ANNUAL REPORT ON AGRICULTURAL PROGRAMMES, GRADUATE OUTPUTS AND ENROLMENTS AT PUBLIC HIGHER EDUCATION INSTITUTIONS AND COLLEGES OF AGRICULTURE FOR 2005

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ANNUAL REPORT ON AGRICULTURAL PROGRAMMES, GRADUATE OUTPUTS AND ENROLMENTS AT PUBLIC HIGHER EDUCATION INSTITUTIONS AND COLLEGES OF AGRICULTURE FOR 2005

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LIST OF ACRONYMS

1. Agricultural Broad Based Black Economic Empowerment ..... (AgriBEE)
2. Agricultural Education and Training ..... (AET)
3. Association of Principals of Agricultural Colleges ..... (APAC)
4. Bachelor of Technology ..... (BTech)
5. Bachelor of Veterinary Science ..... (BVSC)
6. Cape Peninsula University of Technology ..... (CPUT)
7. Categorization of Education Subject Matter ..... (CESM)
8. Department of Agriculture ..... (DoA)
9. Doctor of Technology ..... (DTech)
10. Education, Training and Extension Services ..... (ETES)
11. Free State Central University of Technology ..... (CUT, FS)
12. Further Education and Training ..... (FET)
13. Higher Education Training ..... (HET)
14. Higher Education Quality Committee ..... (HEQC)
15. Land Reform &Agricultural Development ..... (LRAD)
16. Magister of Technology ..... (MTech)
17. Mangosuthu Technikon ..... (Mangosuthu Tech)
18. National Agricultural Education and Training Forum ..... (NAETF)
19. Nelson Mandela Metropolitan University ..... (NMMU)
20. National Qualification Framework ..... (NQF)
21. Recognition of Prior Learning ..... (RPL)
22. Sectoral Education and Training Authority ..... (SETA)
23. Standard Generating Bodies ..... (SGB)
24. Tshwane University of Technology ..... (TUT)
25. University of South Africa ..... (UNISA)

FOREWORD

Foreword by the Director General

It is my pleasure to present the 2005 Annual Report on Agricultural Programmes, Graduate Outputs and Enrolments in Public Higher Education Institutions and Colleges of Agriculture. This is the second of a series of annual reports on agricultural enrolments and graduate outputs in public higher education institutions and agricultural colleges as well as the type of programmes offered by these institutions on an annual basis.

The second series 2005 Annual Report on Agricultural Graduate Outputs and Enrolments emanates from a data collection process by the Department of Agriculture on the supply of intermediate and high level skills for the agricultural sector. Preceded by the 2004 report, the purpose of the study was to present the sector with a picture on the supply of intermediate and high level skills for the agriculture sector by public higher education institutions and colleges of agriculture as the biggest suppliers of agricultural graduates in the country. Furthermore the study was aimed at investigating and identifying agricultural fields of study which have undersupply and those with oversupply of graduates as the matter of urgency and that will be dealt with in the implementation of our recently launched Agricultural Education and Training (AET) strategy. The focus of the study was, therefore, on the types of agricultural education and training programmes offered by various higher education institutions, agricultural enrolments and graduate outputs in the various fields of study during the 2005 academic year.

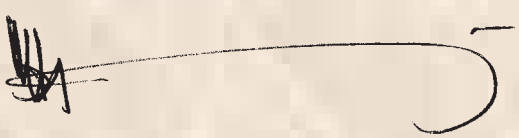
The study presents trends in terms of skills supply for the agriculture sector by the public institutions of higher learning and agricultural colleges on yearly basis in order to inform planning for AET provisioning by public higher education institutions and appropriate interventions for skills development for the sector.

As a second in a series of reports the 2005 Annual Report on Agricultural Programmes, Graduate Outputs and Enrolments in Public Higher Education Institutions and Colleges of Agriculture has made further observations in its effort to give bigger, clear and honest picture of the agricultural education and training as it stands. The research study has a broadened scope to include more institutions of higher learning in agricultural education and training. For better understanding of trends in agricultural education and training an analysis has been widened to include other agricultural fields.

It is generally known that there is a shortage of particular critical skills in certain fields of agriculture. Propelled by these evident skills shortages in the sector, the Department of Agriculture has made an effort with regards to human capital development for the entire agricultural sector by the development and implementation of the Agricultural Education and Training (AET) stategy of 2005. As indicated in the Agricultural Education and Training(AET), there are poor linkages between the agricultural education providers and skills demand by agricutural industry which results in oversupply of certain skills and scarcity of other skills in the South African labour market.

I believe that this report as a supportive point of departure will make a genuine contribution in the implementation of the AET Strategy and in addressing the skills gap in the sector as well as establishing a cadre of agricultural graduates that will benefit not only the agricultural sector but also the South African economy in general. It is therefore my conviction that this report shall provide a very strong and informed basis for decicion making in agricultural education and training.

I sincerely trust that the findings of this report will help to inform the efforts of tranforming agricultural education towards a well coordinated, effective, responsive and well structured mode.



Masiphula Mbongwa
DIRECTOR-GENERAL

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

1. Introduction

This report is based on a study conducted on the agricultural enrolments, graduate outputs and Agricultural Education and Training (AET) programmes offered by various agricultural colleges and Higher Education institutions for the 2005 academic year. The Department of Agriculture (DoA) collects data on the types of programmes offered in the Colleges of Agriculture and Higher Education (HE) institutions, agricultural enrolment figures and graduate output figures in all the agricultural programmes offered by these institutions on an annual basis. The 2005 report is the second of a series of annual reports on AET enrolments; graduate outputs and programmes offered by Colleges of Agriculture as well as HE institutions to be produced by the DoA.

2. Objectives of the project

The primary objective of the study is to observe the trends in terms of skills supply for the agriculture sector by the HE institutions and the agricultural colleges. Furthermore the study aims to observe trends with regard to AET enrolments, graduate outputs and the types of AET programmes offered by various institutions, in order to inform policy decisions and planning regarding AET provisioning in the public Colleges of Agriculture and Higher Education institutions for the purposes of skills supply priorities for the sector. The findings would further assist in the development of strategies for addressing the skills demand in the agriculture sector.

3. Methodology for the study

The research study was more quantitative in nature and its aim was to yield quantitative descriptive data. The Education, Training and Extension Services (ETES) Directorate conducted a questionnaire-based survey with all the Colleges of Agriculture, Universities and Universities of Technology offering AET programmes. The study was conducted from April 2006 to March 2007.

Data collection for the study focused on number of AET enrolments and graduates from Junior degree to postgraduate levels, focusing on all the agricultural disciplines. It also focused on the types of programmes and short courses offered in these institutions. Questionnaires requesting information on the number of enrolments and graduates in all the agricultural programmes offered by each institution, were distributed electronically to 15 public HE institutions offering agricultural programmes and the 12 Colleges of Agriculture. The questionnaires were completed and returned to the Directorate in the same way.

The study only focused on those public institutions that were offering Higher Education and Training programmes.

For ease of interpretation, the qualifications were categorized using the Categorization of Education Subject Matter (CESM) of the Department of Education. However, in some cases the CESM was further broken down into sub-categories to obtain a better understanding of the enrolments and supply of AET graduates. The report indicates how the qualifications were classified per CESM.

4. Limitations

The other limitation is that the study is mostly quantitative in nature and therefore it does not provide an in-depth analysis of the factors influencing the trends in agricultural enrolments and graduate outputs in various programmes.

The study could not report on each qualification and used the CESM which resulted into the different scarce skills within the CESM not being clearly indicated e.g. Entomology, which is a scarce skill is included under Plant Health. This was due to the fact that institutions do not provide the information per field of specialisation within the CESM.

Futhermore the Faculty of Veterinary Science at the University of Pretoria could not provide the data on graduate outputs and enrolments at Postgraduate level. This problem also applies in the case of agricultural engineering. The study therefore does not give indication of the number of graduates and enrolments in Veterinary and Agricultural Engineering at Postgraduate level.

5. Findings

5.1. Agricultural Education and Training at Colleges of Agriculture

There are 12 Public Colleges of Agriculture offering qualifications in the Higher Education and Training (HET) band to the B degree level, and the programmes are offered at colleges on annual basis.

5.1.1 AET Programmes offered by the Colleges of Agriculture in 2005

All the Colleges of Agriculture have their qualifications registered in the National Qualifications Framework (NQF). In the 2005 academic year, all the colleges offered programmes ranging from NQF level 1 to NQF level 6. The common qualifications offered in all the colleges are a Higher Education Certificate in Agriculture at NQF level 5, and a Diploma in Agriculture at NQF level 6. A Diploma in Agriculture is pursued after completion of the Higher Certificate in Agriculture. All the Higher Certificates are offered on a two-year programme of which the third year will be the Diploma in Agriculture.

The Higher Education Certificate and the Diploma programmes are accredited by the Higher Education Quality Committee of the Council on Higher Education, while the programmes from NQF level 1 to 4 (including short courses) are accredited by Umalusi and AgriSETA. However, some of the short courses from NQF level 1 and 4 are not yet accredited.

Nine (9) Colleges of Agriculture offered NQF level 5 qualifications, i.e. Higher Education programmes and NQF level 6 programmes in 2005. Tsolo, Madzivhandila and Tompi Seleka have phased out the NQF level 5 programmes between 2001 & 2004 and are presently concentrating on learnerships.

5.1.2. Agricultural Education and Training Enrolment figures at Colleges of Agriculture in 2005

A breakdown of enrolments by gender and race at Colleges of Agriculture is presented in the table below.

Breakdown of colleges enrolments by gender and race

Name of the College	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
1. Cedara	49	30	**79**	2	0	**2**	76	4	**80**	2	2	**4**	**165**	10
2. Elsenburg	14	7	**21**	73	26	**99**	221	69	**290**	0	0	**0**	**410**	25
3. Fort Cox	35	13	**48**	0	0	**0**	0	0	**0**	0	0	**0**	**48**	3
4. Glen	109	63	**172**	0	0	**0**	0	0	**0**	0	0	**0**	**172**	11
5. Grootfontein	10	6	**16**	11	1	**12**	97	16	**113**	0	0	**0**	**141**	9
6. Lowveld	113	53	**166**	0	0	**0**	47	3	**50**	1	0	**1**	**217**	14
7. Madzivhandila	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
8. Owen Sitole	22	37	**59**	0	0	**0**	1	0	**1**	0	0	**0**	**60**	4
9. Potchefstroom	58	18	**76**	0	0	**0**	199	16	**215**	0	0	**0**	**291**	9
10. Taung	93	107	**200**	0	0	**0**	0	0	**0**	0	0	**0**	**200**	13
11. Tompi Seleka	16	19	**35**	0	0	**0**	0	0	**0**	0	0	**0**	**35**	2
12. Tsolo	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
TOTAL	519	353	**872**	86	27	**113**	641	108	**749**	3	2	**5**	**1739**	100

A total number of 1739 students were enrolled in 2005 at all the Agricultural Colleges. Tsolo and Madzivhandila enrolled no new students for 2005 since they phased out their Diploma and Higher Certificate programmes and focused their curricula on short courses, learnerships at GET and FET levels. However Tompi Seleka continued to offer Diploma and Higher

Certificate programmes to the students registered in the yester years but who have failed to complete these programmes in record time. Colleges of Agriculture combined, have total enrolment figures of less than 2000, which is a required norm to determine an institution operating at higher education level.

Elsenburg had a high number of enrolments with 410 students, followed by Potchefstroom with 291 students and Lowveld College with 217 students and the lowest enrolments were registered at Owen Sitole and Fort Cox, with 60 and 48 students respectively and Tompi Seleka with 35 students of the total enrolment figures for the 2005 academic year.

African students dominated the enrolments with 50% (872) followed by White students with 43% (749). Other population groups enrolled less than 7% (118) of the total enrolments at colleges in 2005.

Male enrolments constitute 72% (1249) of the total number of enrolled students in 2005 and female enrolments constitute 28% (490). This high gender imbalances calls for a further review of student recruitment strategies by the Colleges of Agriculture. White males dominate with 51% (641); followed by African males with 42% (519). There was a significant increase in the number of Coloured enrolments in Colleges of Agriculture from 43 in 2004 to 113 in 2005. Asian students are almost non-existent.

5.1.3 Number of people registering and completing short courses during 2005

A breakdown of people registering and completing short courses by gender and race at Colleges of Agriculture is presented in the table below.

Breakdown of people registered and completing in short courses by gender and race

Name of the college	African				Coloured			White			Asian			Total	%
	M	F	U	T	M	F	T	M	F	T	M	F	T		
1. Cedara	*	*	472	**472**	*	*	*****	*	*	**79**	*	*	**10**	**561**	9
2. Elsenburg	215	157	0	**372**	782	322	**1104**	15	64	**79**	0	0	**0**	**1555**	26
3. Fort Cox	11	6	0	**17**	0	0	**0**	0	0	**0**	0	0	**0**	**17**	0
4. Glen	218	126	222	**566**	0	0	**0**	0	0	**0**	0	0	**0**	**566**	9
5. Grootfontein	451	19	0	**470**	66	18	**84**	26	30	**56**	0	0	**0**	**610**	10
6. Lowveld	0	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
7. Madzivhandila	177	282	0	**459**	0	0	**0**	0	0	**0**	0	0	**0**	**459**	7
8. Owen Sitole	331	721	0	**1052**	0	0	**0**	0	0	**0**	0	0	**0**	**1052**	17
9. Potchefstroom	90	38	0	**128**	1	0	**1**	2	3	**5**	0	0	**0**	**134**	2
10. Taung	0	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
11. Tompi Seleka	344	573	0	**917**	0	0	**0**	0	0	**0**	0	0	**0**	**917**	15
12. Tsolo	147	157	0	**304**	0	0	**0**	0	0	**0**	0	0	**0**	**304**	5
TOTAL	1984	2079	694	**4757**	849	52	**1189**	41	97	**219**	0	0	**10**	**6175**	100

* Information not available
U Gender unknown

Elsenburg, Owen Sitole, Tompi Seleka and Grootfontein enrolled more students in short courses than any college, with 26% (1555), 17% (1052), 15% (917) and 10% (610) respectively. Africans students enrolled in short courses constitute 77% (4757) followed by Coloured students with 19% (1189) and Whites constitute 4% (219). Asian students were almost non-existent. Male students dominate with 89% and females constitute 11% only of the participants in short courses.

5.1.4 Agricultural Education and Training graduate figures at Colleges of Agriculture in 2005

A breakdown of graduates by gender and race at Colleges of Agriculture is presented in the table below.

Breakdown of graduates by gender and race														
Name of the college	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
1. Cedara	13	13	**26**	0	0	**0**	21	5	**26**	2	0	**2**	**54**	9
2. Elsenburg	8	2	**10**	48	20	**68**	0	0	**0**	0	0	**0**	**78**	12
3. Fort Cox	31	16	**47**	0	0	**0**	0	0	**0**	0	0	**0**	**47**	7
4. Glen	38	14	**52**	0	0	**0**	0	0	**0**	0	0	**0**	**52**	8
5. Grootfontein	3	3	**6**	3	0	**3**	50	12	**62**	0	0	**0**	**71**	11
6. Lowveld	28	10	**38**	0	0	**0**	34	3	**37**	0	0	**0**	**75**	12
7. Madzivhandila	24	19	**43**	0	0	**0**	0	0	**0**	0	0	**0**	**43**	7
8. Owen Sitole	38	47	**85**	0	0	**0**	0	0	**0**	0	0	**0**	**85**	13
9. Potchefstroom	4	3	**7**	1	0	**1**	44	8	**52**	0	0	**0**	**60**	9
10. Taung	34	15	**49**	0	0	**0**	0	0	**0**	0	0	**0**	**49**	8
11.Tompi Seleka	12	12	**24**	0	0	**0**	0	0	**0**	0	0	**0**	**24**	4
12. Tsolo	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
TOTAL	233	154	**387**	52	20	**72**	149	28	**177**	2	0	**2**	**638**	100

Six hundred and thirty eight (638) graduated at Colleges of Agriculture. The total number of graduates completing the Higher Certificate (2 years) and the Diploma (3 years) from the Colleges of Agriculture, who were considered as labour market entrants, was only 637. Madzivhandila had graduates in 2005; these students registered in the yester years but failed to complete these programmes in record time. Owen Sitole had a high number of graduates with 13% (85), followed by Elsenburg College with 12% (75) and Potchefstroom with 9% (60).

African graduates were the largest group of graduates with 61% (387) followed by White graduates with 28% (177) and Coloured graduates with 11% (72). Asian graduates were almost non-existent. Male graduates and enrolments consistently outnumbered female graduates on a ratio of 1 to 3.

The data in the above table depicts that female graduates constitute 32% (202) of the total number of graduates and male graduates constitute 68% (436). African females dominate the female graduate population. There were only 2 Asian male graduates for the 2005 academic year. The table above indicates that the African females continue the trend of being the most represented among females. African males dominate with 53% (154), followed by White males with 34% (28) and Coloured males with 12% (20).

5.2. Agricultural Education and Training at Universities of Technology in 2005

There are 5 Universities of Technology offering AET programmes in South Africa namely; Cape Peninsula University of Technology (CPUT), Central University of Technology Free State (CUT), Mangosuthu Technikon (Mantec), Nelson Mandela Metropolitan University (NMMU), and Tshwane University of Technology (TUT). The agricultural programmes offered at these institutions range through the HET Band from NQF level 5 to NQF level 8. i.e. from Certificate to a Doctor of Technology (DTech).

All the Universities of Technology offer few agricultural programmes such as Agriculture Management from Diploma level to BTech level, with the exception of TUT. Most of the historically disadvantaged institutions do not offer programmes in the scarce skills category like Viticulture, BVSc Veterinary Science and Agricultural Engineering. TUT offers a wide range of agricultural programmes on a broad curriculum that is divided into 4 main streams namely Horticulture, Crop Sciences, Nature Conservation and Animal Sciences.

5.2.1 Agricultural Education and Training Enrolment figures at Universities of Technology in 2005

Table below presents a demographic of AET enrolments at Universities of Technology for the 2005 academic year.

Demographic Breakdown of AET enrolments at universities of technology during the 2005 academic year.													
University of technology	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
CPUT	1	3	**4**	8	2	**10**	111	5	**116**	0	0	**0**	**130**
CUT	85	56	**141**	0	0	**0**	69	3	**72**	0	0	**0**	**213**
Mantec	236	171	**407**	0	0	**0**	0	0	**0**	0	0	**0**	**407**
NMMU	87	47	**134**	2	1	**3**	11	0	**11**	0	0	**0**	**148**
TUT	603	900	**1503**	3	4	**7**	224	402	**626**	1	0	**1**	**2137**
TOTAL	1012	1177	**2189**	13	7	**20**	415	410	**825**	1	0	**1**	**3035**
%	33	38	71	0.4	0.2	1	14	14	28	0	0	0	100

A total number of 3035 students enrolled in 2005 at all the Universities of Technology. TUT enrolled 70% (2137) of the total enrolments followed by Mantec with 13% (407) and CUT with 7% (213). NMMU and CPUT all enrolled the lowest with 5% (148) and 4% (130) respectively.

African students dominate the Universities of Technology enrolments with 71% (2189), followed by White students with 28% (825). Coloured and Asian students constitute very low enrolments for 2005 academic year. Coloured students registered 1% and Asian students less than 1% of the overall enrolments in 2005. Female students constitute 53% (1594) of the total enrolments at Universities of Technology and males constitute 47% (1441).

5.2.2 Agricultural Education and Training Enrolments at Universities of Technology by Level of Qualifications & CESM in 2005

Table below depicts agricultural enrolments at Universities of Technology by CESM and levels of qualifications.

Agricultural enrolments at Universities of Technology by CESM & levels of qualification							
CESM	N. H. CER.	DIPLOMA	BTECH	MTECH	DTECH	TOTAL	%
Animal Science	2	843	96	0	1	**942**	**31**
Horticulture	0	141	22	5	0	**168**	**6**
Plant Science	0	212	29	0	0	**241**	**8**
Land Reclamation	0	80	10	0	0	**90**	**3**
Renewable Natural Resources	0	365	89	21	2	**477**	**15**
Agricultural Management	1	432	169	0	0	**602**	**19**
Other Agricultural & Renewable Resources	0	51	0	0	0	**51**	**2**
Wildlife	0	128	10	0	0	**138**	**5**
Agricultural Science-General	2	157	27	41	3	**230**	**8**
Agricultural Extension	0	49	47	0	0	**96**	**3**
TOTAL	**5**	**2458**	**499**	**67**	**6**	**3035**	
%	**0.5**	**81**	**16**	**2**	**0.5**		**100**

Animal Science, Agricultural Management and Renewable Natural Resources have the highest enrolment figures with 31% (942), 19% (602) and 15% (477) respectively. Other CESM's have registered less than 10% of enrolments each. Diploma enrolments constitute 81% (2458) of the total enrolments at Universities of Technology in 2005 followed by BTech enrolments with 16% (499). Postgraduate (MTech and DTech) enrolments constitute 2% of the total enrolments at Universities of Technology in 2005.

5.2.3 Agricultural Education and Training Graduate figures at Universities of Technology in 2005

Table below presents a demographic breakdown of Universities of Technology graduates by gender and race.

Breakdown of graduates by gender and race per University of Technology													
Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
CPUT	5	4	**9**	3	1	**4**	40	8	**48**	0	0	**0**	**61**
CUT	29	27	**56**	0	0	**0**	15	0	**15**	0	0	**0**	**71**
Mantec	32	18	**50**	0	0	**0**	0	0	**0**	0	0	**0**	**50**
NMMU	29	18	**47**	0	0	**0**	3	0	**3**	0	0	**0**	**50**
TUT	188	128	**316**	0	0	**0**	94	42	**136**	0	1	**1**	**453**
Total	283	195	**478**	3	1	**4**	152	50	**202**	0	1	**1**	**685**

A total of 685 graduates were trained in 2005 at all Universities of Technology. TUT has trained 66% of the overall graduates at Universities of Technology in 2005. Other Universities of Technology together trained the remaining 34% of the overall graduates in 2005.

African graduates constitute 69% of all the AET graduates at Universities of Technology in 2005, followed by White graduates with 29%. Coloured graduates comprise 1% of the total graduates trained by Universities of Technology in 2005. Male graduates constitute 64% of the overall AET graduates at Universities of Technology in 2005 and female graduates account for 36%.

5.2.4 Agricultural Education and Training Graduate figures at Universities of Technology by Level of Qualification and CESM in 2005

Table below presents a breakdown of graduates at Universities of Technology by CESM and level of qualification.

Agricultural graduates at Universities of Technology in 2005 by CESM & level of qualification						
CESM	**N. H CERT**	**DIPLOMA**	**BTECH.**	**MTECH.**	**TOTAL**	**%**
Agricultural Management	1	128	85	1	**215**	31
Animal Science	1	148	32	0	**181**	26
Horticulture	1	14	3	0	**18**	3
Plant Science	0	20	22	0	**42**	6
Land Reclamation	1	9	7	0	**17**	2
Renewable Natural Resources	0	69	14	4	**87**	13
Other Agric. & Renewable Resources	0	12	1	0	**13**	2
Wildlife Management	0	25	0	0	**25**	4
Agricultural Science-General	1	29	21	1	**52**	8
Agricultural Extension	0	11	24	0	**35**	5
Total	**5**	**465**	**209**	**6**	**685**	**0**
%	**1**	**68**	**31**	**1**		**100**

Agriculture Management, Animal Science and Renewable Natural Resources have high graduate figures with 31% (215), 26% (181) and 13% (87) respectively. Other CESMs have less than 10% of the graduates each.

Diploma graduates dominate the AET graduates at Universities of Technology produced in 2005 with 68% (465) followed by BTech graduates with 31% (209). Certificates and MTech graduates each constitute 1% of the total graduates at Universities of Technology in 2005 respectively.

5.3. Agricultural Education and Training at universities in 2005

There are 10 Universities offering AET programmes in South Africa namely: University of Fort Hare, University of North West, University of Free State, University of KwaZulu Natal, University of Limpopo, University of Pretoria, University of South Africa, University of Stellenbosch, University of Venda and University of Zululand. These institutions offer agricultural qualifications from NQF level 5 through to level 8 i.e. from University Diploma to Doctor of Philosophy (PhD) programmes. All the Universities offer various agricultural programmes and they vary in terms of scope. For instance University of Stellenbosch, University of Pretoria, University of KwaZulu Natal, University of Free State, University of South Africa and University of Fort Hare, all consist of many programmes in their agricultural curricula.

5.3.1 Agricultural Education and Training enrolment figures at universities in 2005

A demographic breakdown of AET enrolments by gender and race at universities is presented in table below.

Breakdown of enrolments by gender and race per university

Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
University Fort Hare	259	156	**415**	0	0	**0**	0	0	**0**	0	0	**0**	**415**
University North West	353	433	**786**	0	0	**0**	0	0	**0**	0	0	**0**	**786**
University of Free State	178	90	**268**	8	6	**14**	363	83	**446**	1	0	**1**	**729**
University of KwaZulu Natal	208	119	**327**	6	4	**10**	99	129	**228**	19	37	**56**	**621**
University of Limpopo	408	273	**681**	0	0	**0**	0	0	**0**	0	0	**0**	**681**
University of Pretoria	196	167	**363**	3	6	**9**	584	247	**831**	7	10	**17**	**1 220**
University of South Africa	550	472	**1022**	17	8	**25**	316	214	**530**	9	11	**20**	**1 597**
University of Stellenbosch	91	69	**160**	48	48	**96**	883	597	**1 480**	5	1	**6**	**1 742**
University of Venda	247	157	**404**	0	0	**0**	0	0	**0**	0	0	**0**	**404**
University of Zululand	59	48	**107**	0	0	**0**	0	0	**0**	0	0	**0**	**107**
Total	2 549	1 984	**4 533**	82	72	**154**	2 245	1 270	**3 515**	41	59	**100**	**8 302**

A total number of 8 302 students enrolled in 2005 at all universities. University of Stellenbosch constitutes 20% (1742) of the overall enrolments for the 2005 academic year. University of South Africa enrolled 19% (1597) followed by University of Pretoria with 15% (1220) of the overall university enrolments for 2005 academic year. Other universities enrolled less than 10% of the overall enrolments at universities in 2005.

