments in the faculty. The student intake is 30 - 35 undergraduates per year and BVM takes 5 years. The number of postgraduate students is now 12 but may increase depending on availability of sponsorship and provision of other basic research facilities in the laboratories. The laboratories are now under-equipped and lack the necessary chemicals and reagents for student practicals and research. The Faculty has 15 IBM 286 series computers with limited hard disc space. Replacing them with new models is cheaper than upgrading them. The printers for these computers are also old and require replacement. There is a 90 KVA standby generator which used to provide electricity automatically during power failures but the automation part is defective. Out of the 20 air-conditioners present in faculty, ten are broken down beyond repair while the other air ten conditioners need repair. These air conditioners are mainly used to protect heat-sensitive equipment like computers, analytical balances and some laboratory chemicals and equipment. Four cold-rooms installed in 1986 have broken down and require replacement because repairing them has been very cumbersome and expensive. These cold rooms preserve biological specimens. The faculty receives money for repair of vehicles from the government but the amount is not enough. Each of the six departments has a small photocopier while the faculty has one heavy duty photocopier. These photocopiers are old and hence require replacement. There are 10 building in the faculty. These buildings are ten years old and require repair from time to time.

There are 4 vehicles used mainly for student practicals. The money provided for their repair is not enough. Also in order to reduce repair costs, the vehicles will need to be replaced gradually commencing 1996/97.

### 3.0 The Project

#### 3.1 Overall objective:

The overall objective is support to the Faculty of Veterinary Medicine to improve and enhance its capacity in teaching, research and extension.

#### 3.2 Immediate objectives:

- (a) Repair/replacement of laboratory equipment.
- (b) Purchase of new basic research laboratory equipment currently not available.
- (c) Purchase of laboratory reagents and equipment
- (d) Replacement/repair of other equipment like computers, printers, cold-rooms, stand-by generator, air-conditioners, photocopiers, typewriters and motor vehicles.
- (e) Support of staff attending scientific conferences, short-courses, seminars and writing of compendia.
- (f) Continuation of publication of the Tanzania Veterinary Journal.

#### 3.3 Target groups

Staff and students in the Faculty form the initial target group but ultimately the Tanzanian livestock farmer is targeted to benefit from services of well-trained graduates from the Faculty.

#### 3.5 Inputs

The subproject will require inputs from both the Government of Tanzania and NORAD. These inputs will be in the form of human, financial and physical resources.

Inputs by the Government of Tanzania

- i. Manpower
- ii. Office space and land
- iii. Recurrent budget for staff
- iv. Administration

Inputs being requested from NORAD

1. Cold Room Machine replacement – Shs. 20,000,000/=

In 1986 the faculty acquired 4 cold room machines for purpose of preserving animal tissues and other specimens. These cold room machines have broken down frequently and now they are out of order and require replacement.

One of the units was replaced in 1991 but still requires repair from time to time.

As a result of this breakdown whole carcasses or animal organs or other specimens cannot be preserved for future use. Postmortem examinations on dead animals need to be done on the same day the animal dies because of lack of preserving facilities. The situation gets worse when animals die on week-ends or on public holidays. The estimated cost of one tropicalized cold room is T.Shs. 6,500,000/-. Three machines will costs T.Shs. 19,500,000/=. The installation costs are estimated to be T.Shs. 500,000/=

So the total financial input being requested from NORAD for this item is T.Shs. 20,000,000/=

2. Maintenance and fueling of the Standby Generator

The Faculty has a 90 KVA diesel standby generator to provide electricity when there is power failure from Tanzania Electric Supply Company (TANESCO), the only Company supplying electricity in Tanzania. The generator has been very useful in supplying electricity automatically during power cuts necessitated by low water volume in Mtera and Kidatu dams. Thus machines like Computers, fridges, freezers and cold-rooms (when they were

operating) were saved by the standby generator. Now the generator has an electromechanical problem whose possible causes include deffects in rewiring of the alternator, excitation winding or excitation diodes within the generator.

The financial input requested for the generator for the year 1996/97 is T.Shs. 2,500,000/=

In each of the subsequent years the generator will require shs. 1,200,000/= for fuel and replacement of filter while Shs. 500,000/= should be set aside as contingency to cater for unexpected breakdowns.

3. Purchase and maintenance of heavy duty photocopier and 7 small departmental photocopiers - T.Shs. 16,500,000/=

In 1989 the faculty acquired a heavy duty photocopier (Rex Rotary type) for purposes of mass photocopying. The photocopier is now old and most of the time it is out of order. Seven other small photocopiers were acquired by the departments and Dean's office. These photocopiers are now old and require replacement.

NORAD is requested to replace the heavy duty photocopier. The financial input for this is US \$ 10,000 (approximately equal to shs. 630,000/= at the exchange rate of 1 USD = T.Shs. 630/= as per July, 1995). Annual repairs and maintenance for this photocopier is estimated to cost shs. 500,000/=. Each small photocopier will cost T.shs. 1,500,000/= and the 7 will cost shs. 10,500,000/=. The purchase is over a period of 4 years.

4. Replacement and repair of air conditioners - Shs. 7,000,000/=

Ten of the air-conditioners in the faculty are broken down beyond repair because they are old and the brand was unsuitable for tropics. These air-conditioners were installed in offices with heat-sensitive equipment like weighing balances, computers and in stores with chemicals. The break-down of these air conditioners endangers the life span of heat sensitive equipment. The price of a new air conditioner is shs. 450,000/=. So an input of T.Shs. 4,500,000/= is requested from NORAD to buy 10 new air conditioners.

Furthermore, 10 other airconditioners in the faculty are faulty and require repair. Each is estimated to cost shs. 250,000/= and so an input of Tshs. 2,500,000/= is requested from NORAD for this repair.

