

Current trends in the sectors of interest for veterinary medicine students and job placements of veterinarians in Kenya

Abstract

The Veterinary Medical Profession is a world leader in developing medical and scientific understanding of companion and farm animals in a manner that supports society's desire to care for and derive benefits from them. As the only health discipline with expertise across multiple species and ecosystems, veterinary medicine plays a vital role in protecting and enhancing human and animal health. In Kenya, the profession has been hit hard by both privatization and other government policies. Currently, little understanding exists among institutions and the public as to the challenges, threats, student job sector preferences and opportunities, and educational training needs for the Veterinary Profession.

We conducted a cross sectional survey to assess these factors among veterinary medicine students and veterinarians in Kenya. The study involved forty veterinary medicine students from the University of Nairobi and twenty veterinarians practicing within Nairobi City County. The study was conducted between the months of December 2014 and March 2015.

73%(29/40) of the students preferred working in the private sector, with only 27% preferring the public sector. Bachelor of veterinary Medicine graduation class sizes sharply decreased from 111 in 1994 to a meager 32 in 2006, these numbers have slightly increased from the year 2007. About 80%(16/20) of the practicing veterinarians cited the private sector as the current largest employer of veterinarians in the country.

48% of the students (19/40) cited deregulation of the activities of veterinary paraprofessionals "Quacks" as the greatest threats facing the profession at present and in the foreseeable future. Another 50%(10/20) of the practicing veterinarians reported that wildlife practice is an emerging area of diversification, while small animal practice was identified as the current area with most employment opportunities. Further, approximately 70% of the veterinarians reported small animal practice as still underserved and has good future prospects for growth. Other areas identified as underserved included veterinary practice in the ASALs, Wildlife practice and Donkey and Equine practice.

Keywords: veterinary profession, threats, job preferences, students and veterinarians

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Abbreviations: ASALs, arid and semi -arid lands; BVM, bachelor of veterinary medicine; CAHWs, community animal health workers; ERS, economic recovery strategy; FVM, faculty of veterinary medicine; GDP, gross domestic product; KVA, kenya veterinary association; MOA, ministry of agriculture

Introduction

Kenya has a rapidly expanding human population estimated at 40million with a growth rate of 3.3%(census report 2009). The country has a significant cattle population of nearly 12million and over 15million sheep and goats.¹ Demand for livestock products is outstripping domestic supply.² Over two thirds of Kenya is semi-arid and large areas of the country are suitable only for nomadic livestock production.¹ The livestock industry contributes about 10% to the country's gross domestic product (GDP) and about 42% of total earnings from agricultural sector in the Kenyan economy.³ The industry is currently worth about KShs.10billion.³ Livestock production is a fully privatized function in Kenya and the government's only role is in

provision of extension services especially for improved management practice.⁴⁻⁷

Veterinary Medicine provides a foundation for the medical care of pets, efficient and safe use of Livestock for food and other products; healthcare and use of animals as research models for improving human health; for understanding animals as sentinels for disease and toxic threats, and as signals of ecological change.⁸ The veterinary profession also plays a role in wildlife conservation and in supporting lives and welfare of animals in captive environments.

In Kenya, the profession comprises a small workforce of around 2,000 veterinarians (about one-tenth the size of the human medical profession) educated at a relatively small number of academic institutions.³ More than half of the members of the workforce are companion animal health practitioners.

The livestock industry and veterinary profession in Kenya has been hit hard by past government policies and has also not been evolving fast enough to absorb a reasonable number of veterinarians

graduating every year from the veterinary colleges in Kenya.^{4,7} Veterinary medicine students and veterinarians are therefore faced with uncertainties, massive student loan debts, unemployment⁹ and lower salaries after graduation.¹⁰ This can be partly attributed to privatization and government neglect of the

In veterinary training and education in Kenya, the care of large animals forms the foundation of the course.¹⁰⁻¹² Cow anatomy is the foundation, and pig, dog, horse, chicken, fish and wildlife anatomy are delivered in a comparative context. The same is true for Physiology, Pathology, Theriogenology and Medicine. The primary shortcoming of such a large animal model of instruction relates to its emphasis on large animals when it may be evident that most of the veterinary industry has diversified and requires more specialists than general practitioners.^{13,14}