African students account for 55% (4533) of the overall AET enrolments at universities followed by White students with 42% (3515). Coloured and Asian students together constitute less than 3% (254) of the AET enrolments in the 2005 academic year. Male students constitute 59% (4917) and female students comprise 41% (3385) of total enrolments in the 2005 academic year

5.3.2 Agricultural Education and Training enrolments at universities by Level of Qualifications & CESM in 2005

Table below presents agricultural enrolments at universities by CESM and levels of qualifications.

Agricultural enrolments in universities in 2005 by CESM and academic level.							
CESM	**Undergraduate**	**Postgraduate Diploma**	**Honours**	**Masters**	**PhD**	**TOTAL**	**%**
Agricultural Economics (Science Stream)	187	14	9	49	36	295	4
Agricultural Economics (Art Stream)	117	0	5	4	0	126	2
Agricultural Economics (BCom Stream	0	0	3	7	1	11	0
Agricultural Eco. (AgriBusiness)	181	0	22	0	0	203	2
Agricultural Science (Art Stream)	488	0	4	59	12	563	7
Agricultural Science (Science Stream)	870	23	11	273	207	1384	17
Agric. Extension (Inst. Agrar. Stream)	0	0	5	9	0	14	0
Agric. Extension	131	36	10	59	5	241	3
Agric. Food Technology	347	25	9	42	23	446	5
Animal Science	1099	0	40	151	22	1312	16
Horticulture	41	0	3	38	21	103	1
Plant Science	103	0	18	44	20	185	2
Plant Science (Inst.Agrar Stream)	11	0	2	4	0	17	0
Rural Development	0	0	17	11	2	30	0
Soil Science	70	0	2	27	14	113	1
Forestry	46	0	0	25	15	86	1
Renewable Natural Resources	96	3	0	14	11	124	1
Agric. Management	1405	0	50	100	0	1555	19
Other Agric. and Renewable Resources	9	0	0	168	0	177	2
Agric. Food Tech (Inst. Agrar. Stream)	20	0	2	4	0	26	0
Animal Sc (Insta. Agrar. Stream)	4	0	0	11	0	15	0
Horticulture (Inst. Agrar. Stream)	0	0	0	5	0	5	0
Land Rec (Land Use Inst. Agrar. Stream)	5	0	1	6	0	12	0
Rural Dev (Inst. Agrar. Stream)	3	0	3	6	2	14	0
Agric Econ (Inst. Agrar. Stream)	1	0	6	19	0	26	0
Environmental Management	137	0	171	16	9	333	4
Land Reclamation (Land Use)	45	0	5	0	0	50	1
Agronomy	97	0	4	16	11	128	2
Agronomy (Inst. Agrar. Stream)	1	0	0	3	0	4	0
Wildlife	6	0	7	62	3	78	1
Consumer Science	568	0	0	50	8	626	8
TOTAL	**6 088**	**101**	**409**	**1282**	**422**	**8 302**	
%	73%	1%	5%	16%	5%		100

Agricultural Management, Agricultural Sciences (Science Stream) and Animal Sciences enrolled the highest number of students at universities with 19% (1555), 17% (1384) and 16% (1312) respectively. All other CESM enrolled less than 10% of the overall enrolments at universities in the 2005 academic year.

The Undergraduate enrolments account for 73% (6088) of the total enrolments at universities in 2005 followed by Masters enrolments with 16% (1282). PhD and Honours level each contributed 5% (422 and 409 respectively) of the total enrolments at universities in 2005. Postgraduate Diploma enrolments account for 1% (101) of the total number of enrolments at universities in the 2005 academic year.

5.3.3 Agricultural Education and Training Graduate figures at universities in 2005

A demographic breakdown of AET graduates by gender and race at universities is represented in the table below.

Demographic breakdown of AET graduates at universities in 2005.

Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Fort Hare University	47	32	**79**	0	0	**0**	0	0	**0**	0	0	**0**	**79**
North West University	81	104	**185**	0	0	**0**	0	0	**0**	0	0	**0**	**185**
University of Free State	44	16	**60**	2	0	**2**	74	20	**94**	1	0	**1**	**157**
University of KwaZulu-Natal	22	22	**44**	0	2	**2**	15	38	**53**	0	6	**6**	**105**
University of Limpopo	36	40	**76**	0	0	**0**	0	0	**0**	0	0	**0**	**76**
University of Pretoria	40	31	**71**	0	0	**0**	40	105	**145**	0	4	**4**	**220**
University of South Africa	45	42	**87**	2	0	**2**	21	23	**44**	5	3	**8**	**141**
University of Stellenbosch	16	15	**31**	3	6	**9**	141	94	**235**	0	0	**0**	**275**
University of Venda	27	22	**49**	0	0	**0**	0	0	**0**	0	0	**0**	**49**
University of Zululand	25	16	**41**	0	0	**0**	0	0	**0**	0	0	**0**	**41**
Total	383	340	**723**	7	8	**15**	291	280	**571**	6	13	**19**	**1328**

One thousand three hundred and twenty eight (1 328) graduates qualified in 2005 at all the universities. University of Stellenbosch awarded 20% (275) of the total graduates in the 2005 academic year followed by University of Pretoria with 16% (220). North West University and University of Free State account for 14% (185) and 12% (157) of the total graduates in universities in the 2005 academic year respectively. All other universities each produced less than 10% of the graduates figure.

African graduates account for 54% (723) and White graduates constitute 43% (571) of the total universities graduates for the 2005 academic year. Coloured and Asian graduates together constitute 3% (34) of the total graduates at universities for the 2005 academic year. Gender breakdown indicates that males dominate the universities graduates with 52% (687) and females constitute only 48% (641) of the total graduates for the 2005 academic year at universities.

5.3.4 AET graduates at universities by Level of Qualifications & CESM in 2005

Table below presents a breakdown of university graduates by level of qualification and CESM categories.

Agricultural graduates at universities in 2005 by CESM and academic level.							
CESM	Under-graduate	Postgraduate Diploma	Honours	Masters	PhD	TOTAL	%
Agricultural Economics (Science Stream)	21	1	13	14	2	**51**	4
Agricultural Economics (Art Stream)	14	0	6	3	0	**23**	2
Agricultural Economics (BCom Stream	0	0	1	1	0	**2**	0
Agricultural Economics (AgriBusiness)	15	0	9	0	0	**24**	2
Agricultural Science (Art Stream)	32	0	3	12	1	**48**	4
Agricultural Science (Science Stream)	148	0	13	60	37	**258**	19
Agric. Extension (Inst. Agrar. Stream)	0	0	2	1	0	**3**	0
Agric. Extension	27	15	5	3	0	**50**	4
Agric. Food Technology	62	18	7	10	4	**101**	8
Animal Science	224	2	17	20	2	**265**	21
Horticulture	24	0	2	11	5	**42**	3
Plant Science	18	0	8	12	5	**43**	3
Plant Science (Inst.Agrar Stream)	1	0	2	2	0	**5**	0
Rural Development	0	0	8	0	0	**8**	1
Soil Science	6	0	2	2	2	**12**	1
Forestry	7	0	0	9	4	**20**	2
Renewable Natural Resources	14	0	0	2	0	**16**	1
Agric. Management	119	0	21	12	0	**152**	11
Other Agric. and Renewable Resources	0	0	0	18	0	**18**	1
Agric. Food Tech (Inst. Agrar. Stream)	1	0	0	0	0	**1**	0
Animal Sc (Insta. Agrar. Stream)	4	0	0	1	0	**5**	0
Horticulture (Inst. Agrar. Stream)	0	0	0	1	0	**1**	0
Land Rec (Land Use Inst. Agrar. Stream)	0	0	1	0	0	**1**	0
Rural Dev (Inst. Agrar. Stream)	0	0	0	0	0	**0**	0
Agric Econ (Inst. Agrar. Stream)	1	0	1	2	0	**4**	0
Environmental Management	20	0	20	1	0	**41**	3
Land Reclamation (Land Use)	8	0	1	0	0	**9**	1
Agronomy	13	0	2	1	0	**16**	1
Agronomy (Inst. Agrar. Stream)	1	0	0	0	0	**1**	0
Wildlife	18	0	8	13	0	**39**	3
Consumer Science	65	0	0	4	0	**69**	5
TOTAL	**863**	**36**	**152**	**215**	**62**	**1328**	**100**
%	65	3	11	16	5		

Animal Science and Agric Science (Science Stream) produced 21% (265) and 19% (258) followed by Agricultural Management with 1% (152) of the university enrolments. Other CESM constitute less than 10% of the total AET graduates produced in 2005 at Universities.

Graduates at Junior Degree account for 65% (863) of the total enrolments at universities in 2005, followed by Masters graduates with 16% (215). Honours and PhD level contributed 11% (152) and 5% (62) of the total graduates at universities in 2005 respectively. Postgraduate Diploma graduates account for 3% (36) of the total number of enrolments at universities in the 2005 academic year.

5.4. Enrolments and graduate outputs for Scarce Skills in Agriculture

Veterinary Science (BVSc) and Agricultural Engineering are regarded as Scarce Skills in the agricultural sector; hence they are discussed separately from other CESM. University of Pretoria is the only institution in South Africa offering Veterinary Science from BVSc Degree up to Postgraduate level and University of KwaZulu Natal is the only institution offering BSc Agricultural Engineering.

5.4.1 Enrolments for Scarce Skills in Agriculture

Table below presents a demographic breakdown of Scarce Skills enrolments at universities.

Demographic breakdown of Scarce Skills enrolments in 2005													
LEVEL	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Veterinary Science (BVSc) Degree	5	1	**6**	1	0	**1**	28	48	**76**	2	0	**2**	**85**
B Sc Agricultural Engineering Degree	31	10	**41**	0	0	**0**	19	2	**21**	3	3	**6**	**68**
Viticulture (Diploma)	0	0	**0**	1	0	**1**	30	4	**34**	0	0	**0**	**35**
Viticulture (Degree)	4	6	**10**	10	6	**16**	143	89	**232**	0	0	**0**	**258**
Viticulture (Honors)	0	1	**1**	0	0	**0**	4	0	**4**	0	0	**0**	**5**
Viticulture (Masters)	0	0	**0**	0	0	**0**	4	2	**6**	0	0	**0**	**6**
Viticulture (PhD)	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**
Pomology (Diploma)	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**
Pomology (Degree)	0	1	**1**	4	0	**4**	6	1	**7**	0	0	**0**	**12**
Oenology (Degree)	1	0	**1**	0	1	**1**	15	16	**31**	0	0	**0**	**33**
Oenology (Masters)	0	1	**1**	0	0	**0**	4	2	**6**	0	0	**0**	**7**
Oenology (PhD)	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**
TOTAL	41	20	**61**	16	7	**23**	259	165	**424**	5	3	**8**	**516**

Five hundred and sixteen (516) students enrolled in the Scarce Skills programmes in 2005 of which 50% (258) were Viticulture Degree students and 16% (85) were BVSc students.

White students dominated the total enrolments in these programmes with 82% (424) followed by African students with 12% (61). Coloured students constitute only 4% (23) of the total enrolment in these programmes. Asian students constitute 2% (8) of the total number of enrolled students in the Scarce Skills programmes in the 2005 academic year.

Gender breakdown indicates that male graduates dominate the Scarce Skills enrolments with 62% (321) and female enrolments constitute only 38% (195) of the total number enrolments in these programmes in the 2005 academic year. It should be noted however, that it is only from 2004 that the DoA started to offer bursaries to redress issues of inequity in the sector.

5.4.2 Graduates for Scarce Skills in Agriculture

Table below presents a demographic breakdown of Scarce Skills graduates at universities.

Demographic breakdown of Scarce Skills graduates in 2005													
LEVEL	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Veterinary Science (BVSc) Degree	0	0	**0**	1	0	**1**	25	57	**82**	1	3	**4**	**87**
B Sc Agricultural Engineering Degree	3	1	**4**	0	0	**0**	4	2	**6**	1	0	**1**	**11**
Viticulture (Diploma)	0	0	**0**	1	0	**1**	6	1	**7**	0	0	**0**	**8**
Viticulture (Degree)	0	1	**1**	1	2	**3**	29	15	**44**	0	0	**0**	**48**
Viticulture (Masters)	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**
Pomology (Diploma)	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**
Degree	0	0	**0**	0	1	**1**	1	6	**7**	0	0	**0**	**8**
Masters	0	0	**0**	0	0	**0**	2	1	**3**	0	0	**0**	**3**
PhD	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
TOTAL	3	2	**5**	3	3	**6**	72	83	**155**	2	3	**5**	**171**

One hundred and seventy one (171) graduates qualified in the Scarce Skills programmes at universities in 2005 of which 51% (87) were for BSc Veterinary Science and 28% (48) were for Viticulture Degrees.

White graduates dominate the total number of graduates in the Scarce Skills programmes with 90% (155) followed by Coloured graduates with 4% (6). African and Asian graduates each constitute 4% (5) of the total number of graduates in the Scarce Skills programmes. Female graduates dominate the Scarce Skills graduates with 53% (91) and male graduates constitute 47% (80) of the overall graduates in these programmes at universities in 2005.

5.5 Total AET provision in 2005

A total of 13 076 students enrolled for AET programmes in 2005. One thousand seven hundred and thirty nine (1 739) were from colleges, 3 035 were from Universities of Technology and 8 302 were from the traditional universities. In terms of race, Africans were in majority with 7 987, followed by Whites with 5 089. In terms of gender, males dominated with 7 607 and females with 5 469.

In terms of graduate output, a total of 2 651 graduates qualified. This represents 17% of the total population of employees in the sector with intermediate to Higher-level skills as indicated in the labour force survey 2004. In terms of race, Africans were in majority with 1 701, followed by Whites with 950 and in terms of gender, males dominated with 1 561.

In terms of enrolments within the Scarce Skills categories, 516 students were registered. In terms of race, Whites were 424 followed by Africans with 61. In terms of gender, males dominated with 321 and females were 195.

Total Scarce Skills graduates that qualified are 171. Veterinary Science dominated the total number of Scarce Skills graduates with 87 and Viticulture Degree produced 48 graduates. In terms of race, Whites were 155 followed by Africans with 6.
In terms of gender, females were 91 and males were 80. Coloured and Asian graduates together constituted 10 graduates.

6 RECOMMENDATIONS

Through the implementation of the Agricultural Education and Training Strategy and the work of both the National and Provincial Agricultural Education and Training Forums the following is recommended:

6.1 Deal as a matter of urgency with issues of curricula reviews for the purposes of coherence, relevance and harmonization, including the broadening access to Agricultural Education and Training in particular in the category of scarce agricultural skills and the standardization of the application of quality measures in agricultural education and training.

6.2 Develop and recommend strategies for identifying and encouraging Under graduates to pursue Postgraduate studies in specialized fields, relevant to the requirements of both the National and Provincial Departments of Agriculture and to increase a pool of agricultural scientists. This is based on the preliminary findings of this study that there is a limited number of enrolments and graduation at Masters and PhD level.

6.3 Discourage enrolment of students in study fields that are in less demand in the sector through periodic engagements with universities.

6.4 Develop and recommend strategies for marketing agriculture as a career of choice, targeting in particular, African youth who seem to miss out in terms of studying programmes within the Scarce Skills categories. This is based on the preliminary findings of this study which indicate an insignificant number of Coloureds and Asians enrolled and graduating in agriculture. Such strategies must also encourage African females to enroll for agricultural studies, particularly in the category of Scarce Skills.

6.5 Develop and recommend agricultural skills, financing strategies targeting African learners with the potential for scarce agricultural skills. These strategies must incorporate massive career awareness campaigns targeting school going learners with a subject combination of mathematics and Physical Science. In this regard the strategies must recommend ways and means of enforcing collaboration among the various stakeholders, such as Departments of Agriculture and Education, the universities, colleges and Universities of Technology.

There is a further need to increase investment in the form of bursaries, if we are aiming to meet the skills needs of agriculture in the long term. Such schemes should encourage learners to go beyond Undergraduate studies to postgraduate.

6.6 Initiate projects to develop new qualification, which are NQF, aligned in pertinent areas of agriculture, including qualifications for Agricultural Science teachers. This should be done in cooperation with the agricultural line function SETAs, the SGBs and institutions of learning. New qualifications for the Agricultural Science teachers in particular will help rebuild the image of agriculture at Primary and Secondary school level.

6.7 Engage with FET and HE structures (Higher Education South Africa and APAC) to facilitate the design of new AET programmes for the retraining of unemployed agricultural graduates, which are made of graduates mainly from the African communities who have a tendency to study programmes, which are in less demand at the moment.

6.8 There is a need to encourage the institutions to increase the number of female learners and to begin to enroll learners with disabilities.

Chapter 1

Trends in agricultural education and training at the colleges of agriculture during the 2005 academic year



Chapter 1

1.1. Introduction

This report is based on a study conducted on the agricultural enrolments; graduate outputs and AET programmes offered by various agricultural colleges and Higher Education institutions for the 2005 academic year. The DoA collects data on the types of programmes offered in the Colleges of Agriculture and Higher Education (HE) institutions, number of enrolments and number of graduates in all the Agricultural programmes offered by these institutions on annual basis. The 2005 report is the second of a series of annual reports on AET enrolments; graduate outputs and programmes offered by Colleges of Agriculture as well as HE institutions to be produced by the DoA.

1.2. Objectives of the project

The primary objective of the study was to observe the trends in terms of skills supply for the agriculture sector by the HE institutions and the agricultural colleges. The other objective of the study, is to observe trends with regard to AET enrolments, graduate outputs and the types of AET programmes offered by the various institutions, in order to inform policy and planning regarding AET provisioning in the public Colleges of Agriculture and Higher Education institutions for purposes of skills supply priorities for the sector. The findings would further assist in the development of strategies for addressing the skills demand in the agriculture sector.

1.3. Methodology for the study

The research study was more quantitative in nature and its aim was to yield quantitative descriptive data. The Education, Training and Extension Services (ETES) Directorate conducted a questionnaire-based survey with all the Colleges of Agriculture, universities and Universities of Technology offering AET programmes. The study was conducted from April 2006 to March 2007.

Data collection for the study focused on number of AET enrolments and graduates from Undergraduate to Postgraduate levels focusing on all the agricultural disciplines. It also focused on the types of programmes offered in these institutions. Questionnaires requesting information on the number of enrolments and graduates in all the agricultural programmes offered by each institution, were distributed electronically to all public HE institutions offering agricultural programmes and the 12 colleges of agriculture. The questionnaires were completed and returned to the Directorate in the same way.

For ease of interpretation, the qualifications were categorized using the Categorisation of Education Subject Matter (CESM) of the Department of Education. However, in some cases the CESM was further broken down into sub-categories to obtain a better understanding of the enrolments and supply of AET graduates. E.g. Agric Economics was broken down into B Agric, Bsc, B. Inst. Agrar and B Com Streams. The following table indicates how the qualifications were classified in the report as well as the sub-categories.

Table 1: Classification of qualifications in the report

CESM	Qualifications
Animal Science	Diploma Animal Health, BTech Animal Heath, MTech Animal Health, DTech Animal Health. Diploma Animal Production, BTech Animal Production, MTech Animal Production, DTech Animal Production Diploma Pig Production Management, BTech Pig Production Management, MTech Pig Production Management, DTech Pig Production Management Diploma Equine Science, BTech Equine Science, MTech Equine Science, DTech Equine Science Diploma Nutrition, BTech Nutrition, MTech Nutrition DTech Nutrition

CESM	Qualifications
	Diploma Production Physiology, BTech Production Physiology, MTech Production Physiology, DTech Production Physiology Diploma Animal Production Management, BTech Animal Production Management, MTech Animal Production Management B.A. Animal Production, B.A.(Hons) Animal Production, M.A. Animal Production, PhD Animal Production BSc Animal Production, BSc (Hons) Animal Production, MSc. Animal Production, PhD Animal Production BSc Animal Health, BSc (Hons) Animal Health MSc Animal Health, PhD Animal Health, BSc Animal Science and Animal Genetics, BSc (Hons) Animal Science and Animal Genetics, MSc Animal Science and Animal Genetics, PhD: Animal Science and Animal Genetics
Horticulture	Diploma Horticulture, BTech Horticulture, MTech Horticulture, DTech Horticulture, BSc Horticulture, BSc (Hons) Horticulture, MSc Horticulture, PhD Horticulture
Plant Science	Diploma Crop Production, BTech Crop Production, MTech Crop Production, DTech Crop Production Diploma Plant Production, BTech Plant Production, MTech Plant Production, DTech Plant Production BSc Pasture Science, BSc (Hons) Pasture Science, MSc. Pasture Science, PhD Pasture Science B.A. Crop Production Management, B. A. (Hons) Crop Production Management, M .A. Crop Production Management, PhD Crop Production Management BSc Crop Science, BSc (Hons) Crop Science, MSc Crop Science, PhD Crop Science BSc Plant Pathology, BSc (Hons) Plant Pathology, MSc: Plant Pathology, PhD Plant Pathology BSc. Plant Pathology and Entomology, BSc (Hons) Plant Pathology and Entomology, MSc Plant Pathology and Entomology, PhD Plant Pathology and Entomology BSc Plant Breeding and Genetics, BSc (Hons) Plant Breeding and Genetics, MSc Plant Breeding and Genetics, PhD Plant Breeding and Genetics BSc Plant Protection, BSc (Hons) Plant Protection, MSc Plant Protection, PhD :Plant Protection BSc Plant Production, BSc (Hons) Plant Production, MSc Plant Production, PhD Plant Production

CESM	Qualifications
Land Reclamation	Diploma Landscape Technology, BTech Landscape Technology, MTech Landscape Technology, DTech Landscape Technology
Renewable Natural Resources	Diploma Nature Conservation, BTech Nature Conservation, MTech Nature Conservation, DTech Nature Conservation
Agriculture Management	Diploma Agricultural Management, BTech Agricultural Management, MTech Agricultural Management, DTech Agricultural Management
Other Agriculture and Renewable Resources	Diploma Agriculture: Mixed Farming, BTech Agriculture: Mixed Farming, MTech Agriculture :Mixed Farming, DTech Agriculture: Mixed Farming
Wildlife	Diploma Game Ranch Management, BTech Game Ranch Management, MTech Game Ranch Management, DTech Game Ranch Management
Agricultural Science (in Universities of Technology)	Diploma Agriculture, BTech Agriculture, MTech Agriculture, DTech Agriculture Diploma Agricultural Science, BTech Agricultural Science, MTech Agricultural Science, DTech Agricultural Science
Agricultural Science (B.Agric. Stream)	B.Agric. Science, B.A. (Hons) Agricultural Science, M .A. Agricultural Science, PhD :Agricultural Science
Agricultural Science (Science Stream)	BSc Agricultural Science, BSc (Hons) Agricultural Science, MSc Agric. Science, PhD Agricultural Science
Agriculture Extension	Diploma Agricultural Rural Development, BTech Agricultural Rural Development, MTech Agricultural Rural Development, DTech Agricultural Rural Development B.Agric. Extension, B. (Hons) Agricultural Extension, M. Agricultural Extension, PhD Agricultural Extension
Agricultural Economics	B. Agricultural Economics, B. (Hons) Agricultural Economics, M.A. Agricultural Economics, PhD Agricultural Economics BSc Agricultural Economics, BSc (Hons) Agricultural Economics, MSc Agricultural Economics, PhD: Agricultural Economics, B .Com. Agricultural Economics, B. Com. (Hons) Agricultural Economics, M. Com. Agricultural Economics, PhD: Agricultural Economics
Agricultural Economics (AgriBusiness)	B.Com. Agricultural Economics (AgriBusiness), B.Com. (Hons) Agricultural Economics(AgriBusiness), M.Com. Agricultural Economics (AgriBusiness), PhD Agricultural Economics (AgriBusiness)
Agricultural Extension (Inst.Agrar. Stream)	B .Inst.Agrar. Agricultural Extension, B. (Hons) Inst.Agrar. Agricultural Extension, M .Inst.Agrar. Agricultural Extension,

CESM	Qualifications
Agricultural Food Technology	BSc Food Science and Technology, BSc (Hons) Food Science and Technology, M Sc Food Science and Technology, PhD Food Science and Technology BSc Food Science and Chemistry, BSc (Hons) Food Science and Chemistry, MSc Food Science and Chemistry, PhD Food Science and Chemistry, BSc Food Science and Biochemistry, BSc (Hons) Food Science and Biochemistry, MSc Food Science and Biochemistry, PhD Food Science and Biochemistry, BSc Food Science and Microbiology, BSc (Hons) Food Science and Microbiology, MSc Food Science and Microbiology, PhD Food Science and Microbiology
Soil Science	BSc Agric. Soil Science, BSc (Hons) Agric. Soil Science, MSc Agric. Soil Science, PhD Agric. Soil Science
Forestry	BSc Forestry, BSc (Hons) Forestry, MSc Forestry, PhD Forestry
Agricultural Food Technology (Inst.Agrar. Stream)	B. Inst.Agrar. Food Technology, B. (Hons) Inst.Agrar. Food Technology, M. Inst.Agrar. Food Technology,
Agricultural Management (Inst.Agrar. Stream)	B. Inst.Agrar. Agricultural Management, B. Inst.Agrar. (Hons) Agricultural Management, M. Inst.Agrar. Agricultural Management,
Animal Science (Inst.Agrar. Stream)	B. Inst.Agrar. Animal Science. B. (Hons) Inst.Agrar. M. Inst.Agrar. Animal Science,
Horticulture (Inst.Agrar. Stream)	B. Inst.Agrar. Horticulture, B. (Hons) Inst.Agrar. Horticulture, M. Inst.Agrar. Horticulture,
Land Reclamation (Inst.Agrar. Stream)	B. Inst.Agrar. Land Reclamation, B. (Hons) Inst.Agrar. Land Reclamation, M .Inst.Agrar. Land Reclamation,
Rural Development (Inst.Agrar. Stream)	B. Inst.Agrar. Rural Development, B. (Hons) Inst.Agrar. Rural Development, M Inst.Agrar. Rural Development,
Agricultural Economics (Inst.Agrar. Stream)	B Inst.Agrar. Agricultural Economics, B Inst.Agrar. (Hons) Agricultural Economics, M Inst.Agrar. Agricultural Economics,
Environmental Management (Inst.Agrar. Stream)	B Inst.Agrar. Environmental Management, B Inst.Agrar. (Hons) Environmental Management, M Inst.Agrar. Environmental Management,
Agronomy (Inst.Agrar. Stream)	B. Inst.Agrar. Agronomy, B Inst.Agrar. (Hons) Agronomy, M Inst. Agrar. Agronomy

The Agricultural Science CESM and Agricultural Extension were sub categorized into the B.Agric.Stream, Inst.Agrar.Stream and the B.Sc.Stream. The Agricultural Economics stream was also sub-categorized into the Science stream, B.Agric Stream,

Inst.Agrar Stream and B Com Stream.