5. Computers: Shs. 30,000,000/=

The faculty has 15 IBM Computer all of which are 286 series with limited Hard Disc Space (max. 40MB) and with either 720 kb or 1.44MB ram space. Although these computers have continued to be very useful to the faculty staff, they have limited future use and upgrading them would be more expensive than buying new fast computers which are now cheaper on the market. NORAD is requested to replace the 15 old IBM 286 series computer with new ones. In addition to the 15 computers 2 more are requested - one for the electronic technician's workshop and the other for the audio-visual unit. The one for the electronic technician will be for his daily use in the workshop and should have computer aided electronic fault finding and other technical software worth Tshs. 500,000/=. The one for the audio-visual unit is recommended to be a multimedia computer system for preparations of slides and other graphics for teaching.

The 15 computers for replacement and the one for the workshop are recommended to be 486Dx4 (80 MBz-100MBz) or Pentonium (P90) and each will cost Tshs. 1,600,000/=. So 16 such computers will cost Tshs. 25,600,000/=.

The multimedia computer will cost shs. 4,000,000/=. So the total cost for computers is shs. 30,000,000/=.

6. Printers (Shs. 10,500,000/=)

(a)Printer heads: The printer heads for 11 NEC printers in the faculty are worn out and are not easily serviceable. NORAD is requested replace them with eleven 24 pin or dot Panasonic (latest model) printers. Each printer is estimated to cost T.shs. 500,000/=. A total of T.Shs. 5,500,000/= is requested for this for the year 1996/97.

(b) Laser printers: The faculty has 2 laser printers purchased in 1991. These laser printers are not heavy duty and are wearing out. NORAD is requested to replace these with two New Heavy laserjet 4 M series at Tshs. 2,500,000/= each. So the total estimates for the two are Tshs. 5,000,000/= for the year 1997/98.

(c): Total estimates for 11 printer heads and Laserprinters is T.shs. 10,500,000/=

7. CD-ROM facility: (shs. 1,000,000/=)

One of the computers has CD-ROM disc drive which has been idle since the faculty doesn't subscribe for CD facility. There are currently many CD-ROM discs on the market and some are specific to Veterinary Medicine ie. (CDVET). NORAD is requested to provide the faculty with shs. 1,000,000/= to subscribe towards CD facility for the new computers to be bought and for the existing one.

8. Replacement of typewriters (T.shs. 4,800,000/=)

Eight of the Olivetti typewriters in the faculty are broken down and are not yet replaced. Each new typewriter costs T.shs. 600,000/=. So 8 typewriters will cost shs. 4,800,000/=. The faculty requests NORAD to fund the purchase of these typewriters. It is planned that the purchase be spread over a period of two years.

9. (a)Tanzania Veterinary Journal: T.Shs. 1,000,000/=

The journal is published by the Faculty. Many of the contributors of articles to the journal have been members of the faculty. Some articles come from veterinarians in the field and from neighbouring countries. So the journal has been a good link between the faculty research findings, extension officers and the livestock farmer. However because of inadequate financial resources, the faculty is having problems in publishing it on regular basis. The Faculty request NORAD to extend T.shs. 1,000,000/= annually for production of 4 volumes of this journal.

10. Improvement of the SUA Veterinary Clinic - Shs. 16,000,000/=

The Clinic was started with the Division of Veterinary Science in 1976 and has the objective of providing clinical cases for the purpose of teaching and offers services to livestock farmers within and outside Morogoro Municipality. Three classes i.e. 3rd, 4th and 5th year BVM students depend on cases from the clinic for their practicals. The clinic is also the only referral Veterinary Clinic in Tanzania. However the clinic has always been embarrassed due to lack of advanced diagnostic facilities. Both sections of the clinic i.e. the stationary clinic



(which deals with incoming cases and hospitalized animals) and the ambulatory clinic (deals with outside cases in the field) require improvement. The required equipment include:-

- |     |  |                   |
|-----|--|-------------------|
| i.  | Radio-equipment for the ambulatory vehicle to be connected with the reception of the clinic..... | shs. 1,000,000/=  |
|     | Newly reported cases will be relayed to the vehicle while in the field.                          |                   |
| ii. | Diagnostic facilities  |                   |
|     | a) ECG machine   | shs. 1,500,000/=  |
|     | b) EEG machine   | shs. 1,500,000/=  |
|     | c) Ultra sound machine for stationary clinic   | shs. 3,000,000/=  |
|     | d) Ultra sound machine for ambulatory clinic   | shs. 2,000,000/=  |
|     | e) Automatix X-ray processing unit   | shs. 3,000,000/=  |
|     | f) Computer for diagnostic purposes  | Shs. 4,000,000/=  |
|     |  | <hr/>             |
|     | Total  | Shs. 16,000,000/= |
|     |  | <hr/>             |

11. Laboratory equipment, drugs and chemicals - shs. 25,000,000/=

The faculty has been using disposable laboratory equipment, drugs and chemicals worth T.shs. 25,000,000/= per year. These equipment, drugs and chemicals are used mainly for student practicals. Over the years the government support for this component has dwindled. If the situation continues unchecked, the quality of our teaching will go down because the necessary practicals will not be carried out. NORAD is therefore requested to provide Tshs. 25,000,000/= to the faculty annually to help in the purchase of laboratory equipment, drugs and chemicals.

12. Vehicles: - Shs. 60,000,000/=

In order to facilitate student practicals and research two of the pool vehicles will require replacement. A request is therefore made for purchase of two hard-top Toyota land cruisers. Such cars are convenient for carrying groups of students for field practicals. Both vehicles will cost T.shs. 60,000,000/=

13. Improvement of the FVM Audio-Visual Unit - shs.16,300,000/=

The Audio-Visul Unit of the Faculty of Veterinary Medicine was started in 1987 with the aim of producing visual aids like slides, transparencies scientific statistical graphs etc to aid in teaching, research and extension. Staff and students have enjoyed the services of the unit. However some of the equipment is aging and requires replacement. NORAD is therefore requested to donate money to purchase the following so as to update the unit.