The Faculty of Veterinary Medicine (FVM) of the University of Nairobi has over the years seen a huge flight of students to other courses, a problem that is compounded by complexity of the course and poor employment prospects after graduation.^{7,10} The financial reward for a veterinary education is well below the benchmarks of other types of training in health professions. This disjunction between tuition and income has been recognized by students and will negatively affect the quality of applicants to the course. This has largely precipitated the flight of students to other professional courses. These pertinent veterinary training and livestock industry hurdles, besides the current and hot issue of a compulsory 12months of internship¹⁵ have a significant impact on areas of interest for students, graduation numbers and job placements of graduate veterinarians. These and other challenges facing students and veterinarians ought to be looked into and addressed promptly so that veterinary training is targeted to the current issues affecting the livestock industry.

A basic understanding of the livestock industry and the veterinary sub sector will go a long way in promoting student confidence and alleviating student uncertainty and disillusionment with regards to training and future job prospects. Given the fore mentioned challenges, the objectives of this study were:

- i. To define students preferred sectors of employment in the Kenyan livestock industry and the motivations behind it.
- ii. To retrospectively review Bachelor of Veterinary Medicine graduation class sizes for the last 20years at the University of Nairobi
- iii. Identify the challenges and threats facing veterinary medical training and profession and therefore define the future prospects of the profession in Kenya.
- iv. Identify the sectors and industries employing most veterinary medicine professionals in Kenya.
- v. Identify the emerging areas for the upcoming veterinary professionals i.e. the students.
- vi. Identify sub-sectors of the livestock industry which are underserved to help direct specific training needs.

Material and methods

Study participants and area

The survey was carried out among veterinarians from both the public and private sectors, practicing within Nairobi City County and

also among veterinary medicine students and lecturers in the faculty of veterinary medicine of the University of Nairobi.

Study design and characteristics of study participants

The study was a cross sectional survey. A total of 60 respondents comprising 40 veterinary medicine students and 20 practicing veterinarians were purposively selected for the study. These were convenient samples and the veterinary medicine students comprised of mainly students in 3rd, 4th and 5th years of study.¹⁶ A total of 12 fifth years (6 males and 6 females), 14 fourth years (8 females and 6 males) and 14 third years (7 males and 7 females) were interviewed. A total of 20 graduate veterinarians (15 males and 5 females) were surveyed. Most veterinarians interviewed were working in clinics within the city of Nairobi and at the university veterinary clinic.

Data collection and analysis: Primary cross sectional data was collected from veterinary Medicine students and veterinarians using two semi-structured questionnaires. The first targeted veterinarians while the other targeted students from the faculty of veterinary medicine in University of Nairobi. The questionnaires were administered through face to face interviews and the respondents were encouraged to express themselves freely and give their honest opinions regarding the questions asked. Secondary data on veterinary medicine student graduation numbers were obtained from the records held at the faculty of veterinary medicine. We entered the data into a standard Microsoft Excel spreadsheet. Qualitative analysis of the data was done using Microsoft excel 2010. The proportions were used to calculate the percentage of responses per question per unit sampling group and the differences in the percentages were directly compared among the respondents.¹⁷

Results and discussion

Preferred employment sector of interest for veterinary medicine students

About 72.5%(29/40) of the students expressed their desire to work in the private sector while only 27.5% wanted to work in the public sector (Figure 1). This is largely motivated by the current financial success of veterinarians who are in private pet paradigm compared to those in the production paradigm. This has provided a powerful incentive for students to want to shift their interest from the public sector to the private sector. The increased value of animals in the pet paradigm (dogs, cats and horses) has been enhanced by strong emotional or anthropomorphic attachment the owners have on them. The value of animals in the production paradigm (cows, pigs, shoats and laboratory animals) is mainly determined by the market price but is also tempered by an owners emotional viewpoint hence the slow increase in value which has led to a stagnation in this area of the livestock industry that is mainly serviced by public sector employed veterinarians.¹⁸

The low interest in Public sector jobs can be explained as an effect of the government's decision to privatization of veterinary services in 1988, due to high personnel costs in the training and deployment of both professional veterinarians and Para-professionals to various districts and provinces in Kenya.² This policy change led to decreased government involvement in the delivery of animal health services hence public sector employed veterinarians got low pay and poor remunerations.² Figure 1 has more details on preferred sectors by veterinary students.