Owing to the fact that Agricultural Engineering, Veterinary, Oenology, Pomology and Viticulture were identified as Scarce Skills in the agriculture sector, these programmes were discussed separately from other programmes.

The data presents a demographic breakdown of the number of enrolments and graduates outputs for all the AET programmes in the report.

Chapter 1 presents the introduction of this study. Chapter 2 presents findings on number of enrolments, graduate outputs and programmes offered in Colleges of Agriculture. Chapter 3 and chapter 4 present the same information from the Universities of Technology and universities respectively. Chapter 5 presents the agricultural Scarce Skills at universities and Colleges of Agriculture.

1.4. Limitations

The study is mostly quantitative in nature thus it does not go into depth with regard to factors influencing the trends in agricultural enrolments and graduate outputs in various programmes.

The study could not report on each qualification and used the CESM, which resulted into the different Scarce Skills within a CESM not being clearly indicated e.g. Entomology is included under Plant Health. This was due to the fact that institutions could not provide the information per field of specialization within the CESM.

The other limitation of the study is that the Faculty of Veterinary Science at the University of Pretoria could not provide the data on graduate outputs and enrolments at Postgraduate level. This problem also applies in the case of Agricultural Engineering. The study therefore, does not give indication of the number of graduates and enrolments in Veterinary and Agricultural Engineering at Postgraduate level.

Chapter 2

Trends in agricultural education and training at the colleges of agriculture during the 2005 academic year



Chapter 2

TRENDS IN AGRICULTURAL EDUCATION AND TRAINING AT THE COLLEGES OF AGRICULTURE FOR THE 2005 ACADEMIC YEAR

2.1 Introduction

There are 12 Colleges of Agriculture in the country namely: Cedara College of Agriculture, Elsenburg College of Agriculture, Fort Cox College of Agric & Forestry, Glen College of Agriculture, Grootfontein Agricultural Development Institute, Lowveld College of Agriculture, Madzivhandila College of Agriculture, Owen Sitole College of Agriculture, Potchefstroom College of Agriculture, Taung College of Agriculture, Tompi Seleka College of Agriculture and Tsolo Agriculture and Rural Development Institute. Nine (9) of the 12 colleges offer programmes in the HET band, as well as programmes in the FET band which are usually offered in the form of short courses. Madzivhandila, Tompi Seleka and Tsolo phased out programmes in the HET band, i.e. Diploma and Higher Certificate in Agriculture in 2004, and they only offer FET and GET agricultural programmes.

This chapter presents the types of programmes; NQF levels, accrediting bodies and duration of programmes offered in the Colleges of Agriculture. The chapter also presents the number of enrolments and graduates in various programmes offered in the colleges.

2.2 Curriculum and Programme offerings at the Colleges of Agriculture

There have been no changes in terms of the programmes offered in the colleges in 2004 and 2005 and the colleges still offer programmes ranging from NQF level 1-6. In comparison to the 2004 academic year, the number of colleges offering short courses increased, as well as the number of short courses offered by each of the colleges have increased. For example, in 2004 only 4 colleges offered short courses while in 2005 there were 7 colleges offering short courses. The common qualifications offered by the colleges are a Higher Education Certificate in Agriculture at NQF level 5, and a Diploma in Agriculture at NQF level 6. A Diploma in Agriculture is pursued after completion of the two year Higher Certificate in Agriculture. All the higher certificates are offered as a two-year programme of which the third year will lead to a diploma.

Colleges have attempted to design their programmes to suit the skills requirements of the particular agricultural industry in their locality (e.g. wine farming in the Western Cape or forestry in the Lowveld).

The types of partnerships which existed between some of the colleges and local Higher Education Institutions still continuation. For example, Elsenberg College is linked with the University of Stellenbosch in providing a Degree programme related to local industrial needs in the Western Cape. The Taung College of Agriculture is in a form of partnership with the North West Province's Vuselela College, specifically its branch in Pudimoe, Taung. Under their agreement, the College is teaching the FET College N1-N6 programme having started with the first N1 group in 2003. The idea is for students to begin with the N1 to N3 programmes and then feed into the traditional agricultural college programmes based on the Certificate, Higher Certificate and Diploma requirements. All students at Taung who are doing FET courses are counted in the FET dataset operated by the National Department of Education.

Furthermore, the Colleges are working hard to provide support for small and emerging farmers in the provinces in which they are located. These factors have brought about marked differentiation between the colleges in their programme mix as well as the introduction of short courses to address the needs of the farmers.

Unlike the FET colleges, the Colleges of Agriculture do not provide highly standardized programmes. There is flexibility because the Colleges of Agriculture orient their courses towards supporting the agricultural activities that are practiced in their region. For example: Cedara focuses on forestry and horticulture; Lowveld focuses on sugar cane, tobacco and horticulture as well as cotton to attract students from other regions; Potchefstroom focuses on mixed farming as carried out in the Highveld and adjacent regions; and Elsenberg has set itself the aim of specializing in agribusiness.

Even though the curriculum in the Colleges of Agriculture is not highly standardized as in the FET Colleges, the survey reveals that the Agricultural Colleges present programmes that cover the same broad fields of knowledge offered by the FET college curriculum: Plant Production, Animal Production, Agricultural Management and Agricultural Engineering.

Table 2: Knowledge fields and courses within which agricultural subject matter offered by the Colleges of Agriculture

General courses	Courses covering specific sub-fields	More specialized courses within sub-fields	Specific product courses include:
Plant Production	Agronomy (Grain crops)	Crop protection	E.g.: Vegetable, fruit production, viticulture, sugar cane etc. Also: green house management, forestry
	Crop production	Pasture Management	
	Horticulture		
	Soil science		
Animal production	Animal breeding	Artificial insemination	E.g.: Beef cattle, dairy cattle, fish, mutton, pig, poultry, wool etc.
	Animal nutrition	Animal husbandry	
		Feedlot management	
	Animal production	Small stock production	
		Large stock production	
	Animal health		
Agricultural Engineering	Hydraulics/Hydraulic systems	Irrigation and drainage systems	
	Agricultural implements		
	Mechanisation planning		
	Electrical apparatus/motors		
	Surveying		
Agricultural Management	Marketing		
	Farm management	Office administration	
		Land use planning	
	Community development		
	Financial management	Farm accounting	
	Economics	Production factors	
		IT applications	
		Entrepreneurial skills	
Environmental management	Game ranching		
	Veld management	Problem animal control	
Other		Farm safety	

Agricultural colleges offer courses at a more advanced level than the FET colleges. For example, within the knowledge field of Animal Production, more advanced courses such 'Artificial Insemination' is offered. Likewise, in Crop Production more advanced courses like 'Greenhouse Management' are offered. Furthermore, what is called the "Farm Mechanics" of the FET College Curriculum is taken to a more advanced level in the form of "Agricultural Engineering" at the agricultural colleges. Also, Agricultural Management at colleges includes Higher-level courses in Agricultural Economics that are not offered at the FET Colleges. Finally, a knowledge domain not found in the FET College curriculum deals with Environmental Management, conservation and game farming.

The balance between theoretical and practical with the college programmes is considered important. Broadly across the curriculum there is a 55-60% theoretical component with the rest given to practical application. This is not necessarily the case for universities and Universities of Technology. Colleges of Agriculture are therefore providing more hands-on-training in comparison to other FET and Higher Education Institutions. Some colleges also offer non-formal training programmes, typically short courses for the Further Education and Training sector.

The agricultural college is the only institutional type that exclusively offers agricultural programmes. This means that student choice of courses is strictly bound by what is offered by the institution. Therefore, Colleges of Agriculture are similar to FET colleges because student choice is defined by the boundaries of the institution or by the limits of the programme, unlike

universities and Universities of Technology (HE institutions) which offer a variety of programmes within a single qualification and students can select from a wide range of options even outside of the Faculty of Agriculture.

There is further similarity between FET colleges and Colleges of Agriculture, because their programmes are based on a relatively straightforward progression of students between curriculum levels. In the case of the FET colleges, a student enters at N1 and progresses over three years to N3, and in the agricultural colleges, a student progresses from the two year National Higher Certificate to the one year National Diploma. In each case the completion of a strictly defined three year programme leads to a single qualification.

Colleges of agriculture like FET colleges, offer relatively 'closed' programmes, whereas the universities and increasingly the Universities of Technology offer more open programmes, which offer a wide variety. This means that it is possible for programmes in universities and universities of technology to support higher levels of specialisation than in the colleges of agriculture.

Agricultural programmes at the Colleges of Agriculture have a clearly defined shape and are relatively standardized and they are almost similar with regard to content in all the colleges. These factors make it highly possible to describe the actual curriculum within each programme/ qualification and for student progression from one college to the other, which is not necessarily the case with universities and Universities of Technology.

The Higher Education Certificate and the Diploma programmes are accredited by the Higher Education Qualifications Committee of the Council on Higher Education, while the programmes from NQF level 1 to 4 (including short courses) are accredited by Umalusi and AgriSETA.

Nine (9) Colleges of Agriculture offer NQF level 5 qualifications, i.e. Higher education programmes. Madzivhandila and Tompi Seleka colleges have ceased year programmes in the year 2004, while Tsolo College ceased offering HE programmes in 2001. However Tompi Seleka was still offering the year programmes in 2005 for the students who could not complete on record time in the yester years. Table 3 below indicates the types of programmes offered in the individual colleges, the NQF levels, duration of and accrediting bodies for the different programmes as well as short courses.

Table 3: Programmes offered by the Colleges of Agriculture

College	Programme	NQF level	Duration	Accrediting body
1. Cedara	1. Higher Certificate in Agriculture.	5	2 years Full Time	HEQC
	2. Diploma in Agriculture.	6	3 years Full Time	HEQC
	3. Short Courses	*	(1 day-1week)	*
2. Elsenburg	1.National Certificate	1 & 4	Variable (Short courses)	AgriSETA
	2 Higher Cert in Agriculture.	5	2 years Full Time	HEQC
	3. Dip in Agriculture: Cellar Technology.	5	1 year Full Time	HEQC
	4. Diploma in Agriculture.	5	1 year Full Time	HEQC
	5. B Agric	6	3 years Full Time	HEQC
	6. Short courses	1-4	1 – 10 days	AgriSETA

Table 3: Programmes offered by the Colleges of Agriculture				
College	**Programme**	**NQF level**	**Duration**	**Accrediting body**
3. Fort Cox	1. Diploma in Social Forestry.	5	3 years Full Time	HEQC
	2. Diploma in Agriculture: Animal Production.	5	3 years Full Time	HEQC
	3. Diploma in Agriculture: Crop Production.	5	3 years Full Time	HEQC
	4. Diploma in Agriculture: Agribusiness	5	3 years Full Time	HEQC
4. Glen	1. National Certificate	5	2 years Full Time	HEQC
	2. N Dip in Agriculture.	6	1 year (Post Cert)	HEQC
	3. Various Short courses	*	1– 3 days	*
5. Grootfontein	1. Higher Certificate in Agriculture.	5	2 years Full Time	HEQC
	2. Diploma in Agriculture.	6	3 years Full Time	HEQC
	3. Various Short Courses	*	(1-3 weeks)	*
6. Lowveld	1. Higher Certificate. Plant Production	5	2 years Full Time	HEQC
	2. Diploma Plant Production	6	1 year Full Time (post certificate)	HEQC
7. Madzivhandila	1. Learnership programme:	5	3 years Full Time	HEQC
	(i) Animal Production	5	3 years Full Time	HEQC
	(i) Plant Production	1	8 months	AgriSETA
	2.Short courses	1	8 months	AgriSETA
		*	2 days – 3 months	*
8. Owen Sitole	1. Higher Certificate in Agriculture.	5	2 years Full Time	HEQC
	2. Diploma in Agriculture	6	3 years	HEQC
	3.Higher Certificate in Home Economics	5	2 years	HEQC
	4. Dip in Agriculture: Home Economics.	6	3 years	HEQC
9. Potchefstroom	1. Higher Certificate in Agriculture.	4	2 years	HEQC
	2. Dip in Agriculture.	5	3 years	HEQC
	3. Various short courses	1	(1-4 days)	AgriSETA

Table 3: Programmes offered by the Colleges of Agriculture				
College	**Programme**	**NQF level**	**Duration**	**Accrediting body**
10. Taung	1. N4 Certificate in Farming Management.	4	1 year	Umalusi
	2. N5 Certificate in Farming Management.	4	2 years	Umalusi
	3. N6 Certificate in Farming Management.	5 (after completion of 18 months experiential training)	3 years	Umalusi
11. Tompi Seleka	1. Diploma in Animal Production.	6	3 years	HEQC
	2. Diploma in Community Extension.	6	3 years	HEQC
	3. Diploma in Plant Production.	6	3 years	HEQC
	4. Diploma in Resource Utilization.	6	3 years	HEQC
	5. Various short courses	*	(1 day – 1 week)	*
12. Tsolo	1. Various short courses			

* Not accredited

From Table 3, all the Colleges of Agriculture, in accordance with their programme offering, fit well into the FET sector. Taung College of Agriculture is still pursuing the N-stream that is used by technical colleges. After the completion of N6 Certificate, the students in this college may enroll for the National Diploma in Farm Management at any University of Technology. In order to qualify for this diploma, candidates need to complete 18 months of practical training in an agricultural related workplace.

Elsenburg College has entered into a partnership with University of Stellenbosch to offer Bachelor of Agriculture. Potchefstroom College also had a partnership with TUT to offer B.Tech: Agricultural Management; however this partnership ceased at the end of 2005.

The challenge in most of the colleges is accreditation of short courses which are offered either at GET or FET levels, and in most of the colleges these programmes are not accredited and are therefore more like information sharing programmes rather than training programmes.

2.3 Short Courses offered in Colleges of Agriculture

Colleges have engaged on short course programmes vastly in the 2005 academic year. All colleges offered short courses during the 2005 academic year with the exception of Lowveld and Taung colleges. Some colleges offer accredited short courses and these are Elsenburg, Potchefstroom, Madzivhandila and Tsolo. The accreditation of their short courses ranges between NQF level 1 and 4 and they are accredited by AgriSETA. Short courses take duration of 1 day the shortest to 3 months the longest. Table 4 presents the types of courses offered by the colleges of agriculture in the 2005 academic year.

Table 4: Various Short Courses offered at Colleges of Agriculture in 2005

	Tsolo	Cedara	Elsenburg	Fort Cox	Glen	Grootfontein	Lowveld	Madzivhandila	Owen Sitole	Potchefstroom	Taung	Tompi Seleka
Achaar Processing								X				
Agricultural Ext		X										
Agricultural Management			X									
Agricultural Marketing			X									
Agronomy									X			
Alien Plant Control		X										
Apply Fertilizer Manually	X											
Arch Welding										X		
Arts & Crafts		X										
Arts & Crafts: Quality Control		X										
Avcasa			X									
Banking												X
Basic Soil Science and Vine Nutrition			X									
Beef (Feeding)												X
Beef Production		X							X			
Beekeeping		X										
Bioresource Programme		X										
Boer Goat Production			X									
Broiler									X			X
Broiler Production								X				
Calibration of Knapsack Sprays			X									
Care of Farm Animals	X											
Cotton Production									X			
Crop & Veg. Production		X										
Crop Production (Comm. Farm)		X										
Crop Protection (Viticulture)			X									
Crop Types to Plant					X							
Cultivated Pastures		X										
Dairy Processing		X										
Dairy Production			X							X		X
Dairy Production (Basic)		X										
Egg Production									X			
Equine Health: Skin Diseases			X									
Equine Health: Conformation and Claudication			X									
Equine Health: Respiratory Ailments			X									
Equine Health: Neurological Diseases			X									
Equine Health: Claudication 2 (Practical)			X									
Farm Business Management		X							X			
Farming of goats						X						
Farm Management										X		
Fertilizing of crops					X							
Fertilizer Use/ Management								X				

Table 4: Various Short Courses offered at Colleges of Agriculture in 2005

	Tsolo	Cedara	Elsenburg	Fort Cox	Glen	Grootfontein	Lowveld	Madzivhandila	Owen Sitole	Potchefstroom	Taung	Tompi Seleka
Fish Production								X				
Framework development of Vines			X									
Fruit Production												X
Functional and Maintenance of Windmills			X									
Game Management		X										
Goat Production		X										
Harvesting & Post-Harvest Handling of Deciduous Fruit			X									
Health & Food Safety		X										
Hydroponics		X										
Introduction to Greenhouse Management			X									
Irrigation		X										
Join Component Parts	X											
Judging of Beef Cattle					X							
Leadership, Management, Mentorship and Support	X											
Land Assessment		X										
Landcare Facilitation	X											
Layers Production								X				
Maintenance of Equipment	X											
Maintenance Pruning of Vines			X									
Map Reading		X										
Manufacture and Craft Baked Flour Confectionally	X											
Metalwork on the Farm			X									
Nursery Management								X				
Organic Farming		X										
Peanut Processing		X										
Pig Production		X	X						X			X
Plant Production										X		
Planting crops					X							
Poultry production		X	X							X		
Preparing soil for Planting					X							
Products	X											
Production & Pruning of Olives			X									
Project Management												X
Pruning and Manipulation of Deciduous Fruit			X									
Research Methodology		X										
Routine Tractor Care on the Farm			X									
Safe Use of Chemicals								X				
Seedling Production										X		
Sheep Management						X						
Sheep Production		X										
Small scale Dairying		X										
Small Stock AI						X						

Table 4: Various Short Courses offered at Colleges of Agriculture in 2005

	Tsolo	Cedara	Elsenburg	Fort Cox	Glen	Grootfontein	Lowveld	Madzivhandila	Owen Sitole	Potchefstroom	Taung	Tompi Seleka
Small Stock												X
Soil Classification		X										
Soil Fertility		X										
Soil Preparation and Plant Nutrition			X									
Soya bean Processing		X										
Tractor driving					X							
Tractor maintenance					X							
Traditional Food Workshop		X										
Training Poster Module		X										
Vegetable Production			X					X	X	X		X
Veld Management		X										
Vineyard Block Management			X									
Vineyard Canopy Management			X									
Welding						X						
Windmill						X						
Wool classing						X						
Learnership Programmes												
Animal Production								X				
Plant Production								X				
Management skills												
Conflict Management			X									
Effective Public Speaking		X										
Effective Communication		X										
Entrepreneurial		X										
Entrepreneurship			X									
Farm Business Management		X										
Farm-Record Keeping		X										
Financial Management			X					X				
Leadership Skills			X									
Life Orientation			X									
Marketing		X										
Computer Skills												
Computer, Click, Click						X						
Computer Beginners						X						
Computer for Beginners						X						
Computer Literacy								X				
Excel Level 1						X						
Excel Level 2						X						
Introduction to Computers			X									
Ms. Word												X
Power Point												X
Windows Level 1						X						

2.4 Enrolment figures at Colleges of Agriculture

A total number of 1739 students enrolled in 2005 in all agricultural colleges. Madzivhandila, Tompi Seleka and Tsolo enrolled no new students for the 2005 since they phased out their Diploma and Higher Certificate programmes and focused their curricula on short courses and learnerships at GET and FET levels. However Tompi Seleka continued to offer Diploma and Higher Certificate programmes to the students registered in the yester years, but who have failed to complete these programmes within the record time of graduation.

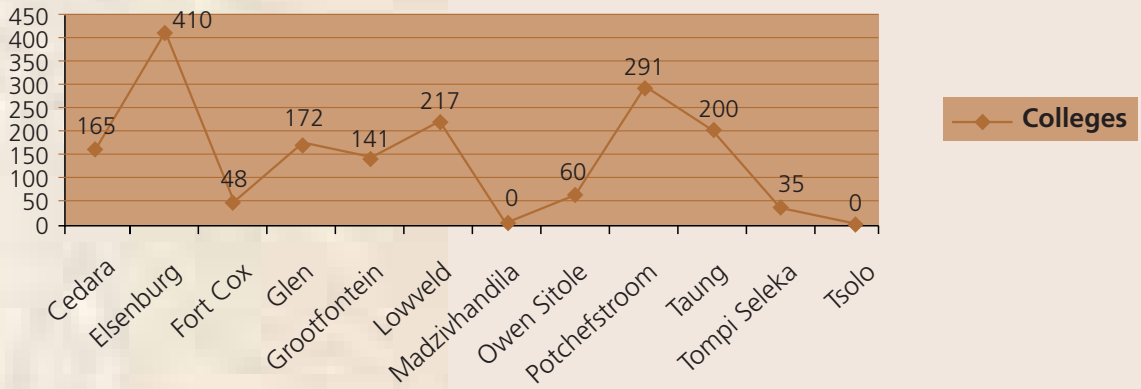
Table 5 shows the enrolment figures per College of Agriculture in the 2005 academic year.

Table 5: Enrolments per College of Agriculture

Name of the college	Number of enrolled students in 2005	Percentage (%)
1. Cedara College of Agriculture	165	9
2. Elsenburg College of Agriculture	410	24
3. Fort Cox College of Agric & Forestry	48	3
4. Glen College of Agriculture	172	10
5. Grootfontein Agricultural Development Institute.	141	8
6. Lowveld College of Agriculture	217	12
7. Madzivhandila College of Agriculture	0	0
8. Owen Sitole College of Agriculture	60	3
9. Potchefstroom College of Agriculture	291	17
10 Taung College of Agriculture	200	12
11 Tompi Seleka College of Agriculture	35	2
12. Tsolo Agricultural and Rural Development Institute	0	0
TOTAL	**1739**	**100**

Elsenburg College had a high number of enrolments with 410 (24%) students, followed by Potchefstroom and Lowveld College with 291 (17%) and 217 (12%) respectively. Taung, Glen and Cedara colleges enrolled 200 (12%), 172 (10%) and 165 (9%) students for the 2005 academic year respectively. The other remaining colleges enrolled less than 9% students in the 2005 academic year.

Figure 1: Enrolments per college of agriculture



* Note that Madzivhandila, Tsolo and Tompi Seleka are offering short courses

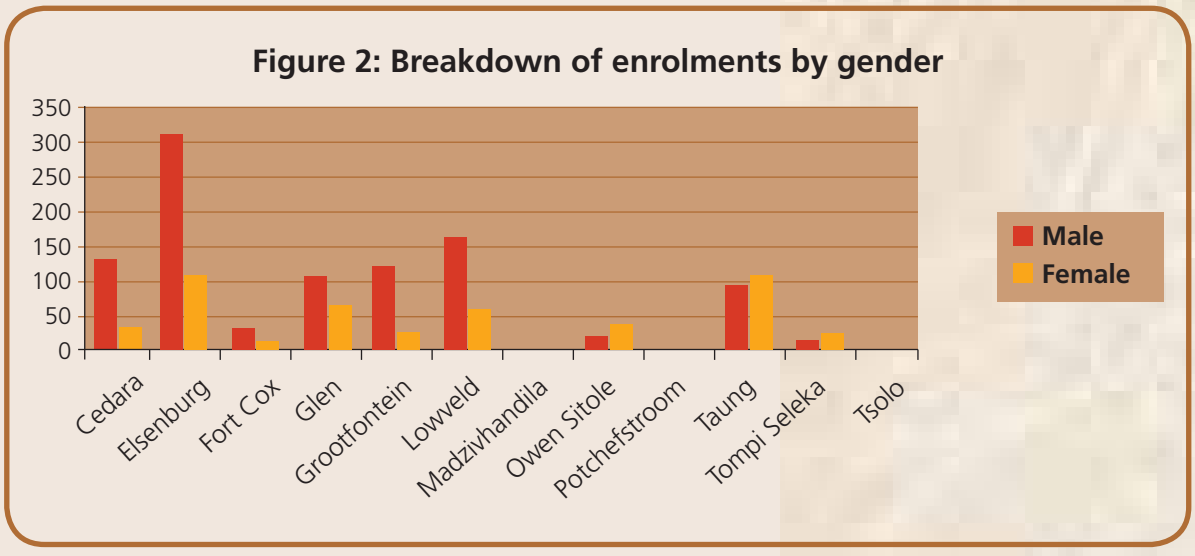
Figure 1 depicts that generally colleges in the 2005 academic year have enrolled more students compared to the 2004 academic. Only 4 colleges have enrolled less than hundred students and one of them enrolled no students in the Diploma and Certificate programmes at all for the 2005 academic year because they have ceased to offer these programmes.

