

POST-GRADUATE TRAINING IN VETERINARY MEDICINE: ARE THERE ALTERNATIVES TO RESEARCH TRAINING?

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SUMMARY

The Master of Veterinary Medicine (MVM) is the only intermediate post-graduate training programme at The Faculty of Veterinary Medicine, Sokoine University of Agriculture (SUA). It is designed to train Veterinarians for positions in teaching, research and "field services" (Anon 1996). The structure of this degree is similar to that of MSc degrees found at SUA and in other Universities within the sub-region. Our analysis shows that, the MVM being a research degree is well suited as a research training model. The degree was developed for the purpose of enhancing staff development within the faculty. Currently there is an expressed desire for applied specialised professional programmes in areas such as Preventive Medicine, Diagnostic Veterinary Medicine, Veterinary Planning and Management, et cetera. These are interdisciplinary programmes whose emphasis is on the development of skills to solve professional problems largely as they arise in the field. Development in provision of private veterinary services have also to be taken into account. These new development make us question the suitability of the current MVM -MSc model for training non-research professionals for both the public and private sectors of the delivery system. Four other models which are complementary to the MVM-MSc model in producing the right mix of skills for the animal health sector are discussed. Models examined are continuing professional development (CPD) programmes; professional masters courses, the Intern-MSc/MVM model and professional diploma courses.

INTRODUCTION

Post-graduate training at Sokoine University of Agriculture (SUA) started in 1982 (Semuguruka 1987) with the Master of Veterinary Medicine (MVM) programme. The MVM was initially developed for the purpose of training academic staff of the Faculty of Veterinary Medicine. Later candidates from outside SUA have been enrolled and their numbers are growing. The programme is in two phases. The first year is spent on taught masters' level courses. The second phase is research work

culminating in the submission of a thesis/dissertation. Successful candidates are awarded the MVM degree. The structure of this programme is similar to that of Master of Science (MSc) degree offered by other faculties at SUA.

Master's courses at SUA are essentially research training programmes. During the first year at least two common research courses are taught (AEA 600-Statistics and AEE 601 Research Methods and Planning). These are taught early to enable candidates

to identify and prepare their research proposals as early as possible. The other courses in the first phase, are "Courses likely to assist the student in his research work" to quote Semuguruka (1987) in his description of the MVM programme.

After twenty years of existence and building up a competent cadre of academic staff, the SUA Faculty of Veterinary Medicine has to examine the way forward. There are emerging challenges in the development of human capital appropriate to the Tanzanian and sub-region's animal health delivery systems. We therefore examine the suitability of the MVM/MSc degree model, the intern-MSc model, the Diploma model and the continuing professional development (CPD) programme model for producing various types of high-level cadre for animal health systems.

Training Needs

Good training programmes are those that develop congruency between the skills offered by the programme and the skills required by the environment. Any mismatch between the two will result in resource misallocation and therefore loss of efficiency in the use of scarce resources including human capital. In developing human capital for delivery systems we need to: (1) match duties to be performed with the appropriate training programmes and (2) to remember that any delivery system is made up of a number of different components (Mlangwa and Kisauzi 1994a).

For example, managers of animal health delivery systems (both private and public) require specialist training (Mlangwa and Chilonda 1996). But as we argue below the research model may be ill equipped to train them. On the other hand, for a delivery system to be effective and efficient, it

requires to have a right mix of people with different but complementary skills. An animal health research cum diagnostic wing for example will require the skills of research managers, researchers and people with laboratory and field diagnostic skills. It is unlikely that a single training model will match skills acquired and skills needed in such a complex environment.

Veterinary Extension and Veterinary Field Services

To quote the MVM degree preamble "The Master of Veterinary Medicine (MVM) Programme is designed to train graduates for professional position in research and teaching in Educational and Research Institutions as well as veterinary extension in Ministry of Agriculture and Livestock Development and its related parastatal organizations (Anon 1996). The term extension has been misused in Tanzania (Anon 1992, Keregero J.B. 1995, Private Communication). Modern extension work deals with information delivery to producers, training in the use of new technology and creation of institutions for farmers which also facilitate information exchange (Butcher 1994).

It is often assumed that veterinarians are the only people who can deliver certain veterinary services (Van den Ban and Hawkins 1988). This is usually enshrined in the laws governing animal disease management and the conduct of the veterinary profession. Veterinarians thus perform non-extension direct services (treatment, control, preventive and corrective medicine) in addition to extension activities as defined above.