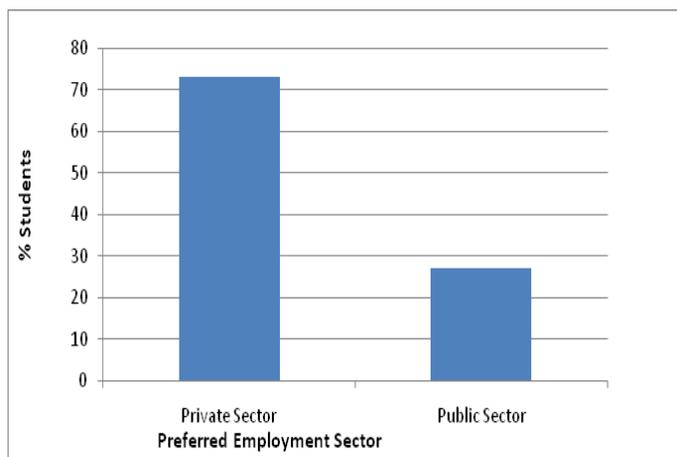


Figure 1 The preferred employment sectors of interest for students at the University of Nairobi veterinary school.

Specific types of employment versus student interests

In the private sector, most students preferred going into private research institutions (35%), followed by small animal medicine and surgery (27.5%), while veterinary public health and epidemiology came in third (15%) (Table1). Zoo animal and wildlife practice came in fourth with 12.5% of the student’s preference. The increased interest in small animal medicine and surgery compared to large animal practice (dairy/beef, small ruminants and pigs) is mainly due to the strong attachment that pet paradigm clients who are largely affluent have on their pets. This can also be explained by the fact that recent entrants into the veterinary profession tend to have an urban background unlike in the past hence they tend to be oriented towards the pet paradigm since they most likely grew up owning pet animals.¹⁸

Table 1 The specific types of Employment that the students expressed interest to pursue

Area of employment in private sector	% Student preferences
Public Health and Epidemiology	15
Small Animal Medicine and Surgery	27.5
Research (Private)	35
Zoo animal and Wildlife	12.5
Dairy and Beef Production	2.5
Pharmaceutical Industry	5
Other Disciplines	2.5

Student motivation for sectorial employment preferences

The motivation for students who prefer private sector and its associated specific industries were mainly: Passion (45%) followed by prospects of getting higher Incomes (22.5%). Another 17.5%(7/40) of the students reported that the private sector offered them the best career development route compared to the public sector, while 15% cited self-employment as their main motivation for preferring the private sector (Figure 2).

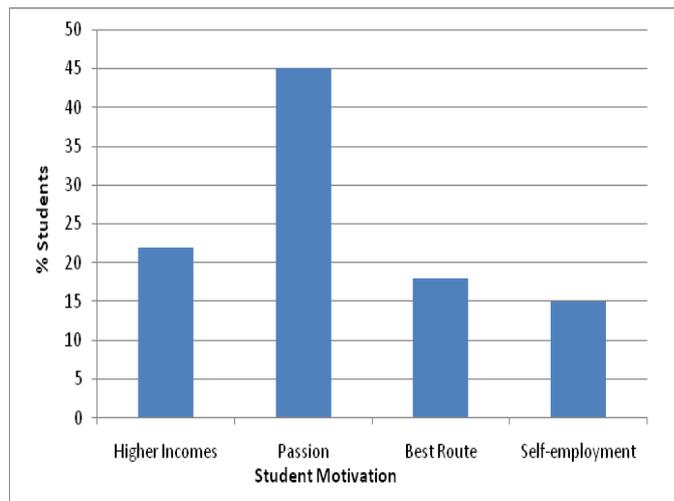


Figure 2 The motivational factors that influence the students' choice of the specific areas of interest.