Table 6 shows a demographic breakdown of enrolments per College of Agriculture.

Table 6: Breakdown of colleges enrolments by gender and race														
Name of the College	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
1. Cedara	49	30	**79**	2	0	**2**	76	4	**80**	2	2	**4**	**165**	10
2. Elsenburg	14	7	**21**	73	26	**99**	221	69	**290**	0	0	**0**	**410**	25
3. Fort Cox	35	13	**48**	0	0	**0**	0	0	**0**	0	0	**0**	**48**	3
4. Glen	109	63	**172**	0	0	**0**	0	0	**0**	0	0	**0**	**172**	11
5. Grootfontein	10	6	**16**	11	1	**12**	97	16	**113**	0	0	**0**	**141**	9
6. Lowveld	113	53	**166**	0	0	**0**	47	3	**50**	1	0	**1**	**217**	14
7. Madzivhandila	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
8. Owen Sitole	22	37	**59**	0	0	**0**	1	0	**1**	0	0	**0**	**60**	4
9.Potchefstroom	58	18	**76**	0	0	**0**	199	16	**215**	0	0	**0**	**291**	9
10. Taung	93	107	**200**	0	0	**0**	0	0	**0**	0	0	**0**	**200**	13
11.Tompi Seleka	16	19	**35**	0	0	**0**	0	0	**0**	0	0	**0**	**35**	2
12. Tsolo	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
TOTAL	**519**	**353**	**872**	**86**	**27**	**113**	**641**	**108**	**749**	**3**	**2**	**5**	**1739**	**100**

Table 6 indicates that 4 out of the 12 colleges are predominantly African with no Coloured, White or Asian students at all. These colleges are Fort Cox, Glen, Taung and Tompi Seleka.

The data in Table 6 depicts that male enrolments constituted 72% (1249) of the total number of enrolled students in 2005 and female enrolments constituted 28% (490). White males dominated male enrolments at colleges of agriculture in the 2005 academic with 51% and African males constituted 42% (519). Coloured males accounted for 7% (86) and Indian males represented very low records of the total enrolments for the 2005 academic year.



* Note: There were no enrolments registered at Madzivhandila and Tsolo for the 2005 academic year

Figure 2 indicates that the difference in numbers between male enrolments and female enrolments in some colleges has been very high. For instance, there is a significant difference between male and female students with regards to numbers in Elsenburg, Lowveld, Cedara and Grootfontein.

The trends in Figure 2 indicate that the number of male enrolments in the agricultural colleges is generally higher than that of female enrolments in the 2005 academic year. The figures also depict that the colleges that are regarded as historically African colleges in terms of their student attraction, have so far failed to attract other racial groups in their student list. This is a continued trend from the 2004 academic year.

A significant number of male students have been enrolled at colleges in the 2005 academic year. Five (5) colleges i.e. Elsenburg, Lowveld, Cedara, Grootfontein and Glen enrolled more male students in comparison to their female students,

however, female student enrolments are significant and comparable to male enrolments at some of these colleges. For instance Elsenburg and Owen Sitole colleges registered 102, 19 and 37 female students respectively. Female students dominated enrolments in Tompi Seleka College of Agriculture for the 2005 academic year.

Table 7: Breakdown of enrolments per programme

COLLEGES	NUMBER OF ENROLMENTS						
	NQF 1-4 (Including N1-N2)	CERTIFICATE (Including N3)	HEC (Including N4-N5)	DIPLOMA	DEGREE	TOTAL	%
Cedara	0	0	135	30	0	**165**	10
Elsenburg	0	0	103	82	225	**410**	25
Fort Cox	0	0	0	48	0	**48**	3
Glen	0	0	134	38	0	**172**	11
Grootfontein	0	0	111	30	0	**141**	9
Lowveld	0	62	94	61	0	**217**	14
Madzivhandila	0	0	0	0	0	**0**	0
Owen Sitole	0	0	0	60	0	**60**	4
Potchefstroom	0	0	0	291	0	**291**	9
Taung	0	69	90	41	0	**200**	13
Tompi Seleka	0	0	0	35	0	**35**	2
Tsolo	0	0	0	0	0	**0**	0
Total	**0**	**131**	**667**	**716**	**225**	**1739**	**100**

The data in Table 7 depict that Diplomas constitute 41% (716) of the total number of enrolled students per programme in 2005 and Higher Education Certificate level account for 38% (667). Degrees continued to record very low records of students per programme, at colleges and this trend continues from the 2004 academic year. For the 2005 academic year students enrolled at Degree level at colleges constitute 16% (225). The least enrolments were from Certificate level (N3) with only 8% (131) of the total number of enrolled students for the 2005 academic year in Colleges of Agriculture. No students enrolled at N1-N2 for the 2005 academic year.

2.5 Number of people registering and completing short courses during 2005

Table 8 presents the number people registered and completed short courses per college. Madzivhandila has a learnership programme, which is offered according to demand and is accredited by AgriSETA. The programme consist of Animal Production and Plant Production and runs for a period of 8 months (32 weeks). Refer to the table for number of beneficiaries per college.

Table 8: Breakdown of people registered and completing in short courses by gender and race

Name of the college	African				Coloured			White			Asian			Total	%
	M	F	U	T	M	F	T	M	F	T	M	F	T		
1. Cedara	*	*	472	**472**	*	*	*	*	*	**79**	*	*	**10**	**561**	9
2. Elsenburg	215	157	0	**372**	782	322	**1104**	15	64	**79**	0	0	**0**	**1555**	26
3. Fort Cox	11	6	0	**17**	0	0	**0**	0	0	**0**	0	0	**0**	**17**	0
4. Glen	218	126	222	**566**	0	0	**0**	0	0	**0**	0	0	**0**	**566**	9
5. Grootfontein	451	19	0	**470**	66	18	**84**	26	30	**56**	0	0	**0**	**610**	10
6. Lowveld	0	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
7. Madzivhandila	177	282	0	**459**	0	0	**0**	0	0	**0**	0	0	**0**	**459**	7
8. Owen Sitole	331	721	0	**1052**	0	0	**0**	0	0	**0**	0	0	**0**	**1052**	17
9. Potchefstroom	90	38	0	**128**	1	0	**1**	2	3	**5**	0	0	**0**	**134**	2
10. Taung	0	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	**0**

Table 8: Breakdown of people registered and completing in short courses by gender and race															
Name of the college	African				Coloured			White			Asian			Total	%
	M	F	U	T	M	F	T	M	F	T	M	F	T		
11. Tompi Seleka	344	573	0	**917**	0	0	**0**	0	0	**0**	0	0	**0**	**917**	**15**
12. Tsolo	147	157	0	**304**	0	0	**0**	0	0	**0**	0	0	**0**	**304**	**5**
TOTAL	**1984**	**2079**	**694**	**4757**	**849**	**52**	**1189**	**41**	**97**	**219**	**0**	**0**	**10**	**6175**	**100**

*Information not available

Elsenburg, Owen Sitole, Tompi Seleka and Grootfontein enrolled more students at short courses than any college, with 26% (1555), 17% (1052), 15% (917) and 10% (610) respectively. African students enrolled at short courses constituted 77% followed by Coloured students with 19% and Whites amounted to 4%. Asian students were almost non-existent. Male students dominated with 89% and females amounted to 11% only of the short courses enrolments.

2.6 Graduate outputs at Colleges of Agriculture

Madzivhandila had last graduates in the 2005 academic year and enrolled no new students as they are in a process of changing their curriculum, i.e. phasing out the NQF levels 4-5 programmes, and focusing on short courses and learnerships at FET and GET programmes.

Table: 9 Graduates per College of Agriculture.		
Name of the college	Number of graduates	Percentage (%)
1. Cedara College of Agriculture	54	9
2. Elsenburg College of Agriculture	78	12
3. Fort Cox College of Agric & Forestry	47	7
4. Glen College of Agriculture	52	8
5. Grootfontein Agricultural Development Institute.	71	11
6. Lowveld College of Agriculture	75	12
7. Madzivhandila College of Agriculture	43	7
8. Owen Sitole College of Agriculture	85	13
9. Potchefstroom College of Agriculture	60	9
10 Taung College of Agriculture	49	8
11 Tompi Seleka College of Agriculture	24	4
12 Tsolo Agricultural and Rural Development Institution	0	0
TOTAL	**638**	**100**

Six hundred and thirty eight (638) students graduated from the Agricultural colleges in the 2005 academic year, African students were the largest group of graduates and comprised 51%. White students constituted 45% of the total graduates and the other racial groups constituted the remaining 4%. Male graduates outnumbered female enrolments and graduates, on a ratio of about 1:3. Owen Sitole produced more graduates than any other college at 13% followed by Elsenburg and Lowveld with 12% each of the total graduates produced in colleges in the 2005 academic year. Grootfontein graduates amounted to 11% of the total graduates in colleges. The remaining colleges produced less than 10% of the graduates each.

It is expected that colleges with large enrolment figures of students produce at least a significant number of graduates when compared to those that enrolled few students. This is not the case at all because when looking at Figure 3 Owen Sitole trained more graduates than any other college.

Figure 3: Graduates per college of agriculture

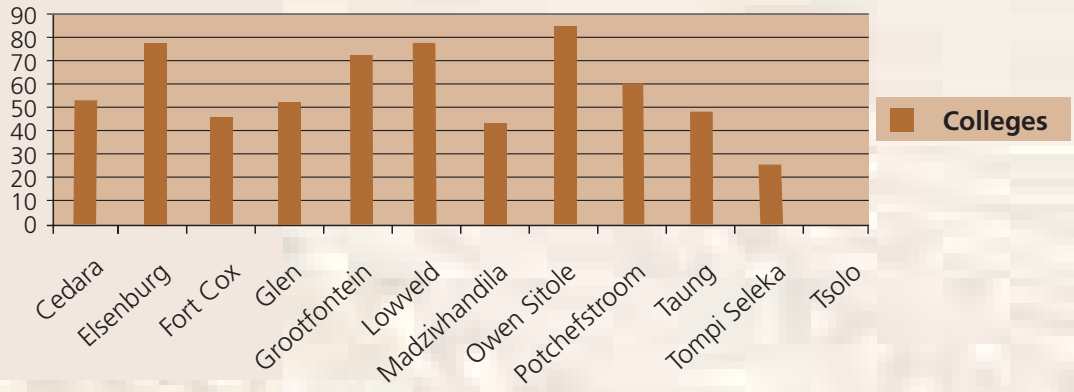


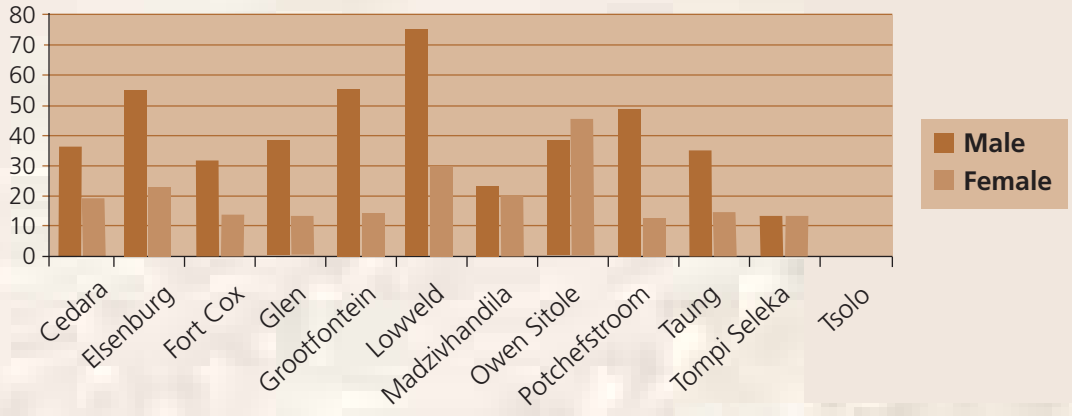
Table 10: Breakdown of graduates by gender and race

Name of the college	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
1. Cedara	13	13	**26**	0	0	**0**	21	5	**26**	2	0	**2**	**54**	9
2. Elsenburg	8	2	**10**	48	20	**68**	0	0	**0**	0	0	**0**	**78**	12
3. Fort Cox	31	16	**47**	0	0	**0**	0	0	**0**	0	0	**0**	**47**	7
4. Glen	38	14	**52**	0	0	**0**	0	0	**0**	0	0	**0**	**52**	8
5. Grootfontein	3	3	**6**	3	0	**3**	50	12	**62**	0	0	**0**	**71**	11
6. Lowveld	28	10	**38**	0	0	**0**	34	3	**37**	0	0	**0**	**75**	12
7. Madzivhandila	24	19	**43**	0	0	**0**	0	0	**0**	0	0	**0**	**43**	7
8. Owen Sitole	38	47	**85**	0	0	**0**	0	0	**0**	0	0	**0**	**85**	13
9. Potchefstroom	4	3	**7**	1	0	**1**	44	8	**52**	0	0	**0**	**60**	9
10. Taung	34	15	**49**	0	0	**0**	0	0	**0**	0	0	**0**	**49**	8
11. Tompi Seleka	12	12	**24**	0	0	**0**	0	0	**0**	0	0	**0**	**24**	4
12. Tsolo	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	0
TOTAL	**233**	**154**	**387**	**52**	**20**	**72**	**149**	**28**	**177**	**2**	**0**	**2**	**638**	**100**

The data in Table 10 depict that male graduates dominate with 68% (436) of the total number of graduates overall and female graduates constitute 32% (202). African females dominated the female graduate population.

As indicated in Table 10, African females continued the trend of being the most enrolled among females and they are incomparable to other female graduates from other racial groups. African males dominated with 54% (233), followed by White males with 34% (149) and Coloured males with 12% (52). Only 2 Asian male graduates were produced at colleges for the entire 2005. However some institutions like Lowveld College indicated that they classified both their Coloured and Asian students under Africans.

Figure 4: Breakdown of graduates by gender



As depicted in figure 4, it is evident that 3 out of 4 colleges that have produced 70 and above graduates, have their graduation figures dominated by males and these are, by order of highest graduates produced, Elsenburg, Lowveld and Grootfontein.

Table 11: Breakdown of graduates per programme

College	Number of graduates					
	NQF 1-4 (including N1-N2)	Cert (including N3)	HEC (including N4-N5)	Diploma (including N6)	Degree	Total
1. Cedara	0	0	31	23	0	**54**
2. Elsenburg	0	0	78	0	0	**78**
3. Fort Cox	0	0	0	47	0	**47**
4. Glen	0	0	25	27	0	**52**
5. Grootfontein	0	0	48	23	0	**71**
6. Lowveld	0	0	43	32	0	**75**
7. Madzivhandila	0	0	0	43	0	**43**
8. Owen Sitole	0	0	42	43	0	**85**
9. Potchefstroom	0	0	23	37	0	**60**
10. Taung	1	0	32	16	0	**49**
11. Tompi Seleka	0	0	0	24	0	**24**
12. Tsolo	0	0	0	0	0	**0**
Total	**1**	**0**	**322**	**315**	**0**	**638**

The data in Table 11 depict that Higher Education Certificates constituted 51% (322) of the total number of graduates produced per programme in 2005, followed by Diploma with 49% (315). One (1) student was produced at NQF 1 to 4 at colleges in the 2005 academic year and there were no Degree graduates.

2.7 CONCLUSION

The number of enrolments in the Colleges of Agriculture increased from 1461 in 2004 to 1739 in 2005. On the other hand, graduate figures decreased from 668 in 2004 to 638 in 2005. As was the case in the 2004 academic year, Whites and Africans dominated enrolments in the Colleges of Agriculture. However, in comparison to 2004 college enrolments, there is a slight decrease in the number of African enrolments and a slight increase in the number of white enrolments in 2005. African enrolments decreased from 888 in 2004 to 872 in 2005, while White enrolments increased from 528 in 2004 to 749 in 2005.

There is a noticeable increase in both the number of Coloured enrolments and graduates in the Colleges of Agriculture in 2005 in comparison to 2004. Coloured enrolments increased from 43 in 2004 to 113 in 2005, while Coloured graduate figures increased from 29 in 2004 to 72 in 2005. This is a positive sign that some of the interventions to recruit Coloureds in the agriculture sector are making an impact. On the other hand Asians are still largely underrepresented in all the Colleges of Agriculture.

The general trend from the 2004 and 2005 figures, males dominate both the enrolments and graduate figures. However, compared to the 2004 figures, there is a 10% decrease in male enrolments and a 7% increase in female enrolments in 2005 academic year.

Cedara, Elsenburg, Grootfontein, Lowveld and Potchefstroom attracted students from more than one racial group while other colleges continued to enroll students from one racial group. Madzivhandila had introduced learnerships in the process of phasing out the old curricula.

In the 2005 academic year, in addition to the Diploma and Higher Certificate Programmes offered by the Colleges of Agriculture, almost all the agricultural colleges have introduced many short courses at General Education and Training (GET) and Further Education and Training (FET) levels compared to the 2004 academic year. The short courses offered by the colleges are more demand driven and are aimed at addressing the needs of the farming community and LRAD beneficiaries in their respective locations. Some of the short courses are accredited and others are not. The non-accredited programmes are offered in the form of short courses, which is more of information sharing rather than competency based and as such the participants receive certificates of attendance only.

Most of the beneficiaries and participants in the short courses are Africans, and very few participants are from other racial groups. Some colleges have reported that they did not keep statistics of the trainees who participated on these programmes, and others have statistics, but no demographic breakdown of the participants in the short courses. From the information gathered, a record of 6175 students enrolled on short courses in the 2005 academic year and this figure might be far greater considering that some of the colleges do not keep statistics of the number of participants in short courses. It is therefore crucial that all the colleges should keep a database of the beneficiaries and participants in these programmes in order to be able to evaluate the impact of the programmes to the socio economic situation of the beneficiaries at a later stage. This shall also help to inform the decision making on the implementation of the skills programmes by colleges.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Chapter 3

Agricultural education and training at universities of technology during the 2005 academic year

Chapter 3

AGRICULTURAL EDUCATION AND TRAINING AT UNIVERSITIES OF TECHNOLOGY DURING THE 2005 ACADEMIC YEAR

3.1 INTRODUCTION

There are 5 Universities of Technology offering the AET programmes in South Africa. The agricultural programmes offered at these institutions range through the HET band from NQF level 5 to NQF level 8. i.e. from Certificate to a Doctor of Technology (DTech). This chapter presents the programmes offered at higher education institutions and the demographic breakdown of agricultural enrolments and graduates.

The Universities of Technology offering AET programmes in South Africa are Cape Peninsula University of Technology (CPUT), Central University of Technology, Free State (CUT), Mangosuthu Technikon (MANTEC), Nelson Mandela Metropolitan University (NMMU) and Tshwane University of Technology (TUT).

3.2. AET Programmes and National Qualification Framework offered at Universities of Technology in 2005

Table 12: Types of Agricultural Programmes offered in University of Technology.

	Cape Peninsula University of Technology	Central University of Technology Free State	Nelson Mandela Metropolitan	Mangosuthu Technikon	Tshwane University of Technology
National Certificate programmes					
N.Certificate Agriculture Animal Production					X
N.Certificate Agriculture Crop Science					X
N.Certificate Agricultural Management Crop Science					X
N.Certificate Game Ranch Management					X
N.Certificate Horticulture					X
N.Certificate Nature Conservation					X
N.Certificate Landscape Technology					X
N.Certificate Turf grass Management					X
National Higher Certificate Programmes					
N.H.Certificate Agriculture Animal Production					X
N.H.Certificate Agriculture Crop Science					X
N.H.Certificate Agricultural Management Crop Science					X
N.H.Certificate Game Ranch Management					X
N.H.Certificate Nature Conservation					X
National Diploma programmes					
NDip. Agriculture	X				X
NDip. Animal Health					
NDip. Agriculture Crop Production					X
NDip. Agriculture Crop Science					X
NDip. Agriculture Mixed Farming					X
NDip. Agriculture Rural Development					X

	Cape Peninsula University of Technology	Central University of Technology Free State	Nelson Mandela Metropolitan	Mangosuthu Technikon	Tshwane University of Technology
NDip. Agricultural Management	X	X	X		X
NDip. Agriculture Animal Production				X	X
NDip. Agriculture Plant Production				X	
NDip. Agriculture Equine Science					X
NDip. Agriculture Horticulture					X
NDip. Landscape Technology					X
NDip. Nature Conservation					X
NDip. Turf grass Management					X
National Higher Diploma programmes					
N.H.Dip. Pig Production					X
BTech. Programmes					
BTech. Agriculture	X	X			X
BTech. Agricultural Management			X		X
BTech. Agricultural Science					
BTech. Agriculture Animal Production					X
BTech. Agriculture Crop Production					X
BTech. Agriculture Mixed Farming					X
BTech. Agriculture Rural Development					X
BTech. Agriculture Animal Health					
BTech. Game Ranch Management					X
BTech. Agriculture Horticulture					X
BTech. Landscape Technology					X
BTech. Nature Conservation					X
BTech. Turf grass Management					X
MTech. Programmes					
MTech. Agriculture					X
MTech. Nature Conservation					X
DTech. programmes					
DTech. Agriculture					X
DTech. Agriculture Animal Production					X
DTech. Nature Conservation					X

All the Universities of Technology offer few agricultural programmes like Agriculture Management from Diploma to BTech level, with the exception of TUT, which offers programmes up to DTech level. Historically African institutions have curricula focused on skills that are less in demand in the public sector's agriculture labour market. i.e. General Agriculture and Agriculture Management qualifications with no focus on agricultural Scarce Skills such as Agricultural Economics, Agricultural Engineering, Viticulture, and Veterinary Science.

There is a high probability that graduates qualifying in these programmes might not get employment. However, in the private sector, the situation with regard to the demand for agricultural graduates with these qualifications might be different since research has not focused in this area.

Table 12 indicates the types of agricultural programmes offered by individual Universities of Technology. As depicted in table 12, TUT offers a wide range of agricultural programmes on a broad curriculum that is divided into four main streams namely: Horticulture, Crop Science, Nature Conservation and Animal Science.

Table 13: NQF levels at Universities of Technology		
NQF level	**Band**	**Types of qualification and certificates**
8	Higher Education and Training Band	Doctorate/ further research degree
7		Higher degree/professional qualifications
6		First degree/ higher diplomas
5		Diplomas/occupational certificates

Coordination of Agricultural Higher Education at Universities of Technology has been more progressive considering the transformation made as far as regulation is concerned. All the agricultural programmes offered at either of these Universities of Technology have their standards monitored, certified and registered under the NQF. Table 13 presents the programme levels together with NQF levels at which the programmes are rated (Department of Agriculture, 2005). The NQF levels determine the programme levels at each University of Technology, which range between NQF level 5, which is a Higher Certificate, and NQF level 8, which is the DTech.

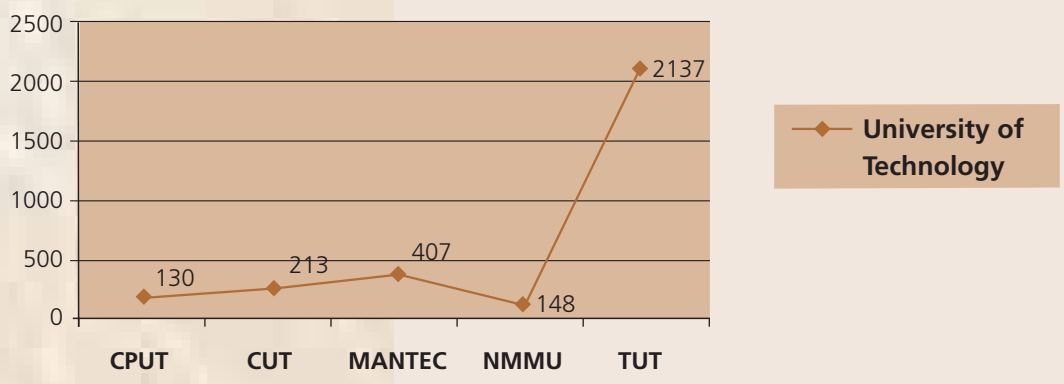
3.3 Enrolments in AET Programmes at Universities of Technology during 2005

Table 14: Enrolments per University of Technology during the 2005 academic year		
University of technology	**Enrolment figures**	**Percentage (%)**
CPUT	130	4
CUT	213	7
MANTEC	407	13
NMMU	148	5
TUT	2137	71
Total	**3035**	**100**

Table 14 depicts enrolment figures at Universities of Technology during the 2005 academic year. TUT enrolled 70% of the total enrolments followed by Mantec with 13% and CUT with 7%. NMMU and CPUT all have lowest enrolment figures with 5% and 4% respectively.

Table 14 and Figure 5 depict a significant difference between TUT and the rest of the Universities of Technology in terms of student intake. The highest enrolment figures at TUT might be attributed to the many programmes offered by the institution as compared to fewer programmes offered by the other Universities of Technology. Out of 3 035 agricultural enrolments registered nationally at Universities of Technology 2 137 students are registered with TUT, which is 70% of all the enrollments in University of Technology.

Figure 5: Enrolments at universities of technology



3.3.1 Demographic Breakdown of AET Enrolments at Universities of Technology in 2005

Table 15 presents a demographic breakdown of AET enrolments by Universities of Technology during the 2005 academic year.