Unfortunately, in Tanzania the term Veterinary extension services has for some time been taken to mean the non-extension

direct services performed by the veterinarian on the animal or its environment. For the purpose of this discourse we call these duties, *Veterinary Field Services*. For training purposes, we therefore need to distinguish the needs of extension work and field services work.

Extension workers are the link between research and producers. As such it is essential that they have knowledge of the research process and the skills to evaluate research results. For this reason, the training of subject matter specialists should include research training. Extension workers should be in a position to identify problems which can then be tackled by researchers. The Researcher - Farmer link through extension is thus a two way process (figure 1).

The MVM-MSc Model

The MSc and Ph.D. degrees are primarily research degrees (Howel 1979). Since the MVM is structured after the MSc model it is also a research degree (see above). MVM graduates are expected to be absorbed into research organizations and teaching institutes. They will be teachers for diploma students (Semuguruka 1987).

There is a regrettable tendency to apply the MSc-Ph.D. training models to all aspects of post-graduate education such as clinical training (Howel 1979). We may also add veterinary field services and extension services. Training in Surgery (SUA) and in Diagnostic Veterinary Medicine (University of Zambia) are two pertinent examples. Although the MVM graduates in surgery are termed specialists, in real sense they are not. MVM students in surgery are not exposed to practical surgery. They are mainly involved in research which may not necessarily have a surgical exposure (Mgasa 1992). Students are in fact confined to a very

small area of research. The need to expose post graduate students to surgical operations and related activities has been stressed (Mbiuki 1992, Mgasa 1992). It is high time that we examine the needs of surgery and related clinical areas when considering to produce specialists.

The University of Zambia offers an MVM in Diagnostic Veterinary Medicine. There is an intention to develop this programme into a regional one. The program is based on the MVM/MSc research model despite its objectives being those of a professional applied program. So far there is not enough exposure to the practice of diagnostic work. This programme is more likely to produce researchers and not diagnostic professionals.

The New Challenges:

There is now an expressed desire to mount graduate programmes in preventive veterinary medicine, animal health and production at SUA, veterinary planning and management (Mlangwa and Chilonda 1996) and post-experience courses for the private and public sectors. It is imperative that the objectives of these programmes are clearly spelled out and agreed upon by the main stake holders. Account should be taken as to which training model will best meet the programme objectives. For example the first 3 programmes may be offered as research degrees or as professional courses. Unless decision makers can conceptualize clearly the difference between research training and professional training, the training model chosen may not be congruent with the objectives and the working environment of the products.

Professional Post Graduate Programmes

As stated above the MVM/MSc are research degrees, the appropriate model for applied professional programmes are the professional masters courses, professional diploma courses and CPD programmes. The professional applied courses will normally have a taught course component to include basic sciences for the area of specialisation. *There is also a great emphasis on practical skill development either through internship or attachment courses; and development of problem solving skills.* This is a very important characteristic of professional programmes. The product of such a programme will be expected to act on problems presented to him as long as it is within his area of specialisation. The professional veterinarian do not have the same degree of choice open to the research veterinarian. The latter will normally study problems of interest to them.

In making decisions, they have to use data from research reports and articles. They may also have to collect their own data. For this reason they need to be taught the essentials of research and carry out limited applied research. The results of this research may be presented as a research report or a manuscript for publication in a recognized journal.

Professional training also tends to be interdisciplinary in nature. This may place some pressure on course development and coordination given that lecturers may be used to running programmes in their own field with little interactions with other departments. Each participating department and lecturer will be contributing to a whole which includes areas outside their academic jurisdiction. Lecturers and departments will have to subordinate their disciplinary areas to the objectives of the program.

At Post-graduate level, a degree of specialisation is inevitable. This tends to limit the demand for any particular program especially when the number of potential beneficiaries is low. One solution to this problem is to develop regional programmes (Mlangwa and Chilonda 1996) for those areas which are likely to be sustainable. For some areas training abroad will still be more economical and convenient.

The Intern - MVM model

This model is very similar to the research orientated MVM/MSc programmes that are currently in force at SUA and the subregion. The major difference is that candidates have to spend a defined period as interns at the beginning of the program, before they carry out their research program or through out their study period. A regional meeting on surgery recommended the addition of this element to the existing MVM programme (Mgasa 1992).