Trend for the number of students graduating from the veterinary faculty in the last 20years, 1994-2014

The graduation class sizes sharply decreased from 111 in the year 1994 to 35 in the year 2006 (Figure 3) and have since been increasing from the year 2007 onward. The initial sharp decline in numbers can partly be explained as the effects of the government of Kenya’s privatization of veterinary services through the adoption of the Structural Adjustment economic Programs in the 1980s.¹¹ Privatization coupled with stagnation of the national economy rendered the profession unattractive to many students joining university.⁷

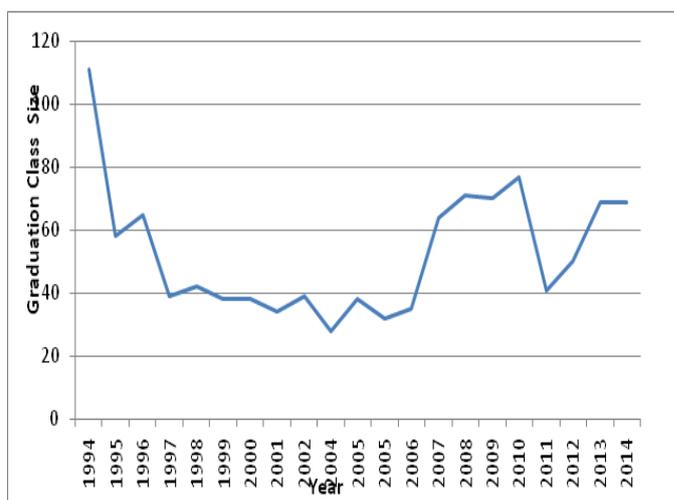


Figure 3 The trend of student graduation from the Faculty of veterinary medicine for the last 20years.

The increase in graduation numbers from the year 2007 can be explained by the spectacular economic recovery registered in this period by the once regarded as the world’s “most optimistic” Kibaki regime in 2002, and the constitutional reforms started in 2005 that aimed to devolve power to the regions. During this period the Kibaki regime registered an improved annual rate of economic growth from-1.6% in 2002 to 2.6% by 2004, 3.4% in 2005, and 5.5% in 2007.¹⁹ In 2003 the Kenyan Government developed and launched the Economic

Recovery Strategy (ERS) for Wealth and Employment Creation, as the blue print for setting the country back on the growth path after years of economic stagnation.²⁰ In June 2008, the Government launched the Kenya Vision 2030 as the new long-term development blueprint for the country. The vision of this strategy is to transform the country into “the globally competitive and prosperous country with a high quality of life by 2030”. Other priorities include devolution, enhancing to key-social economic sectors such as agriculture and rural development, health and education.²¹

This and other factors such as the lowering of the cut-off cluster points for joining vet school, has stimulated a recovery in the graduation numbers of veterinarians from the university of Nairobi. The recovery in graduation numbers also provides a glimpse into the future of the profession, since with each new class there are more veterinarians hence the university and the government has to plan well to meet a projected ever-increasing financial and technological demands of educating the next generation of veterinarians and the resultant glut in the job market. The marginal gain in numbers seen in recent years (2012 to 2014) offers a little hope of stabilization but an overall increase in graduation numbers is still inevitable. The findings indicate a profession whose viability has improved and projects an increase in the value of veterinary medicine. They also call into question the need to cap both vet school joining and graduation class sizes to prevent an oversupply of veterinarians to an economy that may not evolve fast enough to meet the glut.

Threats to the veterinary profession in Kenya according to students

About 47.5%(19/40) cited deregulation of the activities of veterinary paraprofessionals otherwise known as “Quacks” as the greatest threat facing the profession at present and in the foreseeable future (Table 2). The rest of the students mentioned other challenges and emerging threats such as: Climate change; increased cost of livestock production; Negativity and ignorance of the public and farmers hence reluctance to consult veterinarians; Poor payment and remuneration of veterinary professionals compared to other health care professionals; huge student loan debt at graduation with paltry starting salaries; Dwindling veterinary medicine job market. These are genuine concerns that reflect considerable uncertainties about the economic future of the veterinary profession in Kenya. These identified threats will need a thorough rethink of government policy and emphasize the need for professional change both at the level of the educational experience of the students and at the livestock industry level.²² Something will have to be done if veterinary graduates of tomorrow are to enjoy greater economic success in the more competitive environment of the future.

