

## CAREER FULFILMENT IN ANIMAL SCIENCE

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The emergence of the livestock industry from a "way of life" to a sound business enterprise during the past forty years has been the result of advances in biological sciences – nutrition, genetics, physiology and disease control, as well as upon accepted economic principles.

The recent advent of the energy crisis has heralded a new and challenging era for livestock production and it will place an even greater premium on leadership to meet this challenge. A new type of leadership in Animal Science is going to be required that is based on a sound understanding of basic biological principles and an understanding of modern business methods.

It behoves us as Animal Scientists to ensure that we attract the necessary calibre of manpower into the profession to provide the type of future leadership the livestock industry requires. It is the purpose of this discussion, therefore, to objectively consider the status of career opportunities in Animal Science and to consider possible steps to improve the situation if found wanting.

### Factors determining career fulfilment

There are basically three major factors determining the appeal of a particular career:

- (a) Vocation/Job opportunities
- (b) Remuneration or earning power
- (c) Job satisfaction

### (a) Vocational opportunities in Animal Science

There are basically two employer sectors, namely, the Public Sector and the Private Sector. A further category is self-employed persons, defined as those persons who work for themselves in their own business or practices. The major categories of employment are presented schematically in Fig. 1.

#### (i) Public sector

These are employees of the government, (Department of Agricultural Technical Services), semi-government, government controlled or government subsidised institutions such as control boards and universities. Opportunities exist for careers in research, teaching, extension and in management positions.

The Public Sector has traditionally been the largest employer of Animal Scientists and there is no evidence that this position has changed.

#### (ii) Private sector

This includes employees of public corporations, private firms, organisations and undertakings of which the Formula feed industry is the major employer. Opportunities exist for careers in research and product development, advisory work, registration of new products, quality control, sales promotion and in management positions. More recently Farming Co-operatives have become an

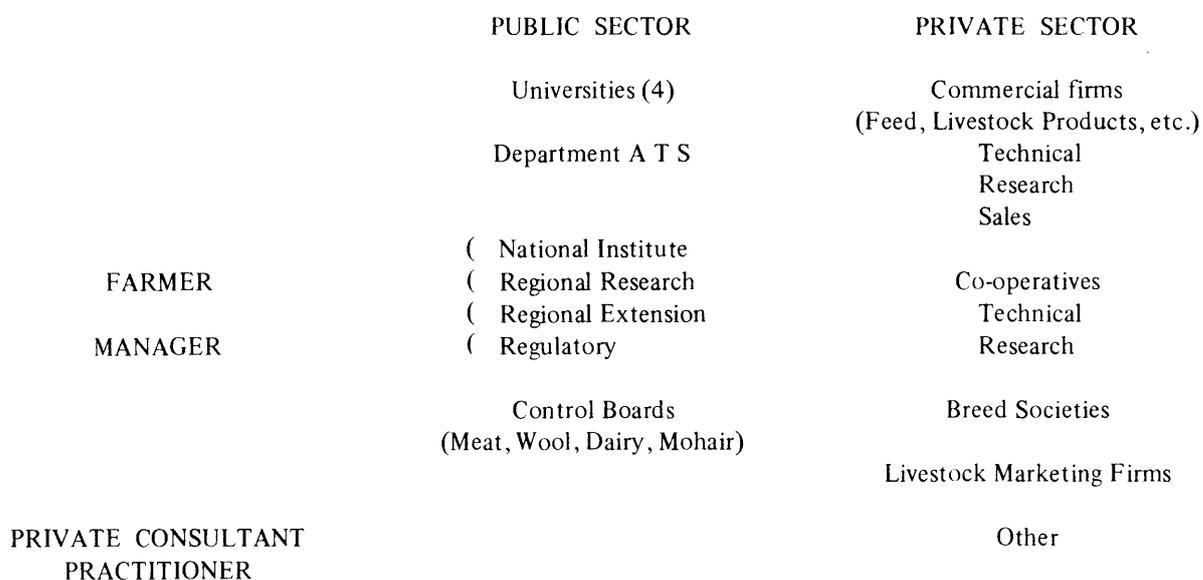


Fig. 1 Major sources of employment for Animal Scientists

increasingly important employer of Animal Scientists in both advisory, research and management capacities.