Professional Masters Models

These are common in countries such as the UK, but being one year MSc programmes may not find favor in the subregion where masters programmes usually run for two years. These programmes will be similar in content and quality to the proposed professional diploma programmes. An example in Veterinary Planning and Management programme is given below.

Continuing Professional Development courses

In Tanzania and the sub-region the development of the private sector in the delivery of animal health services is being encouraged (Mlangwa and Kisauzi, 1994b, Kessy and Sinare 1995). A self employed

Veterinarian (SEV) scheme has been set in Tanzania with loans from the European Community to accelerate the privatization process.

The Faculty of Veterinary Medicine has a role to play in the implementation of this important policy and its associated projects. Initially training is likely to be restricted to applied professional courses which focus on either applied technical skills such as special surgical skills or the development of herd health programs or managerial skills. The main managerial skills required will initially be in veterinary practice finance and management. When the private sector becomes well developed then we may experience demand for formal (certificate, diploma, masters) courses in order for the private sector to offer specialist services. The requirements of the private sector for the time being are unlikely to be served by long formal applied courses let alone the M.M. research model. For the private sector we foresee demand on short continuing professional development courses. These will typically be of 1 day to 3 months. Indeed one such course- "Introduction to Elements of Business Management for Veterinarians" 18-23 March 1996 (Dr. Tem, A. Personal Communication 1996)- has already been offered outside the Faculty of Veterinary Medicine.

The Professional Post Graduate Diploma Programme.

An example using the above concepts and guidelines is now given. A speciality applied course for middle level (District and Regional) Veterinary Officers is used to describe this neglected but important model (Mlangwa and Chilonda 1996). There is a dearth of courses for training veterinary managers (middle level) in planning and

management techniques (Mlangwa and Chilonda 1996). In Tanzania the need for such course is documented (Anon 1992). The general arguments for such a course and its nature are well described (Mlangwa and Chilonda 1996). As an applied planning and management program, it fits well the diploma model elaborated above. We therefore call it a Diploma in Veterinary Planning and Management whose objective is to impart skills required in Planning and Managing Veterinary services. Required courses are listed in Table 1 and the research schedule is given in Table 2.

Table 1: Course requirements for the Diploma in Veterinary Planning and Management.

Course	Contract Hours Theory/Practical
1. Statistics	
Veterinary Planning and Management	40/30
Computers in	
2. Veterinary Planning and Management	15/30
3. Research Design	20/30
4. Epidemiology in Veterinary Planning and Management	60/30
5. Economics in Veterinary Planning and Management	60/30
6. Managing Livestock services	60/60
7. Livestock Production Systems and disease Management	60/60
8. Research project	00/240
Total 8 courses	840 hours

Table 2. Research Project Schedule for the DVPM

Term	Week	Activities
Term 1	15	Topic selection
Working break	05	3 weeks attachment to veterinary organisation
Term 2	15	Literature review and proposal
Working break	03	May stay on campus to complete proposal
Term 3	13	Data collection and report/manuscript writing

As managers, candidates have to appreciate the research process so that they can make use of it effectively. For this reason a short project component is part of this diploma course. The results of the project will be presented either as a report or preferably as a manuscript worth publishing in a recognized journal such as the Tanzania Veterinary Journal.

The diploma is a terminal qualification given to those who have done well. Successful candidates who would later desire to become researchers in these fields, can enter appropriate MSc or Ph.D. programmes. This strategy of developing a terminal diploma qualification gives recognition (status) to the program. The tendency to develop Dip/MSc qualification results in the diploma being viewed as an inferior qualification not to be desired on its own.

The University of Guelph, Canada has extended the concept of professional graduate training to the doctorate level. It offers a Doctor of Veterinary Science (D.V.Sc) which is primarily an applied degree, it has an in-service training component and emphasises applied skills. The evaluation of the DVSc also focuses on applied skills (Howel 1979). The essential characteristics of the different models discussed above are summarized in Table 3.

In conclusion the onus is on us to ensure that we match supply and demand given scarce resources at our disposal. We have to make some hard choices and the frame work outlined above should be of help to educators and other stakeholders.