- i. 5 OHP type 2 @ USD 1,200 = USD 6000 = T.sh. 3,780,000/=
- ii. 5 slides Kodak 1010 @ USD ~~1,000~~ 6,500 = T.sh. 4,095,000/=
- iii. 3 Pentax 1000 still camera with lenses & flusher units  
@ USD 270 = USD 810 = T.sh. 510,300
- iv. ITV with recorder USD 600 = T.sh. 378,000/=
- v. 1 Handcam video sonny camera  
(TR 55 V.8) USD 1,200 = Tsh. 756,000/=
- vi. Diazo machine for slidemaking with  
different colour for presentation ~~USD~~ 2,000 = T.sh. 1,300,000/=
- vii. 5 Braun Novemant slide projector for  
presentation @ USD 750 USD 3,750 = T.sh. 2,365,000/=
- viii. 1 Microscope filled with camera ~~USD~~ 5,000 = T.sh. 3,200,000/=

Total requested for the Audio-Visual Unit = USD 25860 = T.sh. 16,300,000/=

This amount will be spread over the four years as follows:

1996/97	-	4,000,000/=
1997/98	-	4,000,000/=
1998/99	-	4,000,000/=
1999/2000	-	4,300,000/=

14. Attending Scientific Conferences - Shs. 15,000,000/=

Academic staff in the faculty need to keep abreast with new knowledge through attending Scientific conferences, seminars or workshops. In such conferences they will also present papers. Lack of sponsorship facility may result in academic staff teaching obsolete materials to students and students will in turn convey obsolete knowledge to farmers. This is not a healthy situation. NORAD is therefore requested to donate shs. 15,000,000/= annually to the faculty to enable academic staff attend scientific conferences in various parts of the world.

15. Basic Research equipment in laboratories

Basic research equipment is required in the laboratories of the faculty to enhance teaching and research.

(a) Research equipment in physiology & pharmacology(i) High Performance Liquid Chromatograph (HPLC) - Shs. 3,000,000/=

HPLC is required for good research in Pharmacology, Toxicology and biochemistry. Due to lack of this equipment standard research in the said subjects cannot take place. Enrollment of postgraduate students in the said subjects is not easy because of lack of HPLC which is a standard research equipment for the said subjects. NORAD is therefore requested to provide T.Shs. 3,000,000/= for the purchase of HPLC and its components.

(ii) Automated spectrophotometric Analyser - Shs. 4,000,000/=

This is a basic research equipment in Clinical Biochemistry and Pathology. The faculty doesn't have one and hence research is impaired. NORAD is requested to fund the purchase of this by providing shs. 4,000,000/=

- (iii) Thermoregulated high speed centrifuge - Shs. 2,000,000/=

This research facility doesn't exist in the faculty and hence NORAD is requested to fund the purchase of one.

- (iv) Ultra centrifuge - Shs. 1,000,000/=

The faculty doesn't have this equipment which is essential for good research.

- (v) Atomic absorpition Spectrophotometer -Shs. 3,000,000/=

This is an essential research equipment for Physiology & Toxicology especially for detection of various metals.

- (vi) Laminar flow hood (Sterile) - Shs. 1,000,000/=

It is lacking in the faculty. It is very important in research in many areas of the faculty.

(b) Research equipment in veterinary medicine and public health

The following equipment is requested:-

(i)	Elisa machine with printer	T.Shs. 2,000,000/=
(ii)	Balance machine (Sertorius) GMBH	T.Shs. 3,000,000/=
(iii)	Incubator	T.Shs. 1,000,000/=
(iv)	Oven	T.Shs. 1,000,000/=
(v)	2 Deepfreezer	T.Shs. 1,000,000/=
(vi)	Water bath (shaking type)	T.Shs. 800,000/=
(vii)	Refrigrator	T.Shs. 500,000/=
(viii)	2 Microscopes	T.Shs. 12,000,000/=
(ix)	Smaller items which include Macmaster slides, improved Neubamer chamber, hot plates (ordinary) and hot plates with magnotic stones	T.Shs. 1,000,000/=

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Total T.Shs. 22,300,000/=

(c) Research equipment in Anatomy

The following equipments are requested for research in Anatomy:-

(i) Utrathion microtome (US \$ 10,000)

This is equivalent to T.Shs. 6,300,000/= at the August 1995 exchange rate of 1 US \$ = T.Shs. 630.

(ii) Glass knife cutter (US \$ 5,000)

Equivalent to T.Shs. 3,150,000/=

(iii) Closed circuit TV system

This will be used for teaching microscopic anatomy. Eleven Television monitors together with central microscope for use by instructors will be purchased. The estimated cost for this component is US \$ 10,000 which is equivalent to T.Shs. 6,300,000/=.

(iv) Cryostat (freezing microtome)

The estimated price of this is USD 10,000 equivalent to T.Shs. 6,300,000/= as per August, 1995.

(d) Research equipment in Microbiology and Parasitology

A number of the equipments used in routine activities in the laboratories for both teaching and research have broken down and require replacement. In addition to this requests are made for two liquid nitrogen tanks for preserving of live parasites and antigens; this facility is new. Thus NORAD is requested to donate funds for the purchase of the following in the department:-

- i) 2 Ovens (Heraens) @ shs. 400,000/= T.Sh. 800,000/=
- ii) 2 upright freezer @ shs. 600,000/= T.Sh. 1,200,000/=

iii)	3 Incubators (Heraens) @ shs. 500,000/=-	T.sh. 1,500,000/=
iv)	Refrigerated centrifuge (Fizon)	T.sh. 1,500,000/=
v)	Sartorius balance (for weighing reagents)	T.sh. 500,000/-
vi)	Autoclave (Lytzen)	T.Sh. 6,000,000/=
vii)	Fridge freezer	T.Sh. 350,000/=
viii)	2 liquid nitrogen tanks	T.Sh. 1,000,000/=
		<hr/>
	Total	T.sh.12,850,000/=
		<hr/> <hr/>

Items (i) - (vii) are replacements while item (viii) is new.