Sectors which are providing employment opportunities for veterinarians in Kenya

Approximately 80%(16/20) of the registered graduate veterinarians reported the private sector as the largest employer of veterinarians in Kenya (Figure 4). However, other graduates who were interested in the private sector while students, were currently working in the public sector as lecturers while others were in private sector working as clinicians and veterinary surgeons. Following privatization of veterinary services from the early 1980s, the private sector began to develop due to the change in policy.⁷ The privatization scheme launched by the Kenya Veterinary Association (KVA) in 1994 provided impetus for further development of private practices. Although the

first phase of the scheme (1994-1996) was a success, the second phase of the project (from 1997) was characterized by low number of loan applications and defaults in loan repayments.² While private veterinary practice took root in the high rainfall, intensive farming areas, this was not the case in the arid and semi-arid lands (ASAL), where community-based animal health workers (CAHWs) continued to play a prominent role in providing animal health services.²

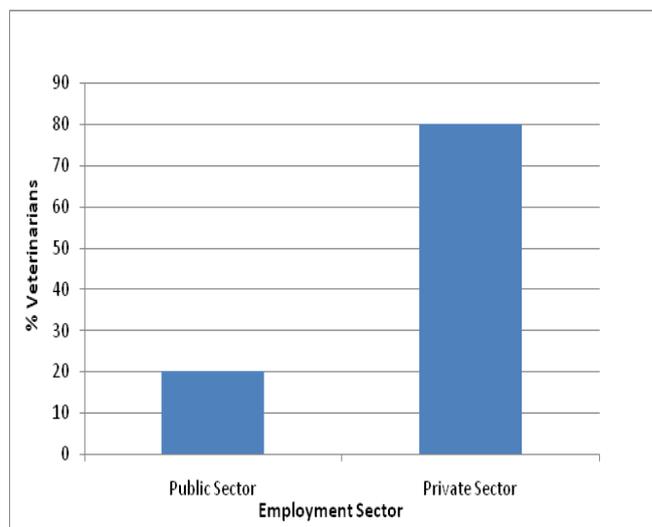


Figure 4 The sector that provides most employment opportunity to veterinarians as perceived by the Practicing Veterinarians.

Table 2 Threats to the future of the veterinary profession in Kenya according to students of veterinary medicine

Threat cited	Number of students
Quacks	19(47.5%)
Climate Change	3(7.5%)
Public Negative Perception	2(5%)
Poor	10(25%)
Pay and Remuneration of Vets	
Student Loan Debt at Graduation	1(2.5%)
Dwindling Job Market	5(12.5%)
Total	40

The main sources of employment for veterinarians in the private sector

Most of the veterinarians in the private sector are mainly engaged in mixed animal practices and small animal medicine and surgery while the rest are in the pharmaceutical and dairy/beef industries (Table 3). This is so largely due to the tremendous growth of the private sector in delivering more equitable veterinary services following privatization.²³ This observation however conflicts with the official position of the government and the Kenya Veterinary Board which still considers the government as the ‘single largest’ employer of veterinarians in Kenya.³ For those who prefer private practice, the most important sources of employment were small animal practice and mixed practice, similar observations have been reported by Umali et al.²⁴

Current and emerging areas of opportunity

According to the veterinarians 50%(10/20), wildlife practice is the emerging area of opportunity while small animal medicine and surgery is the current area of employment (Figure 5). The other emerging area noted was poultry production industry as shown in Figure 5, these observations are in line with those of Brown& Silverman, 1999 in the United States,²⁵ who predicted these as the next emerging areas of opportunity for the veterinary profession.