Table 15: Demographic Breakdown of AET enrolments at Universities of Technology during the 2005 academic year.

University of technology	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
CPUT	1	3	**4**	8	2	**10**	111	5	**116**	0	0	**0**	**130**
CUT	85	56	**141**	0	0	**0**	69	3	**72**	0	0	**0**	**213**
MANTEC	236	171	**407**	0	0	**0**	0	0	**0**	0	0	**0**	**407**
NMMU	87	47	**134**	2	1	**3**	11	0	**11**	0	0	**0**	**148**
TUT	603	900	**1503**	3	4	**7**	224	402	**626**	1	0	**1**	**2137**
TOTAL	**1012**	**1177**	**2189**	**13**	**7**	**20**	**415**	**410**	**825**	**1**	**0**	**1**	**3035**
%	33	38	**71**	0.4	0.2	**1**	14	14	**28**	0	0	**0**	**100**

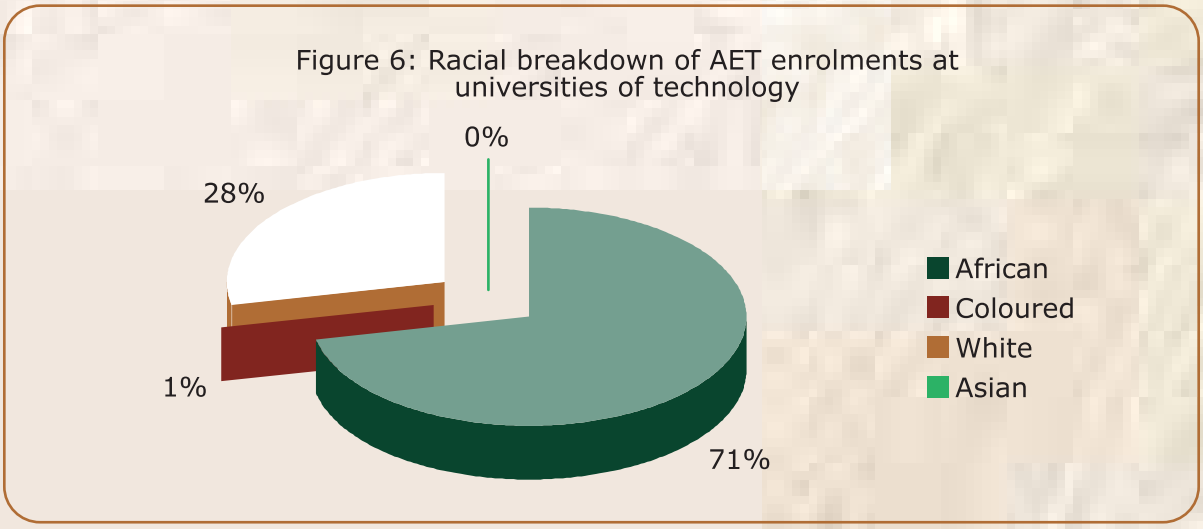


Table 15 and Figure 6 depict that African and White students have higher enrolments constituting 71% and 28% of the total enrolments respectively. Coloured and Asian students collectively constituted less than 2% of the total enrolments.

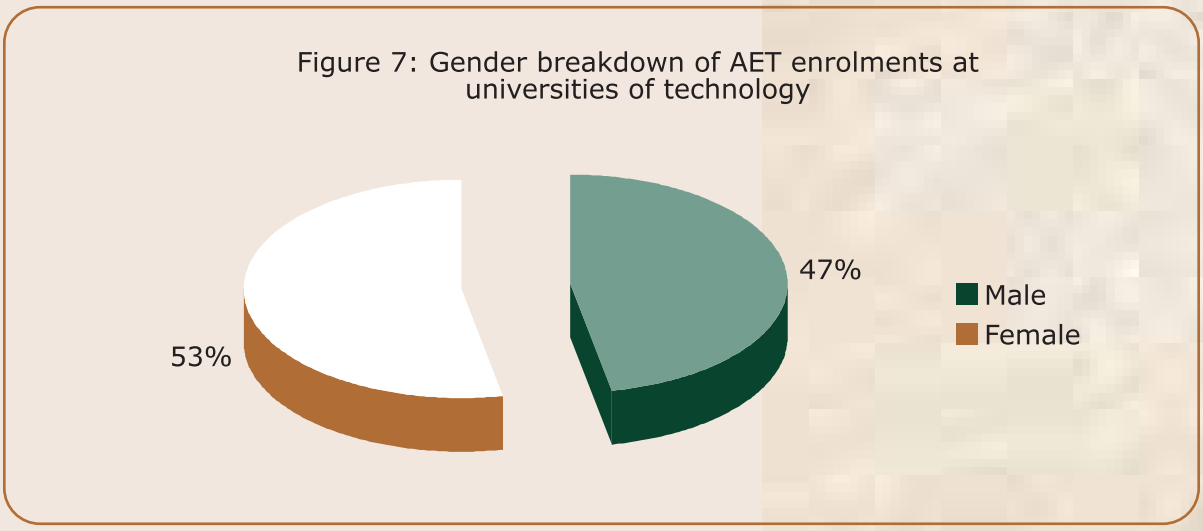


Figure 7 depicts that female students constituted 53% of the total enrolments and males constituted 47%.

Figure 8: Racial breakdown of female enrolments at universities of technology

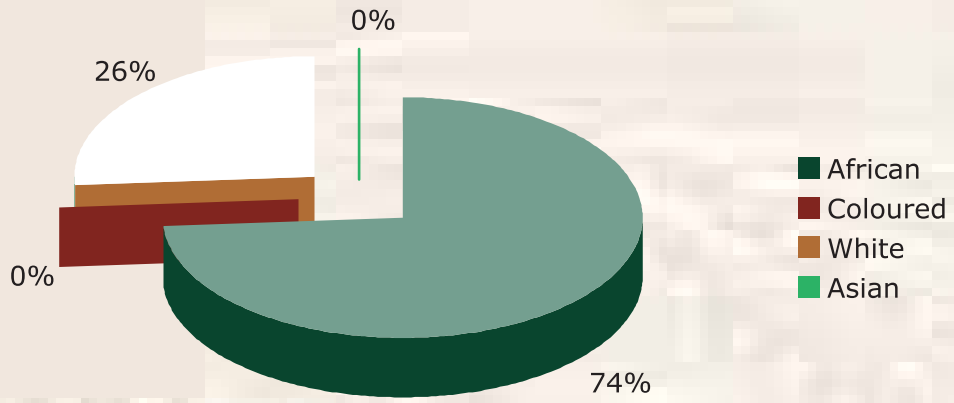


Figure 8 suggests that African female students constituted the highest enrolments with 74% of the overall female enrolments. Female students from other racial groups recorded the lowest number of student enrolments; White females constituted 26%. Coloured females accounted for less than 1%. Asian females are almost non-existent.

Figure 9: Racial breakdown of male enrolments at universities of technology

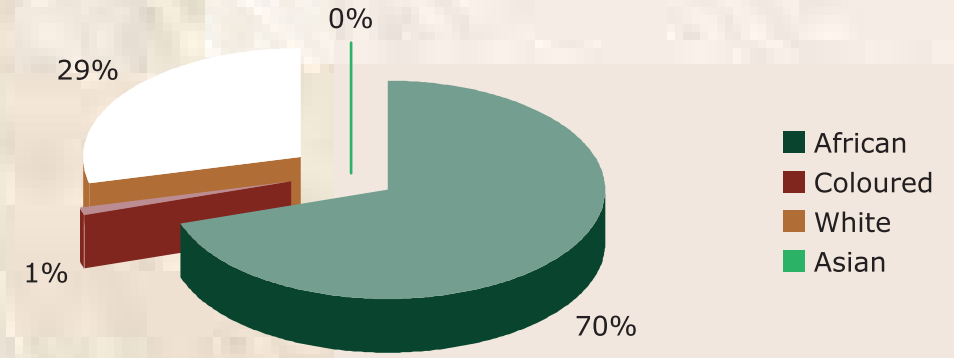


Figure 9 indicates that African males constituted 70% of the total male enrolments followed by White males with 29%. Coloured males accounted for 1% only. Asian males are almost non-existent.

3.3.2 AET Enrolments at Universities of Technology by Level of Qualifications & CESM in 2005

Table 16: Agricultural enrolments at Universities of Technology by CESM & levels of qualification

CESM	N. H. CER.	DIPLOMA	BTECH	MTECH	DTECH	TOTAL	%
Animal Science	2	843	96	0	1	**942**	**31**
Horticulture	0	141	22	5	0	**168**	**6**
Plant Science	0	212	29	0	0	**241**	**8**
Land Reclamation	0	80	10	0	0	**90**	**3**
Renewable Natural Resources		365	89	21	2	**477**	**15**
Agricultural Management	1	432	169	0	0	**602**	**19**
Other Agricultural & Renewable Resources	0	51	0	0	0	**51**	**2**
Wildlife	0	128	10	0	0	**138**	**5**
Agricultural Science-General	2	157	27	41	3	**230**	**8**
Agricultural Extension	0	49	47	0	0	**96**	**3**
TOTAL	**5**	**2458**	**499**	**67**	**6**	**3035**	
%	**0.5**	**81**	**16**	**2**	**0.5**		**100**

Table 16 shows enrolments at Universities of Technology by Categorisation of Education Subject Matter (CESM). Universities

of Technology offer programmes in the various CESMs as indicated above.

From Table 16 Animal Science, Agricultural Management and Renewable Natural Resources have the highest enrolment figures with 31%, 19% and 15% respectively. Other CESMs have registered less than 10% of enrolments each.

3.3.2.1 Demographic Breakdown of Agricultural Education and Training Enrolments at Universities of Technology by CESM & Levels of Qualification in 2005

Table 17: Demographic breakdown of Diploma enrolments by CESM at Universities of Technology

CESM Category (Diplomas)	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Animal Science	408	327	**735**	0	0	**0**	20	87	**107**	1	0	**1**	**843**	34
Horticulture	57	42	**99**	0	0	**0**	35	7	**42**	0	0	**0**	**141**	6
Plant Science	125	77	**202**	0	0	**0**	10	0	**10**	0	0	**0**	**212**	9
Land Reclamation	14	10	**24**	0	0	**0**	38	18	**56**	0	0	**0**	**80**	3
Renewable Natural Resources	152	79	**231**	1	1	**2**	79	53	**132**	0	0	**0**	**365**	15
Agricultural Management	169	125	**294**	5	3	**8**	128	2	**130**	0	0	**0**	**432**	18
Other Agricultural and Renewable Resources	23	12	**35**	0	0	**0**	16	0	**16**	0	0	**0**	**51**	2
Wildlife	18	4	**22**	0	0	**0**	93	13	**106**	0	0	**0**	**128**	5
Agricultural Science-General	49	44	**93**	1	1	**2**	60	2	**62**	0	0	**0**	**157**	6
Agricultural Extension	28	20	**48**	1	0	**1**	0	0	**0**	0	0	**0**	**49**	2
TOTAL	1043	740	**1783**	8	5	**13**	479	182	**661**	1	0	**1**	**2458**	
%	42	30	**72**	0.5	0.5	**1**	19	7	**27**	0	0	**0**		**100**

Table 17 depicts the enrolments for the Diploma programmes at Universities of Technology in 2005. Diploma enrolments constituted 81% of the total enrolments at Universities of Technology in 2005.

Africans contributed 72% of total number of diploma enrolments, followed by Whites with 27%. Coloured and Asian students together enrolled less than 2% of the total number of diploma students.

Table 18: Demographic breakdown of BTech enrolments by CESM at Universities of Technology

CESM Category (Diplomas)	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Animal Science	65	27	**92**	0	0	**0**	4	0	**4**	0	0	**0**	**96**	**19**
Horticulture	2	6	**8**	0	0	**0**	11	3	**14**	0	0	**0**	**22**	**4**
Plant Science	15	7	**22**	0	0	**0**	6	1	**7**	0	0	**0**	**29**	**6**
Land Reclamation	0	1	**1**	0	0	**0**	5	4	**9**	0	0	**0**	**10**	**2**
Renewable Natural Resources	27	8	**35**	2	1	**3**	26	25	**51**	0	0	**0**	**89**	**18**
Agricultural Management	86	64	**150**	1	0	**1**	17	1	**18**	0	0	**0**	**169**	**34**
Wildlife	0	0	**0**	0	0	**0**	8	2	**10**	0	0	**0**	**10**	**2**
Agricultural Science-General	6	2	**8**	3	0	**3**	13	3	**16**	0	0	**0**	**27**	**6**
Agricultural Extension	33	14	**47**	0	0	**0**	0	0	**0**	0	0	**0**	**47**	**9**
TOTAL	234	129	**363**	6	1	**7**	90	39	**129**	0	0	**0**	**499**	
%	47	26	**73**	1	0	**1**	18	8	**26**	0	0	**0**		**100**

Table 18 shows the enrolments for BTech programmes at Universities of Technology in 2005. BTech enrolments constituted 16% of the total enrolments at Universities of Technology in 2005.

Africans constitute 73% of the total number BTech enrolments during 2005 academic year at Universities of Technology, followed by Whites with 26%. Coloured students contributed 1% of the total BTech students. No Asian students enrolled for BTech programmes during the 2005 academic year at Universities of Technology.

Table19: Demographic breakdown of Postgraduates enrolments by CESM at Universities of Technology														
CESM Category (Postgraduate)	Africans			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
MTech (Horticulture)	1	0	**1**	0	0	**0**	1	3	**4**	0	0	**0**	**5**	7
MTech (Renewable Natural Resources)	5	0	**5**	0	0	**0**	11	5	**16**	0	0	**0**	**21**	29
MTech (Agricultural Science-General)	22	6	**28**	0	0	**0**	10	3	**13**	0	0	**0**	**41**	56
DTech (Animal Science)	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**	1
DTech (Renewable Natural Resources)	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**	3
DTech (Agricultural Science-General)	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	4
TOTAL	32	6	**38**	0	0	**0**	24	11	**35**	0	0	**0**	**73**	
%	44	8	**52**	0	0	**0**	33	15	**48**	0	0	**0**		**100**

Table 18 outlines enrolments at Postgraduate level in Agricultural programmes at Universities of Technology in 2005. Postgraduate enrolments constituted 2% of the total enrolments at Universities of Technology in 2005. Seventy three (73) students enrolled for Postgraduate Degrees in agricultural programmes in 2005, of which 67 were MTech and 6 were DTech students.

3.3.2.2 Animal Science Enrolments at Universities of Technology in 2005

This CESM at Universities of Technology includes Diploma, BTech, MTech and DTech in Animal Health, Animal Production, Pig Production Management, Equine Science, Production Physiology and Animal Production Management. Programmes in this CESM are offered by Mantec and TUT. There were 942 students enrolled in this CESM during the 2005 academic year.

Table 20 shows a demographic breakdown of Animal Science enrolments during the 2005 academic year by level of qualification.

Table 20: Demographic breakdown of Animal Science enrolments by level of qualification														
LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
National Higher Certificate	0	2	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**	0.5
Diploma	408	327	**735**	0	0	**0**	20	87	**107**	1	0	**1**	**843**	89
BTech	65	27	**92**	0	0	**0**	4	0	**4**	0	0	**0**	**96**	10
DTech	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**	0.5
TOTAL	473	356	**829**	0	0	**0**	25	87	**112**	1	0	**1**	**942**	
%	50	38	**88**	0	0	**0**	3	9	**12**	0	0	**0**		100

High numbers of Animal Science enrolments were evident in the BTech in Animal Science Diploma, which constitutes 89%. Animal Science BTech enrolments constituted only 10% of the total enrolments in this CESM. National Higher Certificate and DTech Animal Science enrolments are very low and the two programmes together account for 1% of the total number of Animal Science enrolments.

Figure 10: Racial breakdown of Diploma in Animal Science enrolments

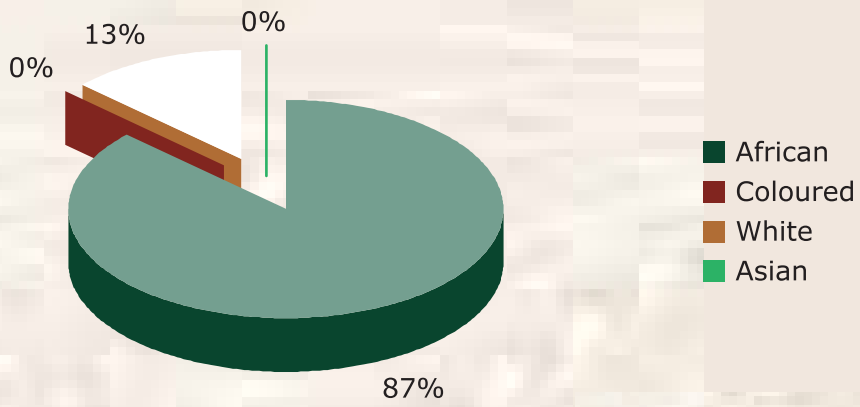


Figure 10 depicts that African and White students constituted 87% and 13% of the Animal Science diploma enrolments respectively. Asian students enrolment were insignificant.

Figure 11: Gender breakdown of Diploma in Animal Science enrolments

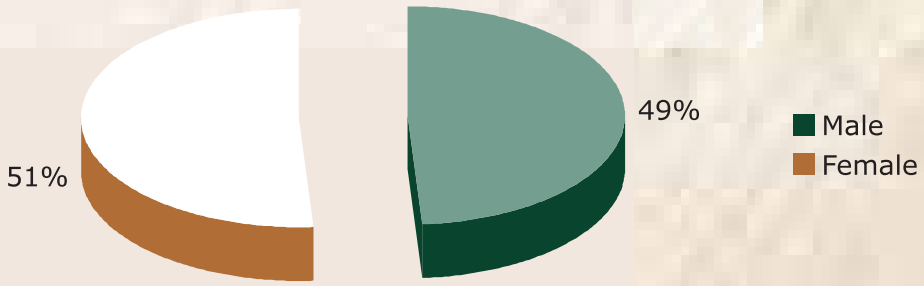


Figure 11 illustrates that male students dominated the diploma enrolments in this CESM with 51% while female students constituted only 49%. African males largely dominate male enrolments with 95% of the total male enrolments in the Diploma in Animal Science. White males constituted 5% and Coloured and Asian males collectively accounted for less than 1% of total number of diploma enrolments in Animal Science. African females constituted a significant 79% followed by White females with 21%.

Figure 12: Racial breakdown of BTech enrolments in Animal Science

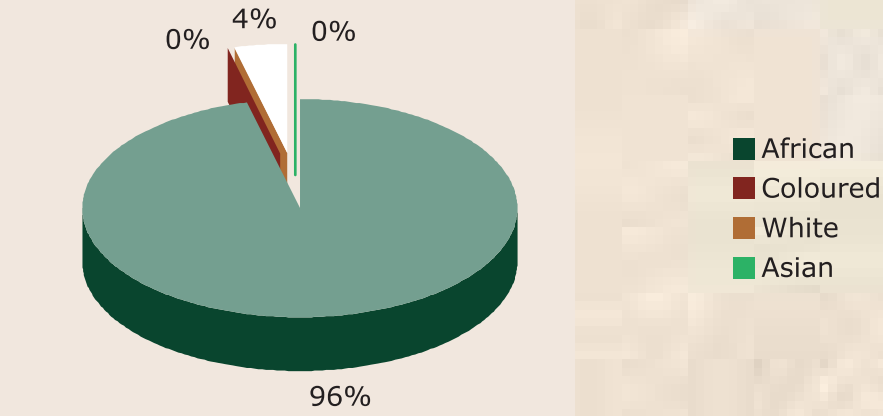


Figure 12 indicates that African students constituted the majority of BTech Animal Science enrolments with 96%. White students constituted only 4% and there are no Coloured and Asian students enrolled for the BTech Animal Science.

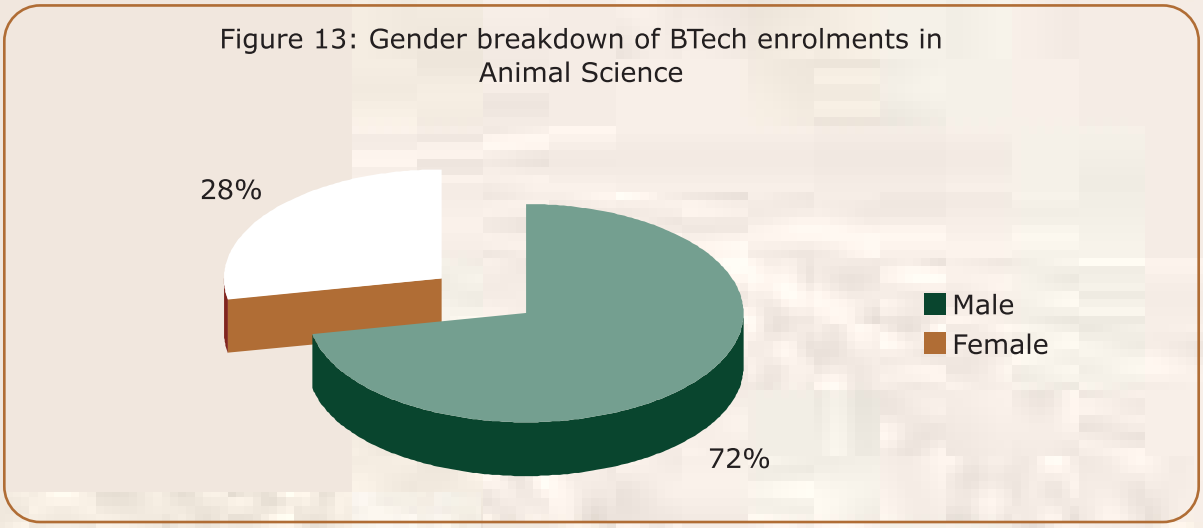


Figure 13 depicts that male students comprised 72% of the total BTech Animal Science enrolments and female students accounted for only 28%, of the overall BTech Animal Science enrolments. African males constituted 94% and White males constituted 6% of the enrolments for this programme. African females were the only females registered for BTech Animal Science during the 2005 academic year at Universities of Technology.

Only 1 White male student enrolled for DTech Animal Science in 2005 at Universities of Technology.

3.3.3.3 Horticulture Enrolments at Universities of Technology in 2005

Horticulture CESM at Universities of Technology includes Diploma, BTech, MTech and DTech in Horticulture. One hundred and sixty eight (168) students registered for Horticulture at Universities of Technology in 2005. The Horticulture CESM enrolments constituted 6% of the total AET enrolments at Universities of Technology during the 2005 academic year. TUT is the only University of Technology offering Horticulture programmes in South Africa.

Table 21 presents a demographic breakdown of Horticulture enrolments in 2005 academic year by level of qualification.

Table 21: Demographic breakdown of Horticulture enrolments by level of qualifications

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	57	42	**99**	0	0	**0**	35	7	**42**	0	0	**0**	**141**	84
BTech	2	6	**8**	0	0	**0**	11	3	**14**	0	0	**0**	**22**	13
MTech	1	0	**1**	0	0	**0**	1	3	**4**	0	0	**0**	**5**	3
TOTAL	60	48	**108**	0	0	**0**	47	13	**60**	0	0	**0**	**168**	
%	35	29	**64**	0	0	**0**	28	8	**36**	0	0	**0**		**100**

Table 21 illustrates that Diploma enrolments in Horticulture are the highest with 84% of the overall Horticulture CESM enrolments and BTech Horticulture comprised of 32 students, which was 13% of the total Horticulture enrolments during the 2005 academic year. MTech accounted for 3% of the total Horticulture enrolments during the 2005 academic year.

Figure 14: Racial Breakdown of Diploma enrolments in Horticulture

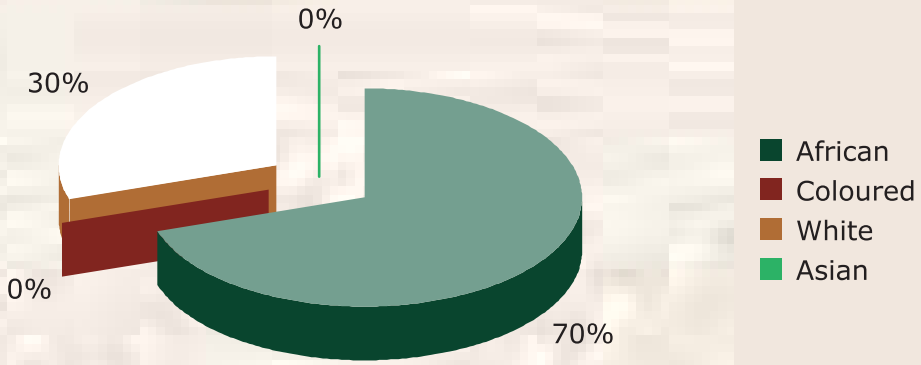


Figure 14 depicts that African students constituted 70% of the Diploma enrolments in Horticulture, followed by White students with 30%. No Asian and Coloured students registered for this programme during the 2005 academic year.

Figure 15: Gender breakdown of Diploma enrolments in Horticulture

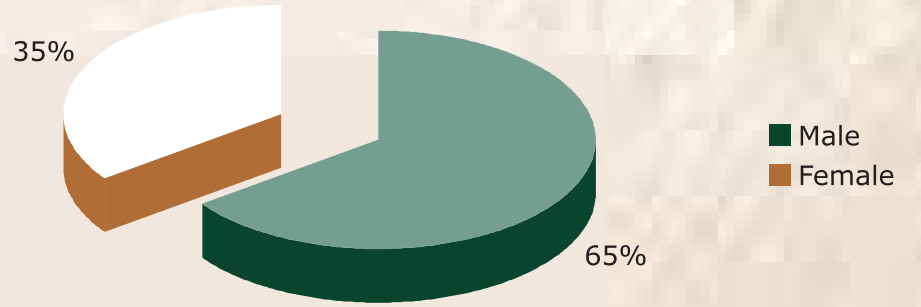


Figure 15 shows that male students dominated with 65% and female students constituted 35% of the Horticulture Diploma enrolments. African males dominated male enrolments with 62% followed by White males with 38%, and there are no Coloured and Asian enrolments.