(iii) Self-employed persons

This group includes persons who work for themselves in their own businesses or practises including partners of professional undertakings and managing directors who own more than 50 per cent of a company's shares (Human Sciences Research Council 1977). There is a singular lack of Animal Scientists in this category which will be discussed during the course of this dissertation.

(b) *Nature of employment of Animal Scientists at present*

In order to objectively assess the career opportunities for Animal Scientists it is necessary to investigate the nature of employment of Animal Scientists employed at present. Van Niekerk (1976) reported on an analyses of the employment of active members of the Society of Animal Production compiled by Basson and colleagues. This information is summarised in Table 1.

The dominant role played by the Public Sector as an employer of Animal Scientist is evident from the fact that 42 per cent of members are employed in this sector while only 23 per cent are in the Private Sector.

The universities provide a further source of information on the occupation of Animal Scientists but, unfortunately, complete records were only available from one of the four Agricultural Faculties. A further

**Table 1**

*Nature of Employment of "Active" SASAP Members (Van Niekerk 1976)*

Occupation Group	n	%	%
<b>Department ATS</b>			
Research	56	15	
Extension	39	10	
Administration	15	4	42
University / College	39	10	
Control boards	8	2	
<b>Private Sector</b>			
Industry	85	23	23
Farmers	130	35	35
<b>TOTAL</b>	<b>372</b>	<b>100</b>	<b>100</b>

(75% Sample. Excludes Pensioners, etc.)

Faculty undertook a "crash" survey on behalf of the author over the post 5 graduate classes which provided useful information. No records were available from the remaining two faculties.

The occupation of all Animal Science Graduates from the University of Natal is summarised in Table 2. The categorisation of Graduates into three 10-year periods provided some measure of any trend in employment over time.

**Table 2**

*Occupation of Animal Science Graduates from University of Natal*

Occupation	Percentages (%)				%
	1948-57	1958-67	1968-79	Total	
<b>Public Sector</b>					
Department A T S	13 )	5,8)	24,3)	27	
Rhodesia	15,2) 28	13,6) 25	21,4) 51	36	36,1
University / College	—	5,8)	5,7)	10	
Farmer	28,0	34,0	17,0	60	27,4
Private Sector	13,0	14,6	8,6	27	12,3
Changed Profession	4,3	6,8	7,1	14	6,4
Ex South Africa	4,3	3,9	—	6	2,7
Deceased / Unknown	13,0	15,5	12,9	31	14,1
				219	100

**Table 3**

*Occupation of recent Animal Science Graduates from two South African Universities (since 1974)*

	University of Pretoria			University of Natal		
	n	%	%	n	%	%
Farmer	19	15,8	15,8	6	13,6	13,6
Private Sector	15	12,5	12,5	4	9,1	9,1
Department A T S	41	34,2		14	31,8	
Rhodesia	—	—	40,0	6	13,6	45,4
University	7	5,8		—	—	
Changed (Veterinary)	15	12,5	12,5	8	18,1	18,1
Army ? etc.	21	17,5	17,5	6	13,6	13,6
<b>TOTAL</b>	<b>118</b>	<b>100</b>	<b>100</b>	<b>44</b>	<b>100</b>	<b>100</b>

It is evident from Table 2 that the Public Sector with 36 per cent of the graduates was the major employer, while 27 per cent were farmers. Only 12 per cent of graduates were in the Private Sector while 6 per cent had moved into other professions or spheres of work.

An analyses of the placement of recent graduates (since 1974) at the major Afrikaans and English language universities provides a useful measure of recent employment opportunities and this is summarised in Table 3.

Of particular importance in Table 3 is the relatively high proportion of Animal Scientists that have been employed by the Public Sector (40 per cent and 45 per cent for Pretoria and Natal respectively) and the disturbingly high proportion of recent graduates (12,5 per cent and 18 per cent respectively) that have changed their

careers and left Animal Science. The majority of these graduates have moved to Veterinary Science. It is also of significance to note that job opportunities for recent graduates in the Private Sector appear limited as reflected in the 12,5 per cent and 9,1 per cent of recent graduates from Pretoria and Natal employed in the Private Sector.