(e) Research equipment in Veterinary Surgery, Obstetrics and Reproduction

Some equipment which is irreversibly out of order and requires replacement to improve research capability and teaching NORAD is therefore requested to fund the following equipment requested by the department:-

i) Stereo dissecting microscope Price

This is a new request and is for embryo transfer.

It will be used in selecting of embryos during

teaching USD 3,000

= Tsh. 1,900,000/=

ii) Liquid nitrogen transport containers

25 LD Classic USD 750 = T.sh. 480,000/=

35 LD (1 Unit) USD 800 = Tsh. 520,000/=

The containers are for storage of semen and embryos.

The faculty doesn't have these essential equipment

but has been borrowing them from the Government has been difficult.

The faculty requests to buy containers of its own.

iii) Veterinary fibrescope for small animals

USD 4,000 = T.sh. 2,550,000/=

The one available was bought in 1984  
and is now irreversibly out of order.

The equipment is used for diagnosis of gastrointestinal,  
respiratory and arthropathological conditions.

iv) Anaesthesia machine with halothane vaporizer for large animals

USD 2,000 T.sh. 1,300,000/=

The faculty doesn't have such equipment. This  
equipment is for administration of anaesthesia during  
surgical manipulation in large animals.

v) Respirator

USD 1,000 = Tsh. 630,000/=

There is none in the faculty. It is used for positive  
pressure ventilation in animals for control of  
anaesthetic emergencies.

vi) Accessories of anaesthetic machine

1. Rebreathing bags USD 400 = Tsh. 260,000/=

The ones present are worn-out

2. Magill endotracheal tubes with balloon for  
small animals USD 300 = T.sh. 200,000/=

The ones present are worn-out.

3. Magill endotracheal tubes for large animals

USD 400 = Tsh. 210,000/=

These should be bought together with the large  
animal anaesthetic machine.

4. Metal rack for wall mounting of endotracheal tube

USD 80 = Tsh. 55,000/=

5. Plastic connector for endotracheal tube

USD 40 = Tsh. 28,000/=

(f) Research equipment in Veterinary Pathology

Students taught Pathology are 3rd, 4th and 5th year undergraduates as well as postgraduates. The faculty handles about 2,000 samples for disease investigation and conducts postmortem examination on about 1,500 carcasses of various animals per year. At the moment practicals in microscopy rely on use of binoculars that can be engaged by one person at a time. This does not provide simultaneous viewing and discussion between student and instructor or between diagnosticians. To facilitate teaching in this area the faculty requests NORAD to donate money for buying a discussion microscope, a video camera and adaptor module for microscopy.

The disposal of the 1,500 carcasses currently autopsied per year is through a single long drop pit designed to allow for biodegradation of the carcasses and to soak away into the surrounding ground. The pit has limitations in that it gives bad smell to the surroundings and as more carcasses come in it will soon be filled. The alternative to the long drop pit is a gas-fuelled incinerator which has never been operational since installation due to technical sophistication and problems in the gas supply system. A more feasible alternative is the installation of an oil fuel incinerator based outside the present postmortem building.

To facilitate teaching, diagnostic work and to enhance research the faculty is therefore requesting the following inputs from NORAD:-



<u>Item</u>		
1.	One incinerator - Oil fuel based	USD 20,000 =T.shs. 12,600,000/=
2.	Rotary Head Microtome	USD 7,000 =T.shs. 4,410,000/=
3.	Accessories for freezing microtomy	USD 1,000 =T.shs.630,000/=
4.	Paraffin stretcher	USD 1,000 =T.shs. 630,000/=
5.	Video Camera and adaptor module for light microscopy	USD 1,000  =T.shs. 630,000/=
6.	High resolution projection screen(Olympus AH-SPS-w)	USD 3,000 =T.shs. 1,890,000/=
7.	Discussion Microscope with multiviewing attachments (Olympus BHz-MDO-1)	USD 6,000 =T.shs. 3,780,000/=
		Total = USD 38,000 =T.shs. 24,000,000

- Outputs
- (a) Well-trained veterinary graduates
  - (b) Rehabilitated buildings, repaired/replaced equipment
  - (c) Updated staff through attending Scientific Conferences

- 3.6 Indicators
- (a) Once the facilities are provided as requested there will be better teaching which will result into better student performance.
  - (b) Some of the equipment requested will facilitate research and hence increase number and quality of scientific publications and research results

#### 4. Project Analysis

##### 4.1 Technical analysis

Most of the estimates are based on well known procedures: technical problems are not envisaged.

##### 4.2 Financial analysis:

The support will enhance the capability of the Faculty of Veterinary Medicine in teaching, research and extension. This strengthened capability will enable the faculty to enroll more postgraduate students. Fees derived from postgraduate students will contribute towards sustainability of funding in the faculty. Moreover the improvement of the veterinary clinic will enable it to earn more money for the faculty through disease treatment, surgery and artificial insemination services. This money will also contribute towards sustainability of funding in the faculty.

Improvement of research facilities will consolidate research in the faculty. Because of this the faculty will be able to attract consultancies from Commercial Companies concerned with livestock eg. drug companies etc. and in so doing obtain more funds for running its activities. The Tanzania Veterinary Journal will be self-sustaining through sale of the different volumes produced and through advertisements related to the veterinary profession.

##### 4.3 Monitoring, evaluation, feedback from experience

Progress report will be submitted to the DRPGS three months before the end of the financial year 1996/97 to reflect immediate objectives and achievements. NORAD will have the mandate to monitor the subproject anytime during the year. Requests for support for 1997/98 will be made basing on the experience of the first year (1996/97). At the end of the fourth year a thorough evaluation will be made to determine success and problems as recommended in the Framework Agreement.

5. Project Implementation

The subproject will be administered by the Dean of Faculty who will be assisted by the Heads of Departments. Matters pertaining to the subproject will be reported to DRPGS for onward transmission to NORAD.