African females dominated with 86% of the total number of Diploma enrolments in Horticulture followed by White females with 14%. There are no Asian and Coloured students registered for this programme during the 2005 academic year.

Figure 16: Racial breakdown of BTech enrolments in Horticulture

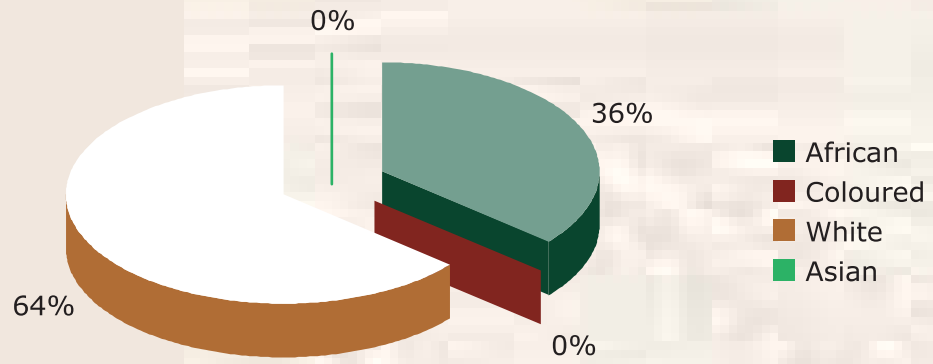


Figure 16 indicates that White students constitute 64% of the BTech Horticulture enrolments followed by African students with 36%. There were no Asian and Coloured enrolments for this programme during 2005.

Figure 17: Gender breakdown of BTech enrolments in Horticulture

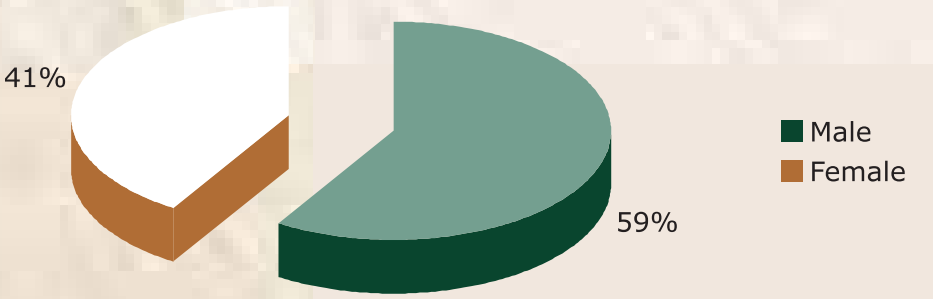


Figure 17 illustrates that male students dominated the BTech Horticulture enrolments with 59% and female students constituted 41%. Two (2) African males and 11 White males enrolled for BTech Horticulture during the 2005 academic year at Universities of Technology. Nine (9) female students registered for BTech Horticulture during the 2005 academic year at Universities of Technology, of which 6 were African and 3 were White.

Five (5) students registered for MTech Horticulture during the 2005 academic year; 1 was an African Male, 1 was a White male and 3 were White females.

3.3.2.4 Plant Science Enrolments at Universities of Technology in 2005

Plant Science CESM consists of Diploma, BTech, MTech and DTech in Crop Production and Plant Production. Two hundred and forty one (241) students registered for this programme in 2005, which constituted 8% of the total AET enrolments during 2005. There were only Diploma and BTech enrolments for this CESM at Universities of Technology.

Table 22 presents a demographic breakdown of Diploma in Plant Science enrolments in 2005 by level of qualification.

Table 22: Demographic breakdown of Plant Science Diploma enrolments at Universities of Technology in 2005

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	125	77	**202**	0	0	**0**	10	0	**10**	0	0	**0**	**212**	88
BTech	15	7	**22**	0	0	**0**	6	1	**7**	0	0	**0**	**29**	12
TOTAL	**140**	**84**	**224**	**0**	**0**	**0**	**16**	**1**	**17**	**0**	**0**	**0**	**241**	
%	58	35	**93**	0	0	**0**	7	0	**7**	0	0			100

Table 22 illustrates that enrolments in Diploma Plant Science accounted for 88% of the overall Plant Science CESM enrolments and BTech Plant Science comprised 12% of the total Plant Science enrolments.

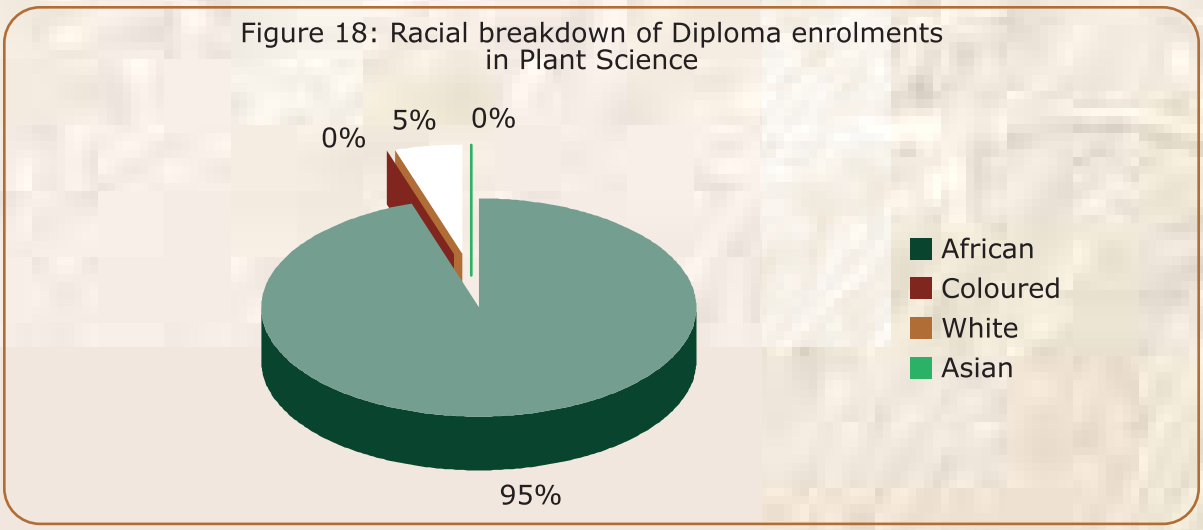


Figure 18 indicates that African students dominate with 95% of the Diploma Plant Science enrolments followed by White students with 5%. There were no Asian and Coloured enrolments for this programme during 2005.

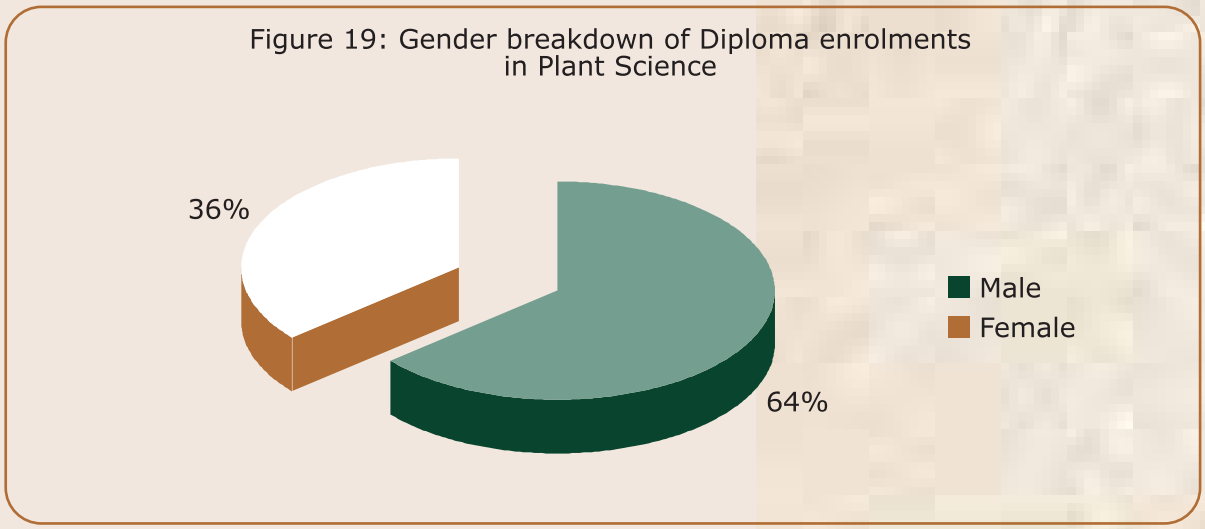


Figure 19 depicts that male students dominated the Diploma Plant Science enrolments with 64% and female students constituted 36%. African males dominated the enrolments of Diploma Plant Science with 93% followed by White male students with 7%. Seventy seven (77) African female students enrolled in Diploma Plant Science during the 2005 academic year at Universities of Technology. No female students from other racial groups enrolled in this programme in 2005.

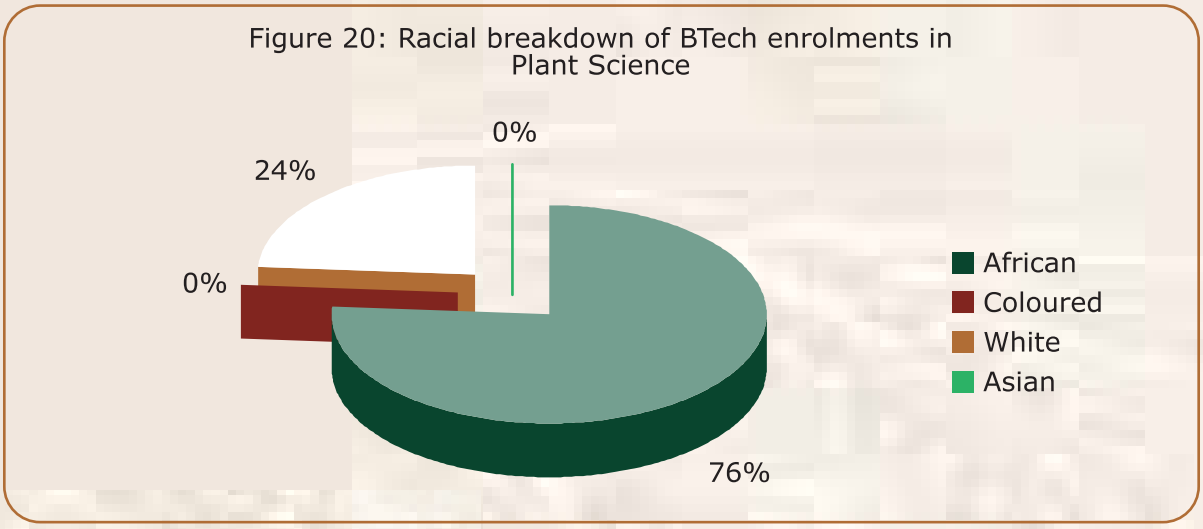


Figure 20 indicates that African students dominate with 76% of the BTech Plant Science enrolments followed by White students with 24%. There were no Asian and Coloured enrolments for this programme during the 2005 academic year.

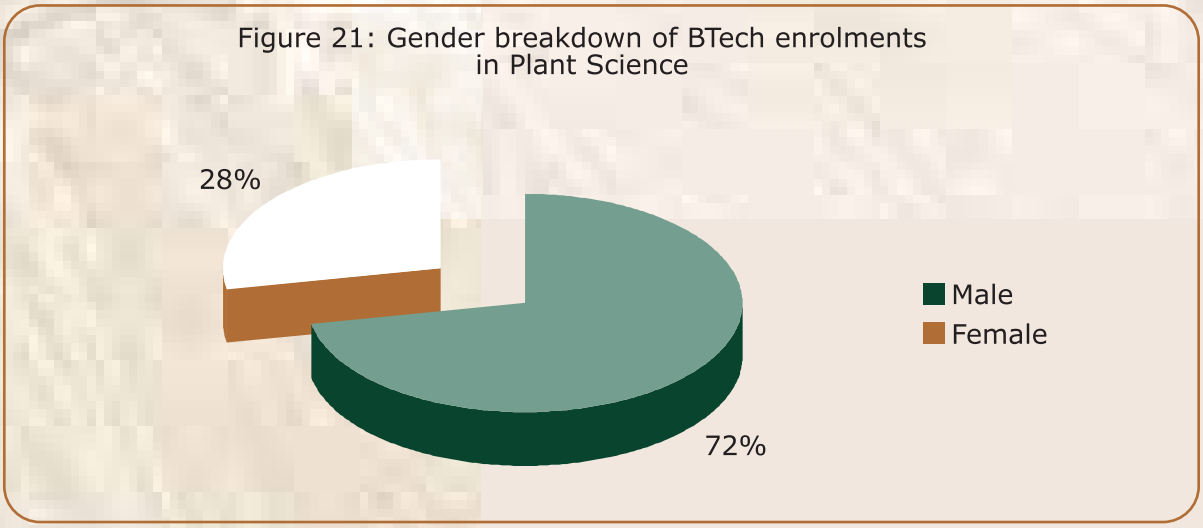


Figure 21 depicts that male students dominated the BTech Plant Science enrolments with 72% and female students constituted 28%. African males dominated the enrolments of BTech Plant Science with 71% followed by White male students with 29%. There are no Asian and Coloured male students registered for this programme during the 2005 academic year. Seven (7) African female students and 1 White female student enrolled for BTech in Plant Science during the 2005 academic year at Universities of Technology.

3.3.2.5 Agricultural Management Enrolments at Universities of Technology in 2005

Agricultural Management programmes are offered by CPUT, CUT, NMMU and TUT. Agricultural Management registered 602 students for the 2005 academic year. In Agricultural Management, students enrolled at Diploma and BTech levels only during the 2005 academic year. Table 23 shows a demographic breakdown of Agricultural Management enrolments during the 2005 academic year by level of qualification.

Table 23: Demographic breakdown of Agricultural Management enrolments by level of qualification

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
National Higher Certificate	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	0
Diploma	169	125	**294**	5	3	**8**	128	2	**130**	0	0	**0**	**432**	72
BTech	86	64	**150**	1	0	**1**	17	1	**18**	0	0	**0**	**169**	28
TOTAL	**255**	**190**	**445**	**6**	**3**	**9**	**145**	**3**	**148**	**0**	**0**	**0**	**602**	
%	42	32	**74**	1	0	**1**	25	0	**25**	0	0	**0**		100

Table 23 illustrates that enrolments in Diploma Agricultural Management accounted for 72% and BTech contributed 28% of the total number of Agricultural enrolments during the 2005 academic year at Universities of Technology.

Figure 22: Racial breakdown of Diploma enrolments in Agricultural Management

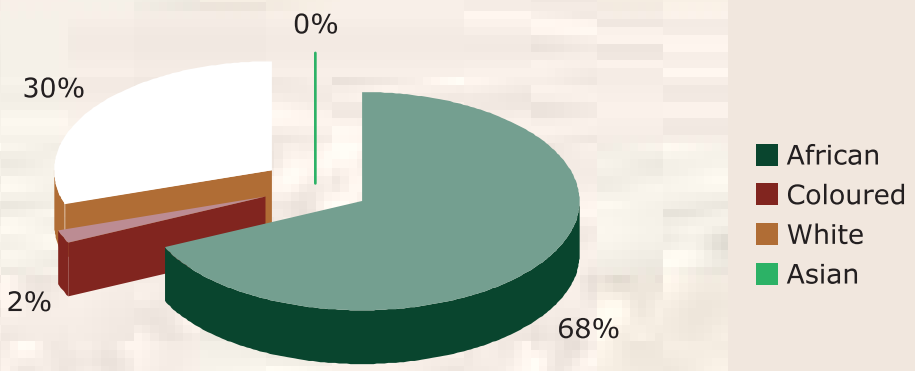


Figure 22 depicts that the majority of the enrolments at Diploma level in this CESM are African students who comprised 68% followed by White students with 30% and Coloured students constituted 2% only. No Asian students were registered at Diploma level in this CESM during the 2005 academic year.

Figure 23: Gender breakdown of Diploma enrolments in Agricultural Management

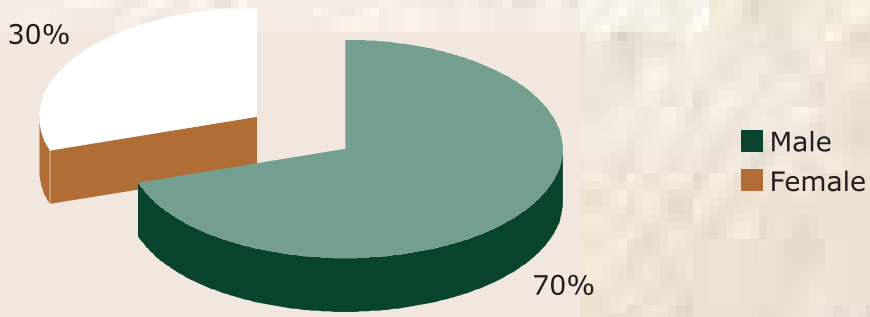


Figure 23 shows that male students dominated enrolments at the Diploma level in this CESM with 70% and female students constituted only 30%. African males accounted for 56% of the male enrolments at Diploma level in this CESM. White males comprised 42% of the male enrolments at Diploma level in this CESM followed by Coloured males with only 2%. African females dominated the female enrolments in this CESM at Diploma level with 96% followed by White and Coloured females with 2% each. No Asian females enrolled in this CESM at Diploma level.

Figure 24: Racial breakdown of BTech enrolments in Agricultural Management

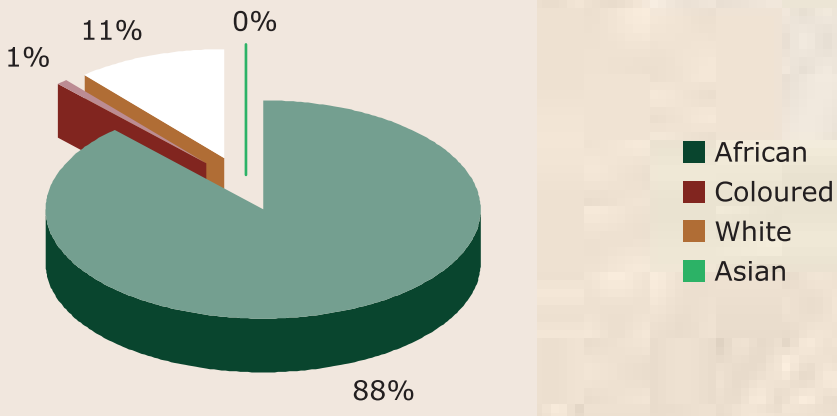


Figure 24 indicates that African students constitute 88% of the BTech Agricultural Management enrolments followed by White students with 11%. Coloured students constitute only 1% of the BTech enrolments in this CESM.

Figure 25: Gender breakdown of BTech enrolments in Agricultural Management

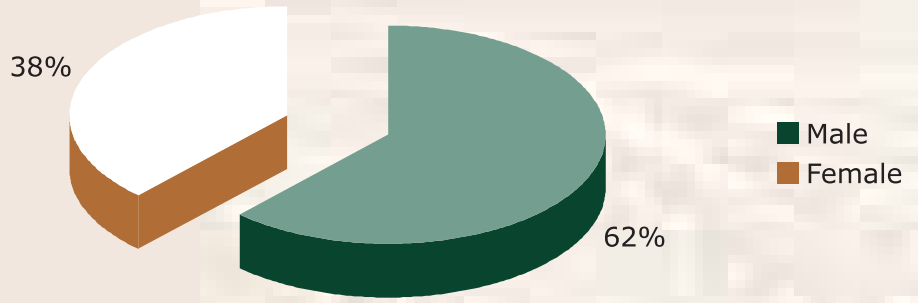


Figure 25 depicts that male students dominate the BTech Agricultural Management enrolments with 62% and female students constituted 38%. African males comprised 83% of the male enrolments at BTech level in this CESM followed by White males with 16%. Coloured males constitute only 1% of BTech male enrolments in this CESM. African females dominated the female enrolments in this CESM at BTech level with 98% followed by White females with 2%. No Asian and Coloured females were enrolled in this CESM at BTech level at Universities of Technology during the 2005 academic year.

3.3.2.6 Agricultural Science-General Enrolments at Universities of Technology in 2005

Agricultural Science-General CESM includes Diploma, BTech, MTech and DTech. Two hundred and thirty (230) students enrolled for Agricultural Science-General in 2005. Agricultural Science-General programmes at Universities of Technology are offered by CPUT, TUT, NMMU and CUT.

Table 24 shows a demographic breakdown of Agricultural Science-General enrolments during the 2005 academic year by level of qualification.

Table 24: Demographic breakdown of Agricultural Science-General enrolments by level of qualifications

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
National Higher Certificate	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**	**1**
Diploma	49	44	**93**	1	1	**2**	60	2	**62**	0	0	**0**	**157**	**68**
BTech	6	2	**8**	3	0	**3**	13	3	**16**	0	0	**0**	**27**	**12**
MTech	22	6	**28**	0	0	**0**	10	3	**13**	0	0	**0**	**41**	**18**
DTech	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	**1**
TOTAL	82	52	**134**	4	1	**5**	83	8	**91**	0	0	**0**	**230**	
%	36	23	**59**	2	0	**2**	36	3	**39**	0	0	**0**		100

Table 24 illustrates that enrolments in Diploma Agricultural Science-General accounted for 68% of the overall enrolments in this CESM, followed by MTech with 18% and BTech with 12%.

Figure 26: Racial breakdown of Diploma enrolments in Agricultural Science-General

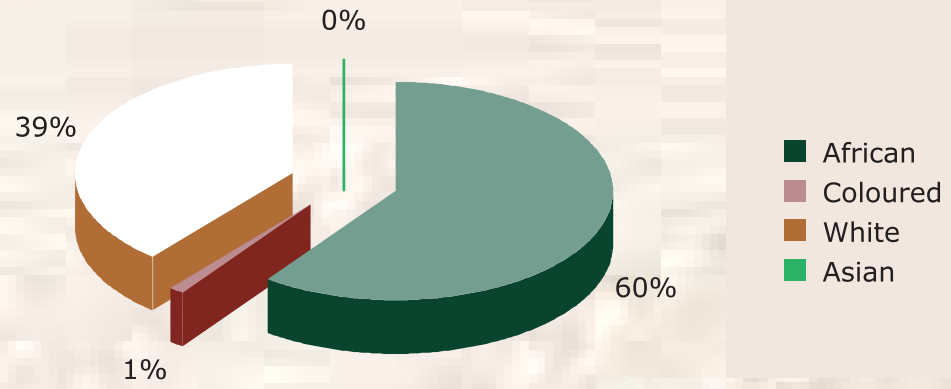


Figure 26 depicts that African students dominated the Diploma in Agricultural Science-General enrolments during 2005 with 60% followed by White students with 39% and Coloured students constituted 1%.

Figure 27: Gender breakdown of Diploma enrolments in Agricultural Science-General

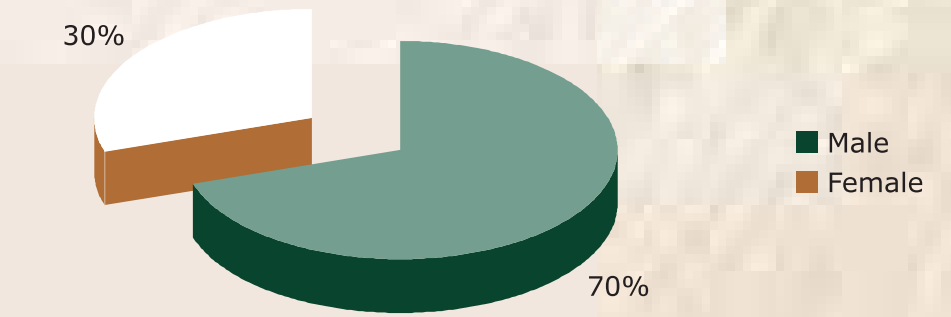


Figure 27 indicates that male students constituted 70% of the Diploma in Agricultural Science-General enrolments and female students accounted for 30%. White males have enrolled in higher numbers with 54% followed by African males with 45% and Coloured males with 1% of the total number of male Diploma students in this CESM. African female students dominated the Diploma Agricultural Science-General enrolments with 94%.

Figure 28: Racial breakdown of BTech enrolments in Agricultural Science-General

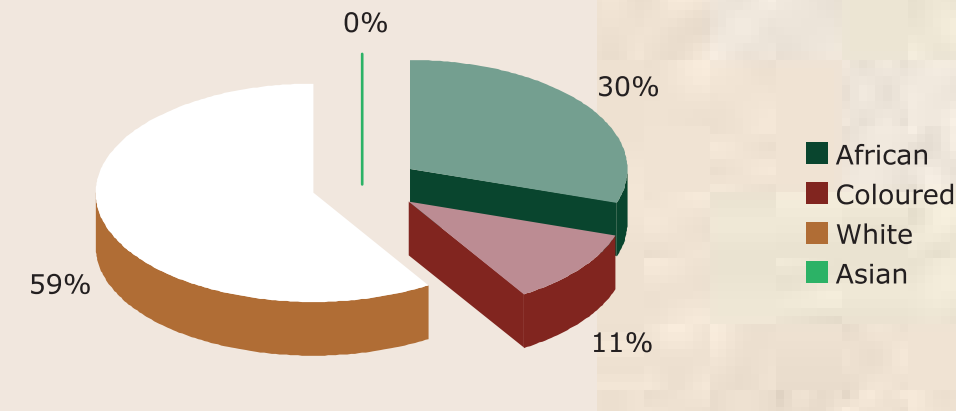


Figure 28 depicts that White students dominated the BTech Agricultural Science-General programme with 59%. African and Coloured students constituted 30% and 11% of the total BTech enrolments in this CESM during the 2005 academic year respectively.