A characteristic of the Animal Science, and indeed Agricultural Profession, is that the job opportunities in the Private Sector are far more experienced and established persons. This must be considered a disadvantage as it severely limits the scope for the young graduate. It has been the author's experience from interviewing many recent graduates that this factor is resulting in some degree of frustration. On the positive side however, all universities report no problem in graduates obtaining employment.

**Table 4**

*Distribution of employees under Employment Categories for the various professions*

Occupation	n	Categories of Employment of Various Professions (%)		
		Public Sector	Private Sector	Self-Employed
Dentist	327	8,2	4,9	86,9
Attorney	1 179	2,1	12,1	85,8
Chartered Accountant	1 359	0,7	29,4	69,9
Architect	610	11,8	22,3	65,9
Pharmacist	744	13,3	23,1	63,6
Medical General Practitioner	1 371	41,0	6,0	53,0
Veterinarian	183	35,0	17,5	47,5
Natural Science	80	72,5	26,3	1,2
Agriculture	489	70,1	28,4	1,5
Animal Science	43	86,0	14,0	—

Source: Human Sciences Research Council (1977)

The singular lack of opportunities for self-employment in Animal Science is most evident from Tables 1 to 3. It is the author's opinion that this is a serious factor retarding the optimum development of Animal Science as a profession. This factor coupled with an imbalance between employment of Animal Scientists in the Public and Private Sectors is most evident from Table 4 in which the category of employment for various professions is compared.

In most professions the self-employed category is the major category with 53 to 87 per cent of the sample, while the Public Sector category ranges from less than 1 per cent to 40 per cent. A recent survey conducted by the Human Sciences Research Council revealed no self-

employed Animal Scientists, with over 86 per cent of persons being employed in the Public Sector.

(b) *Remuneration or Earning Power*

In the modern business-orientated environment we live in, coupled with ever-increasing living costs, the earning power of a particular career is a major factor in career fulfilment.

The only information on the wage structure of Animal Scientists compare to other professions is contained in a report by the Human Sciences Research Council (1977) on the wage structure of highly qualified white men. Pertinent information is summarised in Table 5.

**Table 5**

*Wage Structure of Highly Qualified White Men as at 1 March 1977*

Occupation	Public Sector			Private Sector			Self-employed		
	n	Age	ME (R)	n	Age	ME (R)	n	Age	ME (R)
Architect	72	50	12 260	136	34	9 880	402	47	18 670
Civil Engineer	715	37	12 220	679	34	11 650	323	44	22 090
Chemist	165	38	11 080	199	39	12 120	9	48	11 500
Natural Science	58	37	10 330	21	38	10 500	—	—	—
Animal Science	37	34	7 950	6	40	11 000	—	—	—
Veterinarian	64	38	10 860	32	30	11 000	87	34	15 830
Dentist	27	44	13 440	16	40	18 330	284	44	20 050
Medical General Practitioner	564	32	11 070	82	51	18 350	725	48	20 740
Attorney	25	39	12 500	143	30	18 350	1 011	43	20 530
Chartered Accountant	10	43	12 000	399	32	12 710	950	42	24 190

Source: *Institute of Manpower Research (Human Sciences Research Council)*

**Table 6**

*Gross Salary of Employees according to Occupation and Age*

Occupation	n	Salary (R) Age 35 to 39 years		
		Q 1	ME	Q3
Architect	22	10 130	11 400	12 830
Chemist	63	10 480	11 710	13 080
Agriculture Ext	34	8 090	8 630	9 630
Veterinarian	15	10 580	11 830	12 810
Medical General Practitioner	44	11 290	13 000	15 500
Attorney	14	8 750	11 000	12 830
Chartered Accountant	46	12 310	15 750	20 250
Biological Scientist	85	8 640	9 670	10 920
G.M.	43	15 380	19 380	22 136

Source: *Human Sciences Research Council March 1977*

The following are salient points from Table 5.

- (i) Animal Scientists do not enjoy a satisfactory wage structure in the Public Sector compared to other professions of equal study years.
- (ii) The high salaries of other professions with self-employed persons are very apparent.
- (iii) While salaries in the Private Sector are not competitive with the medical professions they are reasonably competitive when compared to other professions.