6. Conclusion

The amount requested from the unallocated fund of NOK 2,150,000 (approximately = T.Sh. 215,000,000/=) by the Faculty of Veterinary Medicine is T.Sh. 92,600,000/=. This request is much lower than the requirements. We had to limit our requests because we are not the only ones utilizing the unallocated funds. However, the other requests from the faculty will be made in the subsequent years of the Project.

## BREAKDOWN OF THE COSTS IN TSHS. INTO A 4 - YEAR PERIOD

Item	1996/97	1997/98	1998/99	1999/200
1. Replacement of 3 cold room machines	20,000,000/			
2. Maintenance and fueling of stand-by generator	2,500,000/=	1,700,000/=	1,700,000/=	1,700,000/
3. Purchase and maintenance of heavy-duty and small photocopies	6,300,000/=	3,500,000/=	3,500,000/=	3,500,000
4. Replacement & repair of air-conditioners	7,000,000/=			
5. Computers				
6. Printers		30,000,000/		
7. CD-ROM facility	1,000,000/=	11,500,000/		

Item	1996/97	1997/98	1998/99	1999/200
8. Replacement of typewriters	4,800,000/=			
9. Tanzania Veterinary Journal	1,000,000/=	1,000,000/=	1,000,000/=	1,000,000/=
10. Improvement of SUA Veterinary Clinic	6,000,000/=	6,000,000/=	4,000,000/=	
11. Laboratory equipment, drugs and chemicals	15,000,000/=	30,000,000/=	30,000,000/=	25,000,000/-
12. Improvement of the Audio visual unit	1,000,000/=	5,000,000/=	5,000,000/=	5,300,000/=
13. Attending Scientific Conferences	5,000,000/=	20,000,000/=	20,000,000/=	15,000,000/-
14. Two hard-top toyota L/cruisers	30,000,000/=	30,000,000/=		

Item	1996/97	1997/98	1998/99	1999/2000
15. Basic research equipment in laboratories.				
a) <u>Physiol. Biochem. Pharmacol. &amp; Toxic.</u>				
i) HPLC				
ii) Automated spectrophotometric analyser		3,000,000/=		
iii) Thermoregulated high speed centrifuge & ultracentrifuge		4,000,000/=		
iv) Atomic absorption spectrophotometer			3,000,000/=	
v) Laminar Flow Hood (sterile)				
b) <u>Med. &amp; Public Health</u>				
i. 1 Elisa machine with printer		7,000,000/=		
ii. 3 balance machine (Sartorius)			1,200,000/=	
iii. 2 incubators			800,000/=	
iv. 1 oven			1,500,000/=	
v. 2 deep freezers		1,500,000/=		
vi. Water bath (shaking type)		1,500,000/=		
vii. Refrigerator				
viii. 2 Microscopes		400,000/=		
ix. Small items eg. McMaster slides, improved Naubauer chamber, hot plates with magnetic stones				2,500,000/=
		1,075,000/=		1,000,000/=

Item	1996/97	1997/98	1998/99	1999/2000
c. <u>Vet. Anatomy</u>				
i. Glass knife cutter				
ii. Closed circuit TV system		3,150,000/=		
iii. Ultrathion microtome			6,3,000/=	
iv. Cryostat (freezing microtome)				6,300,000/=
				6,300,000/=
d. <u>Microb. &amp; Parasit.</u>				
i. 2 ovens @ 400,000/=				
ii. 2 upright freezers @ 600,000/=				
iii. 3 Incubators (Hereans) @ 500,000/=		800,000/=		
iv. Refrigerated centrifuge (Pizon)		1,200,000/=		
v. Sartorius balance (max.wt. = 3000g)		1,500,000/=	1,500,000/=	
vi. Autoclave (Lytzen)		500,000/=		
vii. Fridge freezer		6,000,000/=		
viii. 2 liquid nitrogen tanks @/400(lf= T.sh. 900/=)		350,000,000/=	500,000/=	1,500,000/=

Item	1996/97	1997/98	1998/99	1999/2000
e. <u>Surgery, Rep. &amp; Obst.</u>				
i. Sterio dissecting microscope				
ii. Liquid nitrogen containers		1,900,000/=		
iii. Veterinary Fibrescope		1,000,000/=		
iv. Anaesthetic machine for large animals		2,550,000/=		
v. Respirator		1,300,000/=		
vi. Accessories of anaesthetic machine		630,000/=		
1. Prebreathing bags				
2. Magill endotracheal tube for small animals		260,000/=		
3. Endotrached tubes for large animals		200,000/=		
4. Metal rack for mounting endotracheal tubes		260,000/=		
5. Plastic connector for endotracheal tube		55,000/=		
		28,000/=		



	1996/97	1997/98	1998/99	1999/2000
<u>Veterinary Pathology</u>				
Incinerator Oil-fuel based			12,600,000	
Rotary Head microtome				
Accessories for freezing microtomy		4,410,000/=		
Paraffin stretcher		630,000/=		
Video camera and adaptor module		630,000/=		
High resolution projection screen		630,000/=		
Discussion microscope				1,890,000/=
				3,780,000/=
----- totals	----- Shs. 92,600,000/=	----- Shs. 174,580,000/ =	----- Shs. 92,600,000/=	----- shs. 73,780,000/=

Total requested for the 4 years = T.Shs. 433,560,000/=

**SUMMARY OF THE BUDGET FOR STRENGTHENING THE  
FACULTY OF VETERINARY MEDICINE**

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	Year 1	Year 2	Year 3	Year 4
1. Training	5m/=	20m/=	20m/=	15m/=
2. Research support				
i. Equipment	56.6m/=	123.58m/=	71.6m/=	57.78m/=
ii. Transport	30m/=	30m/=	-	-
iii. Dissemination	1m/=	1m/=	1m/=	1m/=
	92.6m/=	174.58m/=	92.6m/=	73.78m/=

STUDY PROPOSAL FOR NORAD SUPPORT TO THE FACULTY OF VETERINARY  
MEDICINE (FVM) AT SOKOINE UNIVERSITY OF AGRICULTURE (SUA).