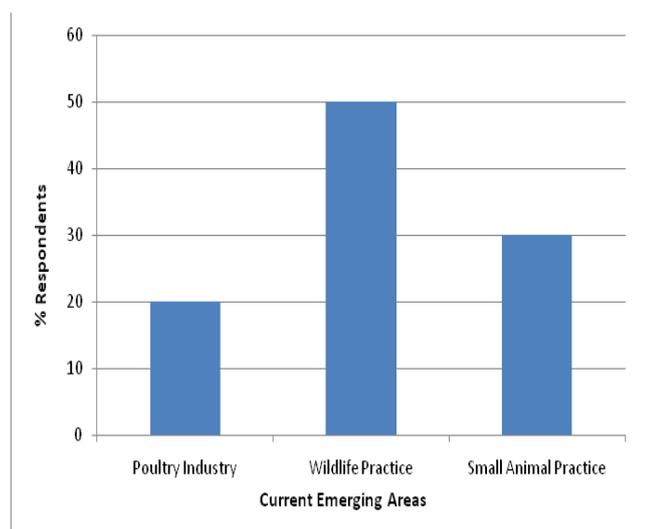


Figure 5 The current and emerging areas in animal health industry according to the respondents.

Table 3 The main sources of employment for veterinarians in the private sector in Kenya

Area of employment	% veterinarians
Dairy and Beef Industry	20
Small Animal Practice	30
Pharmaceutical Industry	10
Mixed Practice	30
Others (Education & Research)	10

Table 4 The underserved area in animal health industry according to private veterinarians

Underserved area	% of veterinarian respondents
Donkey and Equine Practice	20
ASALs Practice	10
Small Animal Practice	60
Wildlife Practice	10

Most underserved areas with good future prospects

Most (60%) the respondents reported that small animal practice was still underserved by veterinarians and still has good future prospects with increased economic development and urbanization. Other areas noted to be underserved include ASALs practice, wildlife practice and donkey and equine practice (Table 4), this is consistent

with the observations of Giuseppe & Lynen.⁷ Private veterinary practice has been successful in areas of high agricultural potential with large populations of dairy or beef animals and where farmers are relatively wealthier and more educated.²⁶ Expansion to more marginal areas such as wildlife practice, small animal practice, donkey and equine practice and into the Arid and Semi-Arid Lands of Kenya has however been limited and will require incentives or subsidies.² These underserved areas therefore have good prospects as areas into which graduate veterinarians can diversify their skills and expertise in the future. This therefore necessitates a continued role for the public sector in providing veterinary services especially in the ASALs.

Conclusion

Most students come to veterinary school to finally join the private sector and mainly in the pet paradigm sector of the profession. Deeper partnerships between the veterinary faculty and private sector industrial employers will therefore be important. The faculty should be more active in seeking private industry biomedical research partnerships, student mentoring and opportunities in the curriculum to expose students to private corporate practice.

Private practice especially small-animal veterinary practice is dominating the veterinary practice market and in the near future, the resources of veterinary schools. The Large animal model of training veterinarians may therefore not tenable. The low interest of BVM students in going into public practice, predicts a shortage of public-practice veterinarians in the near future which might place at risk the health of Kenyans, the well-being of the nation’s food-animal industry and the health of Kenyan wildlife resources. The government and county governments should re-examine their policies on remuneration, recruitment and retention of veterinarians, to meet the needs for positions for veterinarians in public practice.

The number of students interested in research is relatively high. Crucial investments in the infrastructure of basic and applied research should be made. Research should increase in the faculty on such topics as molecular genetics, molecular oncology, immunology, virology, toxicology, pharmacology, and epidemiology. This may be achieved by attracting students into research careers and by working to find support for post-graduate research training.

The current picture of the profession is one of economic challenges and threats from cheaper and low quality veterinary services offered by unqualified veterinary paraprofessional “quacks”. Alternatives to conventional veterinary practice, including an expansion to other areas such wildlife practice, donkey and equine practice and poultry practice, will be important. Veterinary colleges are not producing sufficient graduates to fill the profession’s needs, especially in small-animal and specialty practice. The FVM should engage employers and public and private funders in their efforts to target and strengthen particular fields of veterinary expertise and research.

There is a need to develop and promote the veterinary profession as one that offers diverse career paths with many different niches for veterinarians, ranging from traditional companion-animal practice to public- and private-sector positions in biomedicine, animal research, wildlife, the environment and public health. Livestock industry players, veterinary academia and veterinary professionals must collaborate within and beyond the bounds of the veterinary profession; they must proclaim and demonstrate its relevance to the public and to decision-makers to ensure its sustainability in to the future.

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Conflict of interest

Author declares that there is no conflict of interest.

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