Figure 29: Gender breakdown of BTech enrolments in Agricultural Science-General

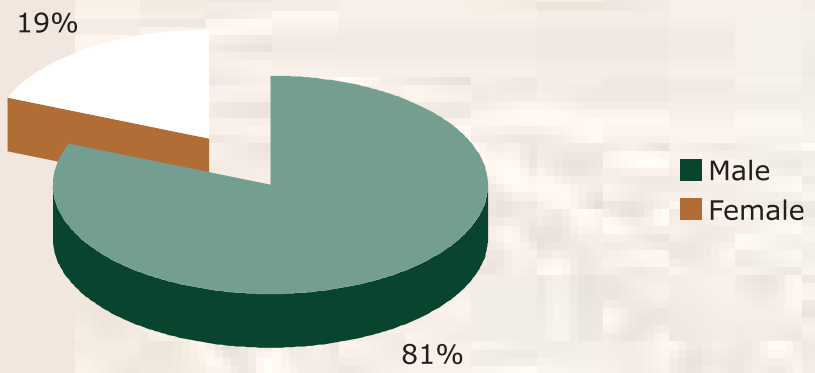


Figure 29 indicates that male students constituted 81% of the total BTech Agricultural Science-General enrolments and female students constituted 19%. White males represented the majority of male students in BTech Agricultural Science-General. Only 5 female students enrolled for BTech Agricultural Science-General during the 2005 academic year; 3 were White and 2 were African.

Figure 30: Racial breakdown of MTech enrolments in Agricultural Science-General

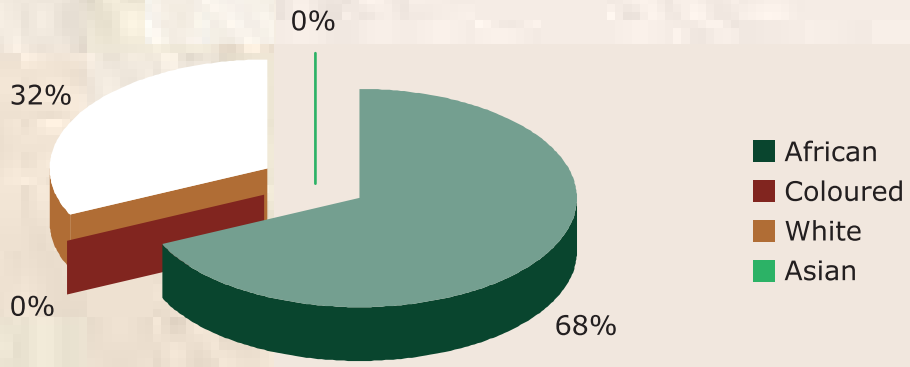


Figure 30 depicts that the MTech Agricultural Science-General programme was dominated by African students with 68% and White students constituted 32% of the total enrolments.

Figure 31: Gender breakdown of MTech enrolments in Agricultural Science-General

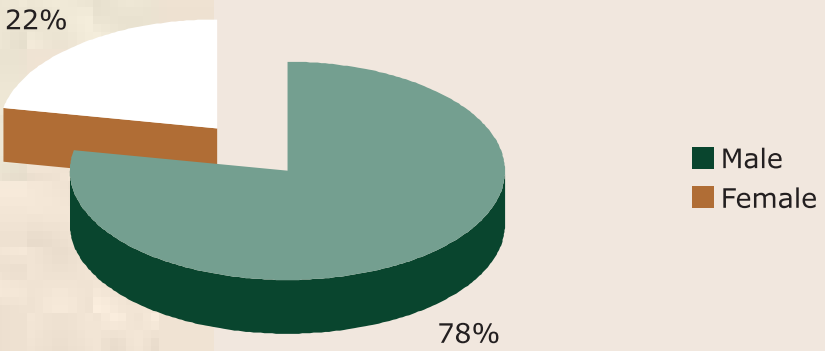


Figure 31 indicates that male students constituted 78% of the total MTech Agricultural Science-General enrolments and female students constituted 22%. African males represented the majority of male students registered for MTech in this CESM with 22 students and other 10 were White males. No Coloured and Asian male students were registered for this

programme during the 2005 academic year. Only 9 female students enrolled for the programme during the 2005 academic year; 6 were African and 3 were White.

Three (3) African male students enrolled for DTech Agricultural Science-General during the 2005 at universities of technology.

3.3.2.7 Renewable Natural Resources Enrolments at Universities of Technology

Renewable Natural Resources includes Diploma, BTech, MTech and DTech in Nature Conservation. TUT is the only University of Technology offering programmes in Renewable Natural Resources. Four hundred and seventy seven (477) students enrolled in this CESM during the 2005 academic year. Table 25 presents a demographic breakdown of Renewable Natural Resources enrolments during 2005 academic year by level of qualification.

Table 25: Demographic breakdown of Renewable Natural Resources enrolments by level of qualifications

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	152	79	**231**	1	1	**2**	79	53	**132**	0	0	**0**	**365**	77
BTech	27	8	**35**	2	1	**3**	26	25	**51**	0	0	**0**	**89**	19
MTech	5	0	**5**	0	0	**0**	11	5	**16**	0	0	**0**	**21**	4
DTech	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**	0
TOTAL	185	87	**272**	3	2	**5**	117	83	**200**	0	0	**0**	**477**	
%	39	18	**57**	1	0	**1**	25	17	**42**	0	0	**0**		100

Table 25 shows that Diploma constituted 77% of the total Renewable Natural Resources followed by BTech with 19% and MTech with 4%. DTech enrolments were very low in this programme, constituting less than 1%.

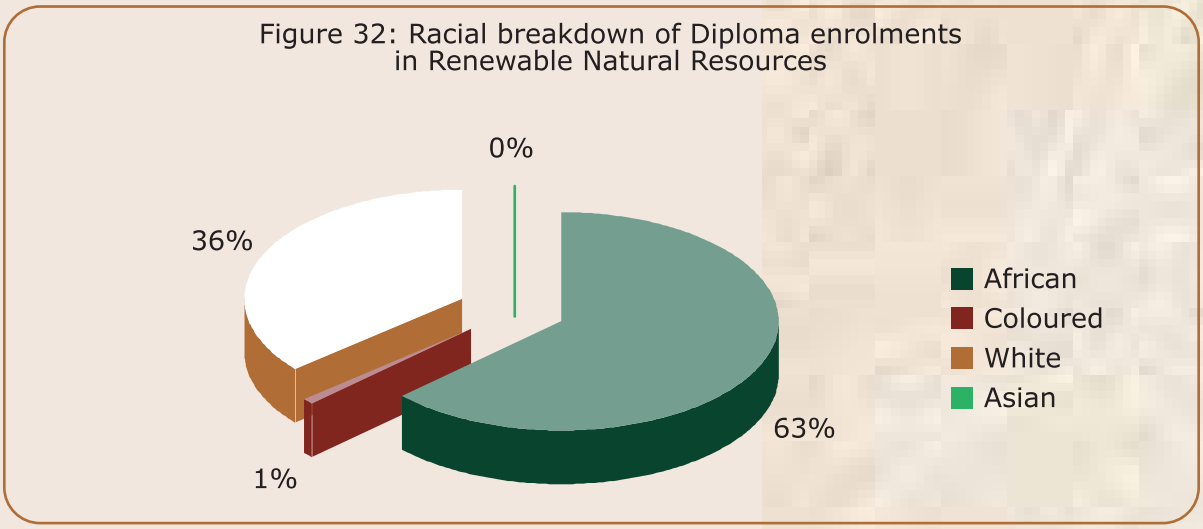


Figure 32 depicts that African students dominated the Diploma in Renewable Natural Resources enrolments with 63% followed by White students with 36%. Coloured students contributed only 1% of the total number of Diploma enrolments in this CESM during the 2005 academic year. There were no Asian students enrolled for the programme during the 2005 academic year.

Figure 33:Gender breakdown of Diploma enrolments in Renewable Natural Resources

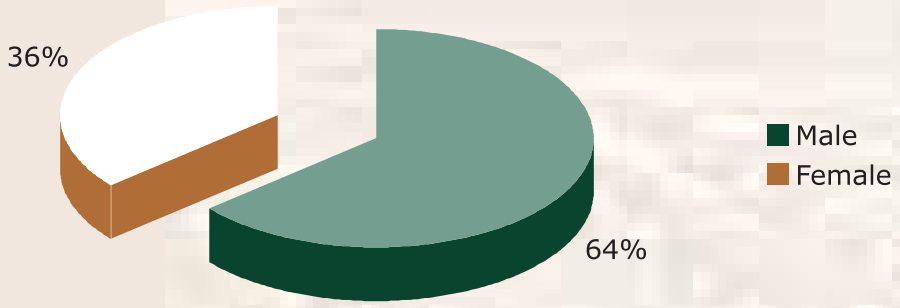


Figure 33 depicts that male students dominated the Diploma in Renewable Natural Resources enrolments with 64% while female students constituted 36%. African male enrolments constituted 66% of the total male students for the Diploma Renewable Natural Resources followed by White males with 34% and Coloured males constituted less than 1%. African females dominated female enrolments with 59%; White females constituted 40% and Coloured females accounted for 1% only.

Figure 34: Racial breakdown of BTech enrolments in Renewable Natural Resources

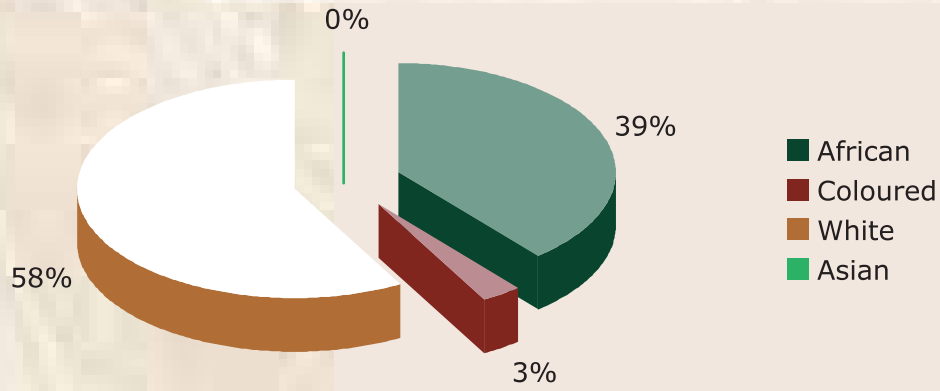


Figure 34 depicts that White students dominated the BTech Renewable Natural Resources enrolments with 58% followed by African students with 39%. Coloured students contributed only 3% of the total number of BTech enrolments in this CESM during the 2005 academic year.

Figure 35: Gender breakdown of BTech enrolments in Renewable Natural Resources

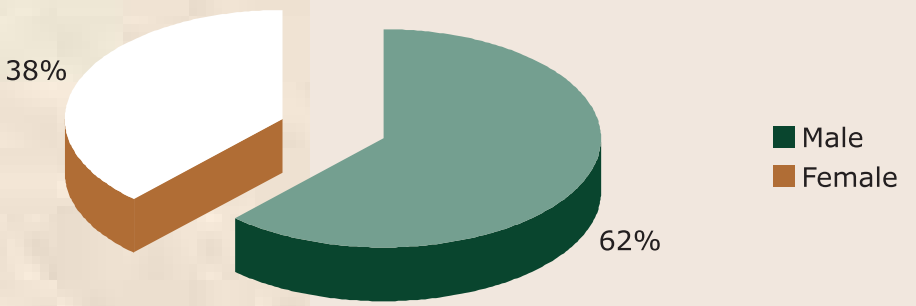


Figure 35 depicts that male students dominated the BTech in Renewable Natural Resources enrolments with 62% while

female students constituted 38%. African male students constituted 49% of the BTech male enrolments in this CESM followed by White male students with 47%. Coloured males constitute only 4% of the male enrolments in this CESM at BTech level during the 2005 academic year. White female students constituted 73% of the total female enrolments for the BTech Renewable Natural Resources during 2005. African female students constitute 24% of the female students in this CESM and Coloured females registered only 3% of the female students in the BTech Renewable Natural Resources during the 2005 academic year.

Twenty one (21) students enrolled for the MTech Renewable Natural Resources during the 2005 academic year. Whites constitute the highest number of student enrolments in BTech in Renewable Natural Resources.

Gender breakdown depicts that 16 male and 5 female students were registered for the MTech Renewable Natural Resources during the 2005 academic year. Eleven (11) White males and 5 African males enrolled at MTech level in this CESM. Out of 21 students, only 5 were female students.

Two (2) male students, of which 1 was African and 1 was White, registered for a DTech in Renewable Natural Resources during the 2005 academic year.

3.3.2.8 Other Agricultural and Renewable Resources Enrolments at Universities of Technology in 2005

Other Agricultural and Renewable Resources at Universities of Technology encompass the Diploma in Agriculture: Mixed Farming. TUT is the only University of Technology offering programmes in this CESM. Fifty one (51) students enrolled in this CESM during 2005. Table 26 represents a demographic breakdown of the Diploma in Other Agricultural Renewable Resources Diploma enrolments in 2005 academic year by level of qualification.

Table 26: Demographic breakdown of Other Agric. and Renewable Resources enrolments by level of qualification

LEVEL	African			Coloured			White			Asian			TOTAL
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	23	12	**35**	0	0	**0**	16	0	**16**	0	0	**0**	**51**
TOTAL	23	12	**35**	0	0	**0**	16	0	**16**	0	0	**0**	**51**

All the 51 students enrolled for this CESM are registered at Diploma level.

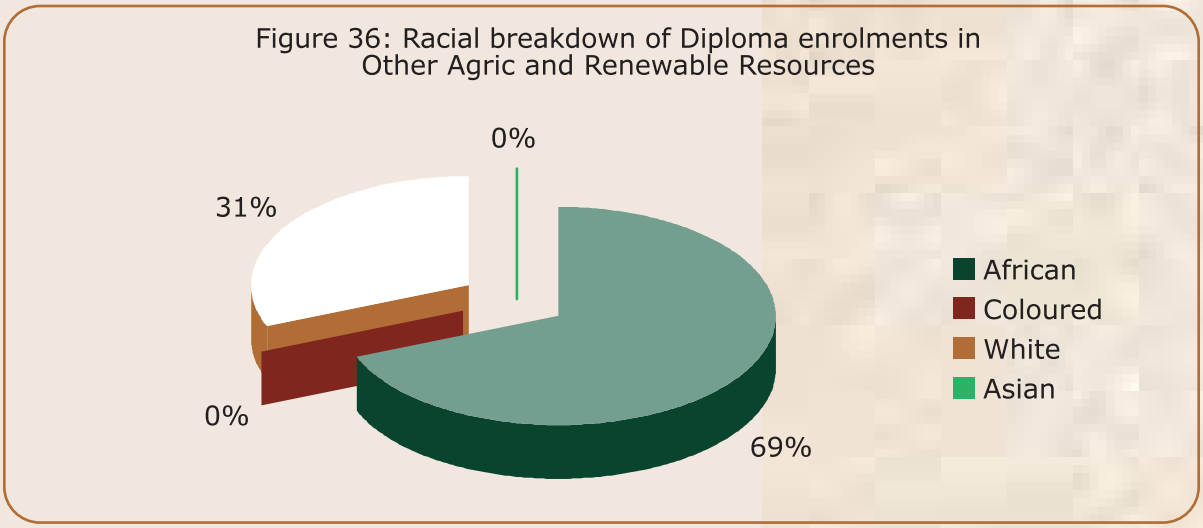


Figure 36 depicts that 69% of Diploma enrolments in this CESM are African students and White students constituted 31%. No Coloured and Asian students registered for this programme during 2005 at Universities of Technology.

Figure 37:Gender breakdown of Diploma enrolments in Other Agric and Renewable Resources

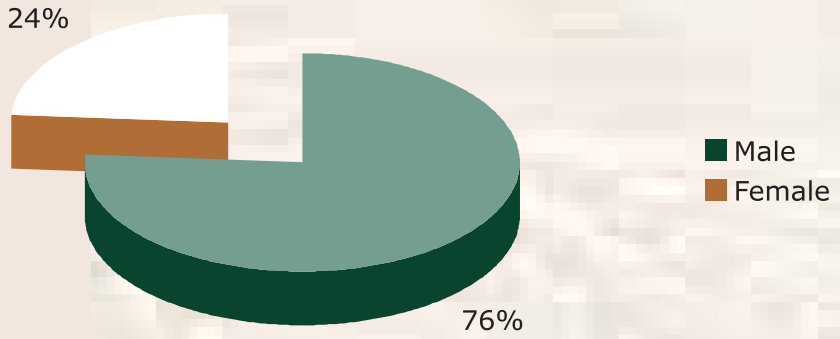


Figure 37 indicates that male enrolments dominated with 76% while female enrolments constituted 24%. African males accounted for 59% of male enrolments in this programme, followed by White males with 41%. Twelve (12) African females enrolled for this programme during the 2005 academic year at Universities of Technology and there were no female enrolments for other racial groups.

3.3.2.9 Wildlife Enrolments at Universities of Technology in 2005

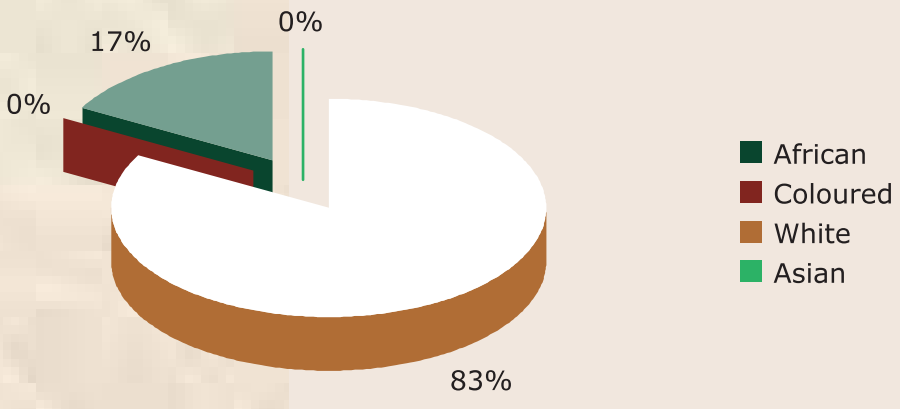
Wildlife CESM includes Diploma, BTech, MTech and DTech in Game Ranch Management. TUT is the only University of Technology offering this programme. One hundred and thirty eight (138) students enrolled in this programme during the 2005 academic year, at Diploma and BTech levels only. Table 27 presents a demographic breakdown of the Diploma in Wildlife enrolments during the 2005 academic year by level of qualification.

Table 27: Demographic breakdown of Diploma in Wildlife enrolments

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	18	4	**22**	0	0	**0**	93	13	**106**	0	0	**0**	**128**	93
BTech	0	0	**0**	0	0	**0**	8	2	**10**	0	0	**0**	**10**	7
TOTAL	18	4	**22**	0	0	**0**	101	15	**116**	0	0	**0**	**138**	
%	13	3	**16**	0	0	**0**	73	11	**84**	0	0	**0**		100

Table 27 shows that Diploma level constituted 93% of the total Wildlife enrolments for the 2005 academic year at Universities of Technology followed by BTech with 7%.

Figure 38: Racial breakdown of Diploma enrolments in Wildlife



White students dominated enrolments at Diploma level in this CESM during the 2005 academic year with 83% followed by African students with 17%. No Coloured and Asian students were enrolled in this CESM at Diploma level.

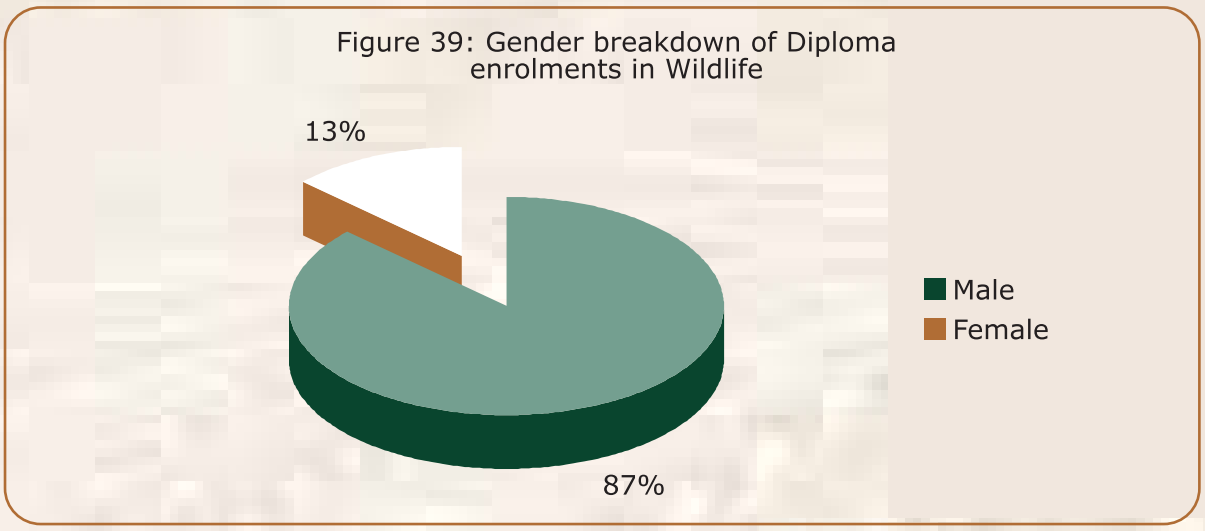


Figure 39 shows that male students dominated the Diploma in Wildlife enrolments with 87% and female students constituted only 13%. White males constituted 84% of the male enrolments at Diploma level in this CESM and African males accounted for 16%. White females constituted 76% of the Diploma enrolments in this CESM and African females accounted for 24%.

Only ten (10) White students were enrolled at BTech level in this CESM during the 2005 academic year; 8 were males and 2 were females.

3.3.2.10 Land Reclamation Enrolments at Universities of Technology in 2005

Land Reclamation CESM includes Diploma, BTech, MTech and DTech, Landscape Technology. Land Reclamation programmes are offered by TUT only. Ninety (90) students registered in this CESM during the 2005 academic year at Universities of Technology. Table 28 depicts a demographic breakdown of Land Reclamation enrolments during the 2005 academic year by level of qualification.

Table 28: Demographic breakdown of Land Reclamation enrolments by level of qualification

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	14	10	**24**	0	0	**0**	38	18	**56**	0	0	**0**	**80**	89
BTech	0	1	**1**	0	0	**0**	5	4	**9**	0	0	**0**	**10**	11
TOTAL	14	11	**25**	0	0	**0**	43	22	**65**	0	0	**0**	**90**	
%	16	12	**28**	0	0	**0**	48	24	**72**	0	0	**0**		100

Table 28 shows that the Diploma level constituted 89% of the total Land Reclamation enrolments for the 2005 academic year at Universities of Technology followed by BTech with 11%.

Figure 40: Racial breakdown of Diploma enrolments in Land Reclamation

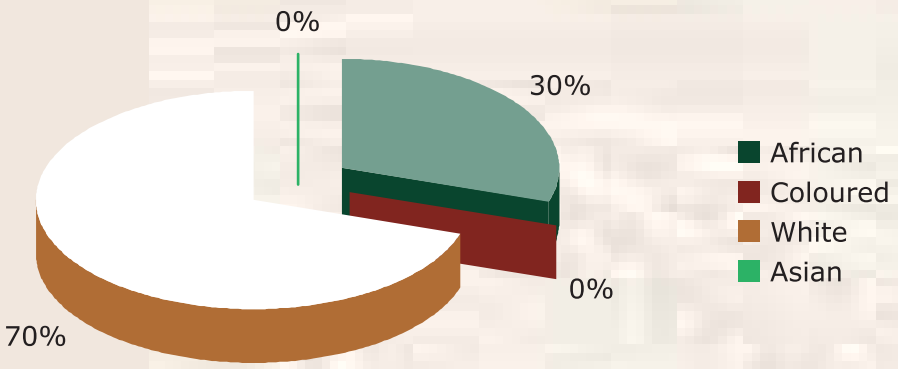


Figure 40 indicates that White students comprised 70% of the total Diploma enrolments in Land Reclamation, followed by African students with 30%. No Asian and Coloured students registered for this programme during the 2005 academic year.

Figure 41: Gender breakdown of Diploma enrolments in Land Reclamation

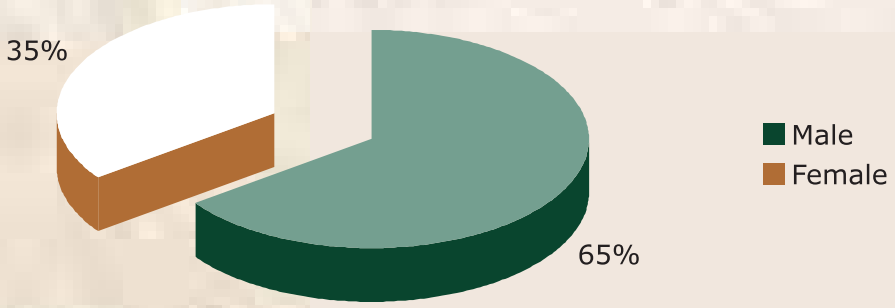


Figure 41 indicates that male students dominated with 65% and female students constituted 35% of the total Land Reclamation enrolments during the 2005 academic year. White males dominated male diploma enrolments in this CESM with 73%, followed by African males with 27%.