TERMS OF REFERENCE

1. BACKGROUND AND JUSTIFICATION

The Faculty of Veterinary Medicine (FVM) at Sokoine University of Agriculture (SUA) is the only institution providing degree level studies in Veterinary Medicine in Tanzania.

The programme was started in 1976. At its initial stages, the programme was supported by the Government of Tanzania. However, the greater part of the financial support has been from Denmark through DANIDA. DANIDA support started in July 1979 and ended in June 1994. This support is the source of the whole physical infrastructure at the Faculty. DANIDA has also throughout this period provided most of the operational funds and has also financed the staff development programme at the Faculty for most of the current 42 members of academic staff and 23 technicians.

It was hoped that at the termination of the ~~DANIDA support to the FVM~~ the Government would have taken up funding of the Faculty. However, due to severe financial constraints, the Government has been able to provide only 16% of the amount needed to run the Faculty.

As a result of this financial constraint, a number of faculty facilities have suffered to a big extent. These include:-

- (a) Teaching - due to breakdown of some laboratory facilities, short supply of books and manuals as well as insufficient supply of chemicals and equipment for the laboratories.
- (b) Research activities - due to lack of funding and poor laboratory facilities.
- (c) Curriculum development - because staff do not have the funding for exchanging expertise with other institutions on matters of curriculum building, producing teaching materials, e.g. compendia, atlases, etc. Furthermore, links with other universities in the developed world are difficult to implement due to lack of funds.

(d) Transport The current vehicles used for student practicals, research and outreach, are aging and servicing them is becoming increasingly expensive. Their replacement is also uncertain.

(e) Smooth take off by finalists

Finalists used to be provided with initial surgical kits to enable them of go into private practice though at a small scale. This facility can no longer be provided.

(f) Refresher courses for field veterinary personnell

These courses used to be provided to field staff to upgrade their knowledge and update them on new issues. This facility can no longer be provided.

In view of the aforesaid problems, the Faculty has been looking for funding so that its activities do not suffer.

The Faculty during the first SUA-NORAD Annual Meeting held on 8-9 February, 1996 under the new Frame Agreement, submitted a project proposal (Appendix I) requesting NORAD to support the Faculty by providing T.shs.433.56m/= over a period of 4 years as contained hereunder:-

<u>Year</u>	<u>T.shs.</u>
1996/97	92.6m/=
<del>1997/98</del>	<del>174.58m/=</del>
1998/99	92.6m/=
1999/2000	<u>73.78m/=</u>
Total T.shs.	<u>433.56m/=</u>

During the meeting, a total amount of T.shs.12.65m/= was approved for allocation to the Faculty of Veterinary Medicine for the year 1996/97. In addition, it was suggested that it would be helpful if a study of the Faculty is undertaken in order to obtain adequate information upon which future support can be based. The meeting was also informed that Norway has veterinary experts who could undertake such a study with NORAD's

assistance. Thus, this write-up is a study proposal in which SUA requests NORAD to engage a consultant to study the current situation of the Faculty and make pertinent recommendations upon which future support can be based.

## 2.0 OBJECTIVES OF THE STUDY

The main objective is to formulate a proposal for continued Norwegian support to FVM over the next three years, thereby ensuring optimal utilization of scarce resources and maximizing project output.

## 3.0 SCOPE OF WORK

The work shall comprise, but not necessarily be limited to the following tasks:

### 3.1 Background information on the Faculty

- (1) Present a brief overview of the Faculty history, plans and priorities for further development, in particular with respect to intake of undergraduate and postgraduate students and research.
- (2) Present the Faculty's budgetary allocations from Government subvention as compared to Donors' support for the last four financial years with distribution in different cost centres, i.e. Dean's office, departments, units, etc.
- (3) Present an overview of all present and promised donor support to the Faculty on the different cost centres.

### 3.2 Possible areas of support

- (1) Discuss briefly the present situation of all the Departments, Units and other cost centres at the Faculty and indicate those which represent bottlenecks with respect to the operation and development of the Faculty as a whole.
- (2) Discuss the Faculty's plans for review of the existing academic programmes and new programmes.

- (3) Present a list of priorities of the different needs identified with realistic cost estimates for the next three years.
- (4) Propose other possible alternatives for sustainability of the Faculty.

4. **MODE OF WORK**

- 4.1 The work shall be based on a study of all relevant documents and discussions with relevant personnel both within and outside the University.
- 4.2 The work shall be carried out within a period of two weeks and a draft proposal shall be submitted to the Vice Chancellor of the University by the end of this period.
- 4.3 The proposal shall address itself to all major points in NORAD's "Checklist for Project proposals".
- 4.4 The consultant(s) shall be nominated by NORAD and appointed by the University.

5.0 **BUDGET**

As per NORAD's terms for consultants.

## FACULTY OF VETERINARY MEDICINE

FUNDS ALLOCATED TO THE FACULTY OF VETERINARY MEDICINE BY  
THE GOVERNMENT OF TANZANIA

YEAR	ACTUAL SALARIES + FRINGE BENEFITS TSHS.	OTHER CHARGES + MATUMIZI MAALUM (RUNNING COTS) TSHS.
1992/93	75,587,777.75	27,866,707.=
1993/94	93,506,680.50	31,196,247/=
1994/95	148,669,924.40	21,721,475/=
1995/96	165,418,823.80	73,396,429/=