The unfavourable remuneration for Agricultural Scientists and Biological Scientists is reflected in Table 6.

It is evident that remuneration in the Biological Sciences compared to other professions is not encouraging and is indeed cause for concern.

#### (c) *Job Satisfaction*

The tremendous challenge of biological systems and the favourable working conditions characteristic of a career in Biological and Natural Sciences have long been considered important ingredients for job satisfaction in Animal Science. Provided that the traditional frustrations of the Public Sector are minimised there is little doubt that Animal Science offers a tremendously challenging, rewarding and satisfying career.

Unquestionably Animal Science has all the ingredients for job satisfaction. A further factor of importance is the very favourable funding and facilities for Agricultural Research in South Africa.

#### **Likely future trends affecting career fulfilment in Animal Science**

The following are considered to be important developments likely to affect career opportunities in Animal Science in the future.

- (i) The trend towards fewer, larger scale company-owned farming operations is likely to present increasing scope in Farm Management for Animal Scientists.
- (ii) As the Public Sector is forced to rationalise in respect of its functions the Private Sector is likely to assume an increasing role in advisory work and some facets of research.
- (iii) Private consultants are likely to emerge as an increasingly important component of the livestock industry. This development is likely to be slow to gain momentum under the existing infra-structure.

- (iv) A new breed of Animal Scientists is likely to emerge as leaders of the livestock industry in the next decade. This is the highly economically and business orientated, but biologically sound Animal Scientist. It is this calibre of Animal Scientist that is most likely to establish a private practice on a sound basis and an increasing scale in the industry and pave the way for self-employment as an important employment category in Animal Science. This is considered vital before Animal Science really comes of age as a profession.
- (v) The formation of the South African Society of Animal Production in 1961 and the South African Board of Animal Scientists in 1973 have been milestones in the development of Animal Science as a profession. The latter body is likely to play an increasingly vital role in achieving ultimate professional status for the Animal Scientist.

#### **Summary and Conclusion**

1. An analyses of the present employment of Animal Scientists revealed the Public Sector to be the major employer with approximately 40 per cent of employees.
2. There is no evidence of any marked increase in the proportion of Animal Scientists in the Private Sector, although one feels there is a move in this direction. It would appear that from 15 to 20 per cent of Animal Scientists are employed in the Private Sector.
3. The high proportion of recent graduates entering the Public Sector and the low number in the Private Sector confirms the experience of the author that the limited job opportunities in the Private Sector for the recent graduate is a serious disadvantage.
4. The lack of opportunity for self-employment in Animal Science is a major limiting factor to the optimum development of the Profession and its ultimate attainment of professional status. The imbalance is particularly evident when compared to other professions.
5. While remuneration in the Private Sector compares favourably with other professions, the Animal Scientist in the Public Sector is at a disadvantage, while the limited scope for self-employment – a lucrative source of income in other professions – is a decided limitation to career fulfilment and remuneration.
6. The job satisfaction in Animal Science is extremely favourable in view of the challenging nature of the work and the pleasant working conditions.

7. Likely future developments in the industry including larger scale farming operations and rationalisation in Public Sector are likely to see increasing scope in Management and private consulting.
8. There appears to be increasing scope for a new breed of Animal Scientists with the same biological attributes, but considerably better versed in economic principles and business management.

It is this new breed of Animal Scientist that is most likely to pioneer the establishment of private consultancies and practices on a more general basis in the industry.

### **Recommendations**

A number of important shortcomings have emerged during the course of this investigation and should be referred to the South African Board of Professional Scientists. These include the following:

- (i) Maintenance of a regular register (updated annually) of the occupation and salary of Animal

Scientists in the Republic and liaison with Human Sciences Research Council to monitor the situation.

- (ii) Approaches to the authorities to improve the salary structure for Animal Scientists in the Public Sector compared to other professions with similar years of study.
- (iii) A concerted effort to overcome the deplorable lack of self-employment opportunities in the Profession.

It is considered that the time is now right to offer advance courses to equip Animal Scientists for private practice and to enable Animal Scientists to professionally handle certain operations presently the domain of the veterinarian.

In the final analyses, ultimate career fulfilment in Animal Science is dependent on the emergence of self-employment as an important component of employment for Animal Scientists.

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