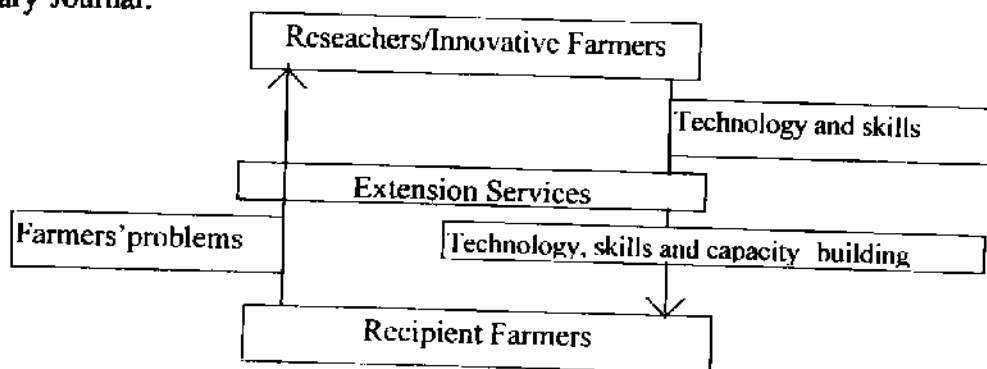


Figure 1 THE FARMER-EXTENSION-RESEARCH LINKS.

Table 3: Some models of graduate training programs suitable for developing countries in sub-Saharan Africa:

Model	Course work and Internship	Research	Total duration (months)	Suitable for	Example of Field.
M.M./MSc	Advanced Scientific	12m and Thesis	24m	Research Training	Epidemiology
Intern-MSc	Advanced Scientific plus extensive Practice	12m and Thesis	27m-36m	Clinical Research Training	Surgery
Post-graduate Diploma	Advanced Applied Courses Practice/Problem Solving	3m and Non-thesis report or Manuscript	12m-15m	Professional services training	Veterinary Planning and Management
Continuing Professional Development	Short and Applied	Depending on objectives a report may be required.	1 day to 3 m	Imparting defined information and or skills.	Veterinary Practice Finance and Management

REFERENCES

Anon. 1992. Evaluation Report support to the Faculty of Veterinary Medicine, Sokoine University of Agriculture, Tanzania, DANIDA Report, DANIDA, Copenhagen.

Anon. 1996. Sokoine University of Agriculture, Prospectus 1995/96/97.

Butcher C. 1994. Extension and Pastoral Development: Past, Present and Future, Pastoral Development Network, Paper No 37d, ODI 1994.

Howel D.G: 1979. The Inter-relationship within the Commonwealth Between Animal Production and Animal Health. Occasional paper No.XLVII 1979 The Commonwealth Foundation, London.

Kessy B. M. and Sinare, Y. 1995. Strategies and challenges of establishing and expanding private veterinary practice. Tanzania Veterinary Journal. 15: 155-162.

Mbiuki S. M. 1992. Post Graduate curriculum in Veterinary Surgery. In M.N. Mgasia (Ed): Proceedings of the first subject meeting in Veterinary Surgery 26-28 May

1992, Arusha Tanzania. Department of Veterinary Surgery, Reproduction and Obstetrics, Sokoine University of Agriculture, Morogoro, Tanzania.

Mgasa M. N. (Ed): 1992. Proceedings of the first subject meeting in Veterinary Surgery 26-28 May 1992, Arusha Tanzania. Department of Veterinary Surgery, Reproduction and Obstetrics, Sokoine University of Agriculture, Morogoro, Tanzania.

Mlangwa, J. E. D. and Chilonda, P. 1996. Veterinary Planning and Management-training for middle level managers: a neglected case. In *Livestock Diseases in the Tropics: Livestock Production and Human Welfare*. Proceedings of the VII International Conference of Institutions of Tropical Veterinary Medicine. September 25-29, 1995 Berlin, Germany. 692-696.

Mlangwa, J. E. D. and Kisauzi, D. N. 1994a. Systems approach to animal health delivery in sub-Saharan Africa: Concept development. *Rev. Sci. Tech. Off. Int. Epiz.* 13: 665-672.

Mlangwa, J. E. D. and Kisauzi, D. N. 1994b. Systems approach to animal health delivery in sub-Saharan Africa: The Case of Privatization. *Rev. Sci. Tech. Off. Int. Epiz.* 13: 673-685.

Semuguruka, W. D. 1987. University Training: its adequacy for livestock development in Tanzania. SACCAR workshop No.3. Appropriate manpower for Agricultural Res. and Ext. in SADCC countries. Proc. of Workshop Gaborone, Botswana 25-26 Sept., 1985. pp 58-60.

Van den Ban, A. W. and Hawking, H. S. 1988 *Agricultural Extension*. Long man Scientific and Technical. Essex.