## FACULTY OF VETERINARY MEDICINE

DONOR SUPPORT IN THE FACULTY OF VETERINARY MEDICINE IN THE  
FACULTY OF VETERINARY MEDICINE

GRANT HOLDER	YEAR	AMOUNT	DONOR
1. Prof.Matovelo	1993-95	USD 9,000,-	IFS
2. Dr. J. Lyaku	1996	USD 12,000,-	IFS
3. Dr. M. Mtambo	1994-96	USD 12,000,-	IFS
4. Prof. R.D.Mosha	1993-94	USD 6,000,-	Cheminova Denmark
5. Animal Science & Physiology (Dr. A. E. Pereka) Depts.	1994-97	DKK 3.9M/=	ENRECA
6. Prof.D.M.Kambarage	1993-96	f200,000	ODA
7. Rodent Research	1996	BF 1M/=	BELGIUM
8. FVM (local training)	1995-96	USD 90,000,-	DANIDA
9. Goat Health Project (Prof. Kambarage	1993-96	f100,000,-	ODA
10. Prof.B.M. Kessy et al			IAEA

Dept. of Microbiology & Parasitology - see a separate sheet



26 June 1996

Dean,  
Faculty of Veterinary Medicine,  
SUA.

Dear Prof. Mosha,

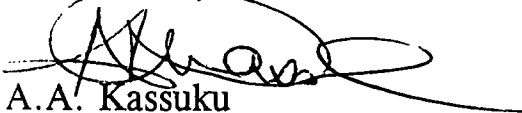
RE: EXTERNALLY FUNDED PROJECTS IN THE DEPARTMENT:

Please find below a list of externally funded projects for the past four years.

Recipient	Year / Period	Amount	Donor
Kassuku, A.A.	1994	12,000 US \$	IFS
	1991 to 1996	900,000 DKK	DANIDA
	1992	12,000 US \$	FAO
	1992 to 1993	13,000 US \$	DBL/ DANIDA
Minga, U.M.	1994 to 1996	50,000 US \$	GTZ
	1994 to 1996	20,000 US \$	FAO
Maeda Machang'u	1993 to 1995	20,000 US \$	DANIDA
	1994 to 1995	7,500 US \$	FAO
Gwakisa, P.S.	?	?	FAO
Kilonzo, B.S.			IDRC
Machang'u, R.S.			

Best regards,

Yours sincerely,

  
A.A. Kassuku



*The Guardian July 3 1996*

# Form ministry for livestock, says Lowassa

By Lucas Liganga,  
Dodoma

FORMER cabinet minister Mr Edward Lowassa yesterday called upon the government to examine the possibility of establishing a fully-fledged ministry for livestock matters.

The Monduli member of parliament said that livestock-keeping was a potential money spinner but has for decades been neglected. Creation of a separate ministry to oversee its revamping and transformation would yield excellent benefits, the legislator stated.

Debating the 1996/97 budget proposals for the Prime Minister's Office, Mr Lowassa said that the innovation in President Benjamin Mkapa's cabinet list back in November, where water was merged with livestock in one ministry had not succeeded. The livestock sector was later moved back to the Ministry of Agriculture and Co-operatives, he noted.

The livestock sector had been neglected because its role in the ministry in which it is located has not been clearly defined. The government therefore needs to take initiatives to revitalise the sector, which is so far earning some 350bn/- a year into the country's wealth, he said.

About 3.5 million people are fully engaged in livestock activities, including poultry, which had enabled the country to cut on imports of meat, milk and eggs. Some 250,000 tonnes of beef are being produced yearly, 4.4 million pieces of hides and skins and 300 million eggs, he explained.

It was sad to learn that the sector is usually allocated a thin budget since the 1987/88 financial year. It was also disappointing that between 80 and 90 percent of the budgetary vote for the Ministry of

Agriculture and Co-operatives was meant for the payment of wages and salaries, he lamented.

During the 1987/88 financial year, the ministry was allocated 1.4bn/- out of which 348.7m or 25 per cent of the vote went to the livestock sector. In the 1991/92 financial year the ministry got a 4.7bn/- vote of which some 798.4m/-, an equivalent of 17 per cent, was given to the sector. These allocations were almost entirely devoted to recurrent expenditure, he noted.

The ministry had a recurrent expenditure vote of 11.6bn/- in the last financial year, out of which 1.9bn/- was for the livestock sector, an equivalent of 16 per cent of the allocation. Statistics for development expenditure allocation to the livestock sector also invited gloomy reading, with an allocation for 2.17bn/- in 1987/88, of which only 15 per cent (362.1m/-) was for the livestock sector, he pointed out.

In 1991/92, the sector received six per cent of the ministry's budget allocation of 4.28bn/- and last financial year it obtained a mere seven percent of the ministry's allocation of 5.6bn/-, he noted.

The persistent shortage of funds for the sector had led to the relegation of livestock research institutes in the country to intensive care units of diseases that cannot be cured with the funds allocated. Numerous livestock research scientists had left the country to seek greener pastures elsewhere, he said.

Mr Lowassa did not object to the budget proposals for the Prime Minister's Office, saying the proposals on the whole had a positive vision for economic development. Prime Minister Frederick Sumaye has requested the National Assembly to approve 5,177,936,000/- for recurrent expenditure and 4,017,789,000/- for development expenditure.

**AGREEMENT**  
**between**  
**SOKOINE UNIVERSITY OF AGRICULTURE**  
**and**  
**THE AGRICULTURAL UNIVERSITY OF NORWAY**  
**on**

**The Cooperation between SUA and NLH in the Field of Agricultural and Allied Sciences**

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**PREAMBLE**

Sokoine University of Agriculture (hereinafter referred to as SUA) and the Agricultural University of Norway (hereinafter referred to as NLH) acting: firstly, in pursuance of the Agreement between The Government of the Kingdom of Norway and The Government of The United Republic of Tanzania on the provision of continued Norwegian support to SUA dated ..... 1996, and secondly, on the basis of a long standing bilateral cooperation between:

- The Faculty of Forestry (SUA) and the Department of Forestry (NLH)
- The Department of Animal Science and Production (SUA) and the Department of Animal Science (NLH)
- The Department of Soil Science (SUA) and the Department of Soil and Water Sciences (NLH)
- The Institute of Continuing Education (SUA) and NORAGRIC (NLH)

And with financial support from the Government of the Kingdom of Norway through the Norwegian Agency for Development Cooperation (NORAD), the Parties have desired to:

- a) Enter into a long term agreement on a broad programme of cooperation to strengthen professional and technical capacity in education and research
- b) Nullify all the existing agreements between Faculty/Institute/Departments of SUA and NLH by approving this Agreement under the following articles:

**ARTICLE 1: TITLE**

The agreement is named "The Cooperation between SUA and NLH in the field of agricultural and allied sciences" (hereinafter referred to as "the Agreement").

**ARTICLE 2: STATUS**

The objective of the Agreement is to maintain and widen the cooperation between SUA and NLH following the nullification of previous agreements of the same nature between Faculty/Institute/Departments of SUA and NLH. The link is established within a Frame Agreement based on The Agreed Minutes of the Country Programme Review Meeting between Tanzania and Norway held 10 - 12 March 1992.

**ARTICLE 3: AIM OF THE COOPERATION**

The aim shall be to strengthen professional and technical capacity in education and research for the benefit of both Parties.

#### **ARTICLE 4: FIELDS OF COOPERATION**

The frame-work for cooperation shall encompass the fields of:

- Forestry Science
- Animal Science
- Soil Science
- Natural Resources, Beekeeping and Wildlife Management
- Sustainable Agriculture
- Aquaculture
- Agribusiness
- Allied sciences

#### **ARTICLE 5: MODALITY OF COOPERATION**

The modality of cooperation shall include the following activities:

- Exchange of academic staff
- Exchange of students
- Joint supervision of graduate students at both institutions
- Joint research projects
- Joint seminars and workshops
- Collaboration in preparation of teaching materials
- Curriculum development
- Sabbatical programmes

#### **ARTICLE 6: RESPONSIBILITIES**

Responsibilities of the two parties shall be to:

##### **6.1 SUA**

- Provide facilities for teaching and research for academic staff and students involved in the activities stipulated under Article 4 in Tanzania.
- Participate in joint research projects, which will be based on clearly prepared Project documents stipulating scientific content, responsibilities for project leadership, funding, implementation, time-frame, dissemination of results, etc.
- Participate in teaching and supervising visiting students.
- Participate in teaching and supervising students at NLH
- Provide accommodation for NLH staff and students involved in Projects and teaching in Tanzania.
- Organise the purchase of equipment and supplies for joint project activities in Tanzania.

##### **6.2 NLH**

- Provide facilities for teaching and research for academic staff and students involved in the activities stipulated under article 4 in Norway.
- Participate in joint research projects which will be based on clearly prepared project documents stipulating scientific content, responsibilities for project leadership, funding, implementation, time-frame, dissemination of results, etc.
- Participate in teaching and supervising visiting students
- Participate in teaching and supervising students at SUA
- Provide accommodation for SUA Staff and students involved in projects and teaching in Norway.
- Organise the purchase of equipment and supplies for joint project activities in Norway.

## **ARTICLE 7: ORGANIZATION AND ADMINISTRATION**

7.1 The Agreement shall be administered by both parties. There shall be a Steering Committee consisting of:

- The Vice Chancellor of SUA and Rector of NLH
- Two representatives from SUA
- Two representatives from NLH

The Steering Committee shall consider and approve proposed annual work plans, budget proposals, and progress reports and recommend them for approval by NORAD or any other potential funding agency. The Steering Committee shall meet in September every year, and the venue and chairmanship of such meetings shall alternate between SUA and NLH. The parties shall strive to implement the Steering Committee meetings in conjunction with other businesses in order to minimize travel costs.

7.2 The overall responsibility for the Agreement at SUA shall be overseen by the Directorate of Research and Postgraduate Studies (DRPGS), while the overall responsibility for the Agreement at NLH shall be overseen by NORAGRIC.

Matters that require direct contact between Departments or Projects, such as, formulation, planning and execution of research projects will be handled directly by relevant Heads of Departments or Project leaders. Heads of Departments or Project Leaders will have mandate to sign contracts on mutually agreed projects after consultations with and approval by the coordinators.

## **ARTICLE 8: FUNDING**

Both parties shall work together to solicit funds from NORAD and other funding agencies for the purpose of implementation of programme activities.

## **ARTICLE 9: OWNERSHIP OF EQUIPMENT**

Any equipment bought for collaborative projects shall be the property of the acquiring institution unless otherwise specified in the relevant project contract.

## **ARTICLE 10: PUBLICATION OF RESULTS**

Results from collaborative research projects shall only be published after the consent of both parties.



## ARTICLE 11: REPORTING AND EVALUATION

Progress and financial reports shall be submitted annually to the Steering Committee for consideration.

An evaluation of the Agreement shall be undertaken after two years and on completion of every five year programme. The terms of reference for the evaluation shall be approved by the Steering Committee.

## ARTICLE 12: DISPUTES, COMMENCEMENT, DURATION, AMMENDMENTS AND TERMINATION

- 12.1 If any dispute arises relating to the implementation or interpretation of this Agreement, there shall be mutual consultations between the Parties with a view to secure a successful implementation of the programme activities.
- 12.2 This Agreement shall enter into force on the date of the last signature to this document.
- 12.3 The Agreement shall be carried out in five year programmes. Ammendments to this Agreement can be proposed by the Parties.
- 12.4 Any amendments to this Agreement shall be subject to approval by the Steering Committee.
- 12.5 Notwithstanding the preceding four sub-paragraphs, either Party may terminate this Agreement by giving six months written notice to the other Party.

Acting on behalf of their respective Institutions, the undersigned have signed the Agreement in two originals in the English language.

For Sokoine University of  
Agriculture

For the Agricultural University  
of Norway

Prof. A.B. Lwoga  
Vice-Chancellor

Prof. R. Abrahamsen  
Rector

Date.....

Date.....