White females constituted 64% of the female enrolments for the Diploma in Land Reclamation, followed by African females with 36%.

Ten (10) students enrolled at BTech level in this CESM during the 2005 academic year. Racial breakdown depicts that 1 was African female while 5 were White males and 4 were White females.

3.3.2.11 Agriculture Extension Enrolments at Universities of Technology in 2005

Agriculture Extension CESM includes Diploma, BTech, MTech and DTech in Agricultural Rural Development and TUT offers this programme. Agricultural Extension CESM enrolled 96 students during the 2005 academic year. Table 29 presents a demographic breakdown of BTech Agricultural Extension enrolments during 2005 academic year by level of qualification.

Table 29: Demographic breakdown of BTech in Agricultural Extension enrolments

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	28	20	**48**	1	0	**1**	0	0	**0**	0	0	**0**	**49**	51
BTech	33	14	**47**	0	0	**0**	0	0	**0**	0	0		**47**	49
TOTAL	61	34	**95**	1	0	**1**	0	0	**0**	0	0	**0**	**96**	
%	64	35	**99**	1	0	**1**	0	0	**0**	0	0	**0**		100

Table 29 shows that Diploma constituted 51% of the total Agricultural Extension enrolments for the 2005 academic year at Universities of Technology followed by BTech with 49%.

Racial breakdown of Diploma enrolments in this CESM depicts that 95 African students enrolled and 1 Coloured student. No Asian and White students were registered in this CESM at Diploma level during the 2005 academic year at Universities of Technology.

Gender breakdown of Diploma enrolments in this CESM depicts that males dominate with 29 students and female students registered were 20.

Forty seven (47) African students registered for BTech Agricultural Extension during the 2005 academic year; 33 were males and 14 were females.

3.4 Graduate outputs of Universities of Technology during the 2005 academic year.

Table 30 and figure 42 shows the number of graduates in the Universities of Technology during the 2005 academic year.

Table 30: Graduate figures at universities of technology in 2005

Name of university of technology	Number of AET Graduates	Percentage (%)
CPUT	61	9
CUT	71	10
MANTEC	50	7
NMMU	50	7
TUT	453	67
Total	685	100

Universities of Technology trained a total of 685 students during 2005.TUT trained 67% of all the graduates at Universities of Technology. This large number of graduates produced by TUT, is attributed to their broad agricultural curricula Other Universities of Technology collectively trained the remaining 33% of the overall graduates during 2005.

Figure 42: Graduates at universities of technology

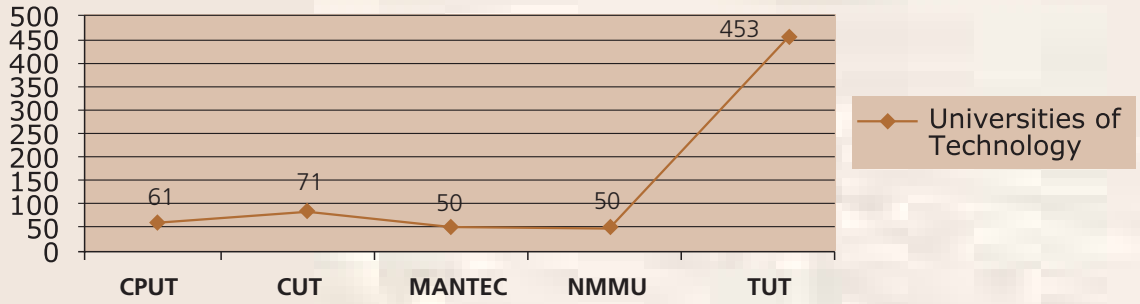


Figure 42 indicates that the difference between qualifications awarded by CPUT, CUT, Mantec and NMMU is insignificant. Table 31 presents a demographic breakdown of graduates in AET programmes during the 2005 academic year from the Universities of Technology.

Table 31: Breakdown of graduates by gender and race per University of Technology

Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
CPUT	5	4	**9**	3	1	**4**	40	8	**48**	0	0	**0**	**61**
CUT	29	27	**56**	0	0	**0**	15	0	**15**	0	0	**0**	**71**
MANTEC	32	18	**50**	0	0	**0**	0	0	**0**	0	0	**0**	**50**
NMMU	29	18	**47**	0	0	**0**	3	0	**3**	0	0	**0**	**50**
TUT	188	128	**316**	0	0	**0**	94	42	**136**	0	1	**1**	**453**
Total	283	195	**478**	3	1	**4**	152	50	**202**	0	1	**1**	**685**

African graduates constituted 70% of all the AET graduates during 2005, followed by Whites with 29% and Coloured graduates comprised 1% of the total graduates trained by Universities of Technology during 2005.

African males dominated the male graduates and they constituted 64%. White males accounted for 35% of the male graduates; Coloured males constituted 1% and Asian males were non-existent.

African females also dominated the female graduates with 80% and White females constituted 20% of the female graduates. Coloured and Asian females constituted less than 1% of the total female graduates in the 2005 academic year.

Figure 43: Gender Breakdown of AET graduates at universities of technology

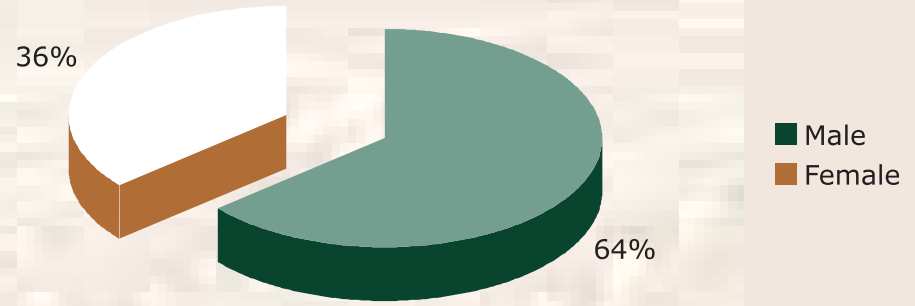
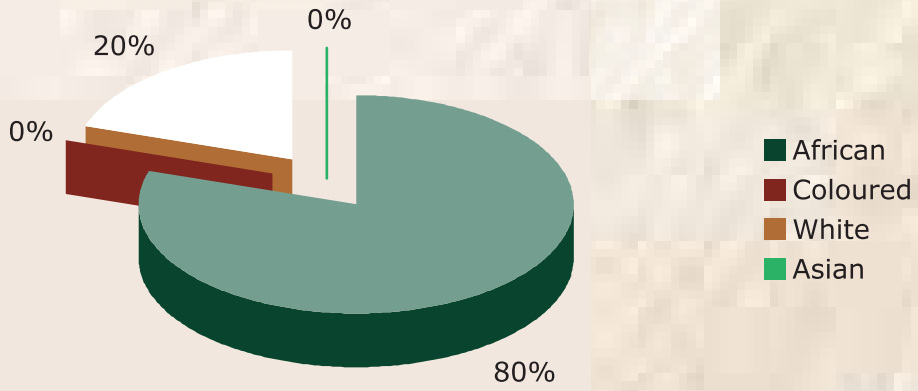


Figure 43 indicates that male graduates constituted 64% of the overall AET graduates at Universities of Technology during 2005, and females accounted for 36%.

Figure 44: Racial breakdown of AET female graduates at universities of technology



As depicted in figure 44, African females account for 80% of the total female graduates during the 2005 academic year. White female graduates constituted 20%. Coloured and Asian female together, accounted for less than 1% of the total female graduates.

Figure 45: Racial breakdown of AET male graduates at universities of technology

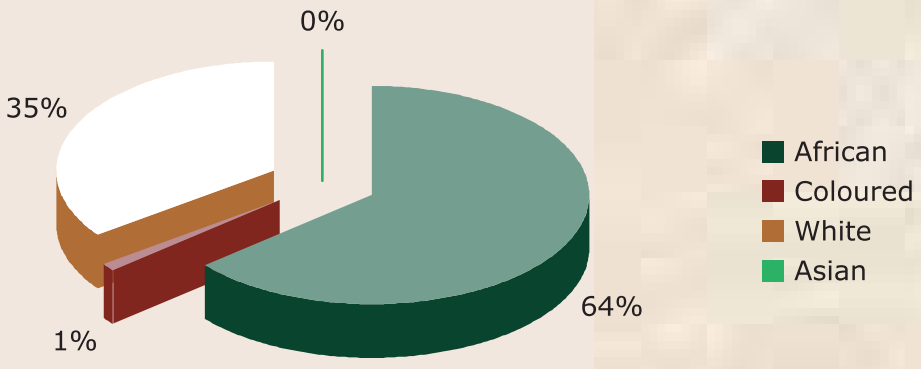


Figure 45 shows that African and White male graduates constituted 64% and 35% of the total male graduates respectively. Coloured male graduates comprised only 1% of the total male graduates at Universities of Technology.

3.4.1 AET Graduates at Universities of Technology by Level of Qualification and CESM in 2005

Table 32: Agricultural graduates at Universities of Technology by CESM & level of qualification for 2005						
CESM	**N. H CERT**	**DIPLOMA**	**BTECH.**	**MTECH.**	**TOTAL**	%
Agricultural Management	1	128	85	1	**215**	31
Animal Science	1	148	32	0	**181**	26
Horticulture	1	14	3	0	**18**	3
Plant Science	0	20	22	0	**42**	6
Land Reclamation	1	9	7	0	**17**	2
Renewable Natural Resources	0	69	14	4	**87**	13
Other Agricultural & Renewable Resources	0	12	1	0	**13**	2
Wildlife Management	0	25	0	0	**25**	4
Agricultural Science-General	1	29	21	1	**52**	8
Agricultural Extension	0	11	24	0	**35**	5
TOTAL	**5**	**465**	**209**	**6**	**685**	
%	1	68	31	1		100

Table 32 indicates that Agriculture Management, Animal Science and Renewable Natural Resources have high graduate figures with 31%, 26% and 13 % respectively. Other CESM categories have less than 10% of the graduates each.

Table 32 indicates that Diploma has dominated the graduates in the Universities of Technology in 2005 with 68% followed by BTech with 31%. National Higher Certificate and MTech each produced 1% of the total number of graduates produced by Universities of Technology in 2005. This can also be linked to the high number of Diploma enrolments and low enrolment's figure in BTech, MTech enrolments.

Table 33: Demographic breakdown of Certificate graduates by CESM at Universities of Technology													
CESM Category (Certificates)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agricultural Management	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Animal Science	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agricultural Science-General	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Land Reclamation	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Horticulture	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	3	1	**4**	0	0	**0**	1	0	**1**	0	0	**0**	**5**

The Certificate programmes are rated at NQF level 5. The data in table 33 depicts, that only 1 graduate was produced in all CESM at National Higher Certificate levels in the 2005 academic year. Only 4 Africans and 1 White were awarded a certificate.

Table 34: Demographic breakdown of Diploma graduates by CESM at Universities of Technology														
CESM Category (Diplomas)	**African**			**Coloured**			**White**			**Asian**			**Total**	**%**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**		
Agricultural Management	50	34	**84**	1	1	**2**	40	2	**42**	0	0	**0**	**128**	28
Animal Science	76	51	**127**	0	0	**0**	10	11	**21**	0	0	**0**	**148**	32
Horticulture	5	4	**9**	0	0	**0**	5	0	**5**	0	0	**0**	**14**	3
Plant Science	12	5	**17**	0	0	**0**	2	0	**2**	1	0	**1**	**20**	4
Land Reclamation	0	2	**2**	0	0	**0**	3	4	**7**	0		**0**	**9**	2
Renewable Natural Resources	28	11	**39**	0	0	**0**	17	13	**30**	0	0	**0**	**69**	15
Other Agricultural & Renewable Resources	6	3	**9**	0	0	**0**	3	0	**3**	0	0	**0**	**12**	3
Wildlife Management	2	0	**2**	0		**0**	18	5	**23**			**0**	**25**	5
Agricultural Science-General	6	6	**12**	2	0	**2**	11	4	**15**	0	0	**0**	**29**	6
Agricultural Extension	7	4	**11**	0	0	**0**	0	0	**0**	0	0	**0**	**11**	2
TOTAL	192	120	**312**	3	1	**4**	109	39	**148**	1	0	**1**	**465**	
%	41	26	**67**	1	0	**1**	23	8	**32**	0	0	**0**		100

Table 34 indicates that a total number of 465 graduates were awarded Diploma qualifications during the 2005 academic year. Animal Science graduates accounted for 32% of the overall Diploma graduates; followed by Agricultural Management graduates with 28% of the total Diploma graduates at Universities of Technology during 2005.

Graduates in Agricultural Extension and Land Reclamation constituted the least number of Diploma graduates during 2005 with 2% each. African graduates dominated Diploma graduates with 67%; followed by Whites with 32%. Like in the other programmes; Coloured and Asians constitute very low figures of the total Diploma graduates during the 2005 academic year.

Table 35: Demographic breakdown of BTech graduates by CESM at Universities of Technology														
CESM Category(BTech)	**African**			**Coloured**			**White**			**Asian**			**Total**	**%**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**		
Agricultural Management	37	35	**72**	0	0	**0**	12	1	**13**	0	0	**0**	**85**	41
Animal Science	16	11	**27**	0	0	**0**	4	1	**5**	0	0	**0**	**32**	15
Horticulture	1	0	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**3**	1
Plant Science	10	7	**17**	0	0	**0**	5	0	**5**	0	0	**0**	**22**	11
Land Reclamation	1	1	**2**	0	0	**0**	3	2	**5**	0	0	**0**	**7**	3
Renewable Natural Resources	3	1	**4**	0	0	**0**	6	4	**10**	0	0	**0**	**14**	7
Other Agricultural & Renewable Resources	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	0
Agricultural Science-General	6	8	**14**	0	0	**0**	5	2	**7**	0	0	**0**	**21**	10
Agricultural Extension	14	9	**23**	0	0	**0**	1	0	**1**	0	0	**0**	**24**	11
TOTAL	89	72	**161**	0	0	**0**	38	10	**48**	0	0	**0**	**209**	
%	43	34	**77**	0	0	**0**	18	5	**23**	0	0	**0**		**100**

Table 35 indicates that a total number of 209 graduates were awarded BTech Degrees during the 2005 academic year. Agricultural Management accounted for 41% followed by Animal Science and Plant Science with 15% and 11% respectively.

Other CESM categories have awarded a very low number of BTech Degrees with Horticulture graduates constituting only 1% of the total number of BTech graduates in this CESM. Africans were the largest recipients of BTech Degrees with 77%; followed by Whites with 23% during the 2005 academic year. There were no Coloured and Asian graduates produced in this programme during 2005.

Table 36: Demographic breakdown of MTech graduates by CESM at Universities of Technology													
CESM Category(MTech)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Management	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Renewable Natural Resources	0	0	**0**	0	0	**0**	3	1	**4**	0	0	**0**	**4**
Agricultural Science-General	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	0	2	**2**	0	0	**0**	3	1	**4**	0	0	**0**	**6**

As depicted in Table 36 a total of 6 graduates were awarded MTech Degrees in AET programmes during the 2005 academic year. Four (4) graduates were awarded MTech qualifications in Renewable Natural Resources, during 2005.

3.4.1.1 Agricultural Management Graduates at Universities of Technology in 2005

Two hundred and fifteen (215) graduates qualified in this CESM at Universities of Technology during 2005. Table 37 shows a demographic breakdown of Agricultural Management graduates by level of qualification during 2005 academic year.

Table 37: Demographic breakdown of Agricultural Management graduates by level of qualification in 2005.														
LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
National Higher Certificate	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	0
Diploma	50	34	**84**	1	1	**2**	40	2	**42**	0	0	**0**	**128**	60
BTech	37	35	**72**	0	0	**0**	12	1	**13**	0	0	**0**	**85**	40
MTech	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	0
TOTAL	88	70	**158**	1	1	**2**	52	3	**55**	0	0	**0**	**215**	
%	41	32	**73**	0.5	0.5	**1**	25	1	**26**	0	0	**0**		100

Agricultural Management Diploma graduates constituted 60% of the overall Agricultural Management CESM graduates, followed by BTech with 40%. The lowest numbers of graduates were recorded at Certificate and MTech level.

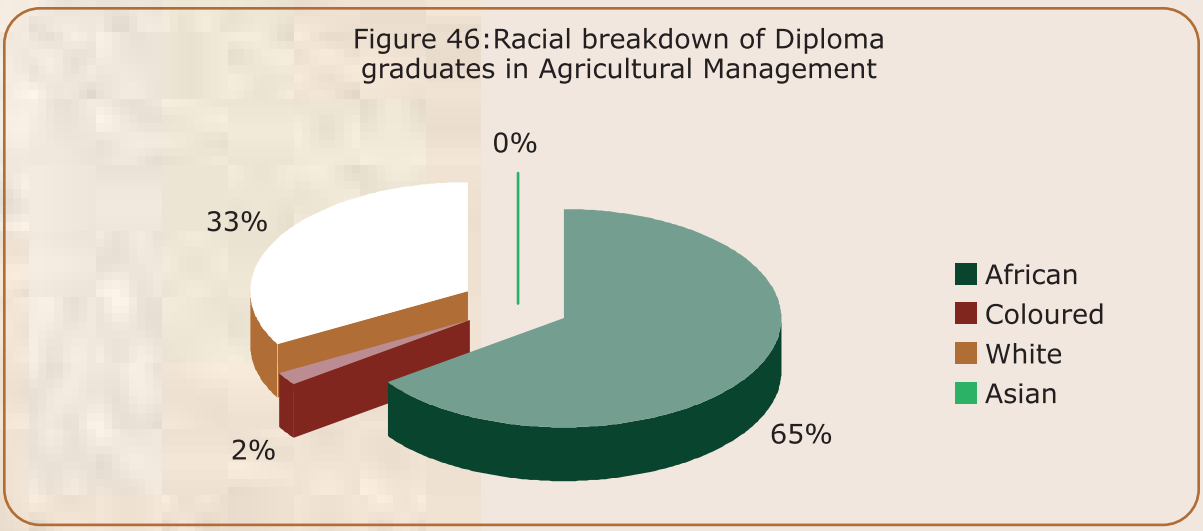


Figure 46 indicates that 65% of the Diploma graduates in this CESM are Africans. White graduates constitute 33% and Coloured graduates accounted for only 2% of the total Diploma graduates in Agricultural Management, during the 2005 academic year.

Figure 47: Gender breakdown of Diploma graduates in Agricultural Management

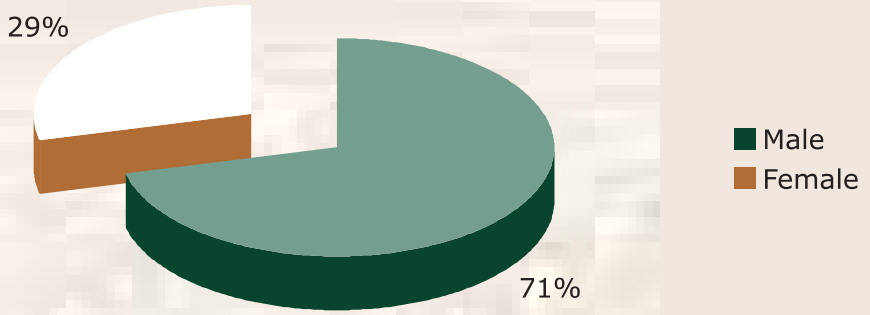


Figure 47 indicates that male graduates constituted 71% of the Diploma graduates and female graduates accounted for 29%. African male graduates constituted 55% of the male graduates, followed by White males with 44%. Coloureds accounted for 1% only and no Asians graduated in this programme during 2005. African female graduates dominate the female Diploma population in this CESM with 92%; White female graduates constituted 5% and Coloured females constituted 3% only.

Figure 48: Racial breakdown of BTech graduates in Agricultural Management

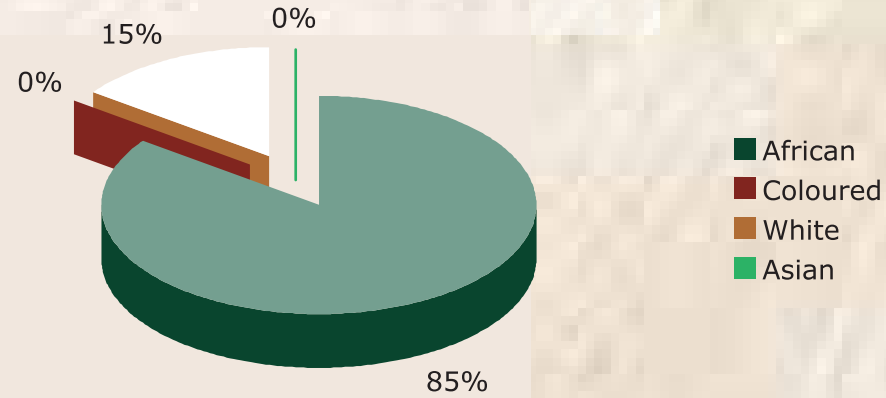


Figure 48 shows that African graduates constituted 85% of the total BTech Agricultural Management graduates, followed by White graduates with 15%. No Coloured and Asians graduated in B. Tech Agricultural Management during 2005.

Figure 49: Gender breakdown of BTech graduates in Agricultural Management

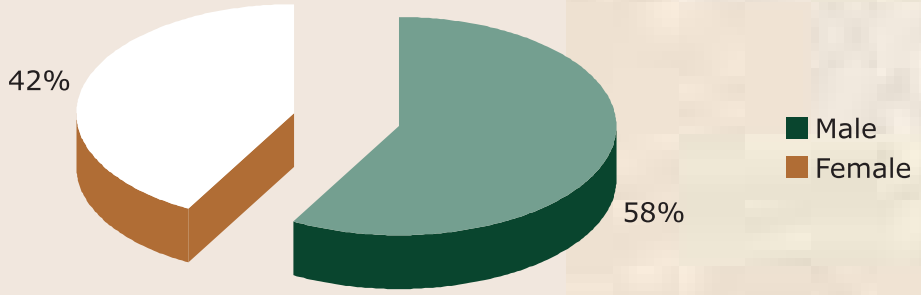


Figure 49 shows that male graduates constituted 58% of the total BTech Agricultural Management graduates and female graduates constituted 42%. African male graduates dominated male graduates in the BTech Agricultural Management with 76%.

African females constitute 97% of all the females in the BTech Agricultural Management Degree while White female graduates accounted for only 3%.

3.4.1.2 Animal Science Graduates at Universities of Technology in 2005

One hundred and eighty one (181) graduates qualified in Animal Science at Universities of Technology during 2005. Table 38 depicts a demographic breakdown of Animal Science graduates during the 2005 academic year by level of qualification.

Table 38: Demographic breakdown of Animal Science graduates by level of qualification

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
National Higher Certificate	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	1
Diploma	76	51	**127**	0	0	**0**	10	11	**21**	0	0	**0**	**148**	82
BTech	16	11	**27**	0	0	**0**	4	1	**5**	0	0	**0**	**32**	18
TOTAL	93	62	**155**	0	0	**0**	14	12	**26**	0	0	**0**	**181**	
%	51	34	**85**	0	0	**0**	**8**	**7**	**15**	0	0	**0**		100

Eighty two (82%) of the total Animal Science graduates are Diploma graduates; BTech constitute 18% and Certificate constitutes 1% only. No graduates were produced in MTech and DTech programmes in this CESM during 2005.

Only 1 African male graduate qualified at Certificate level in this CESM during the 2005 academic year. As indicated in Table 37, a total number of 148 graduates qualified for the Diploma in Animal Science during 2005.

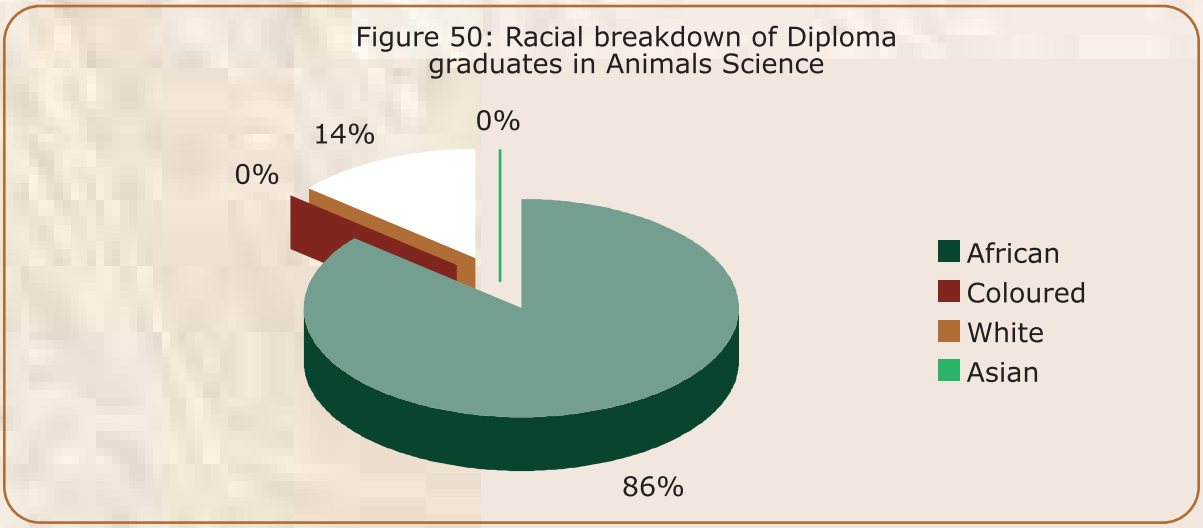
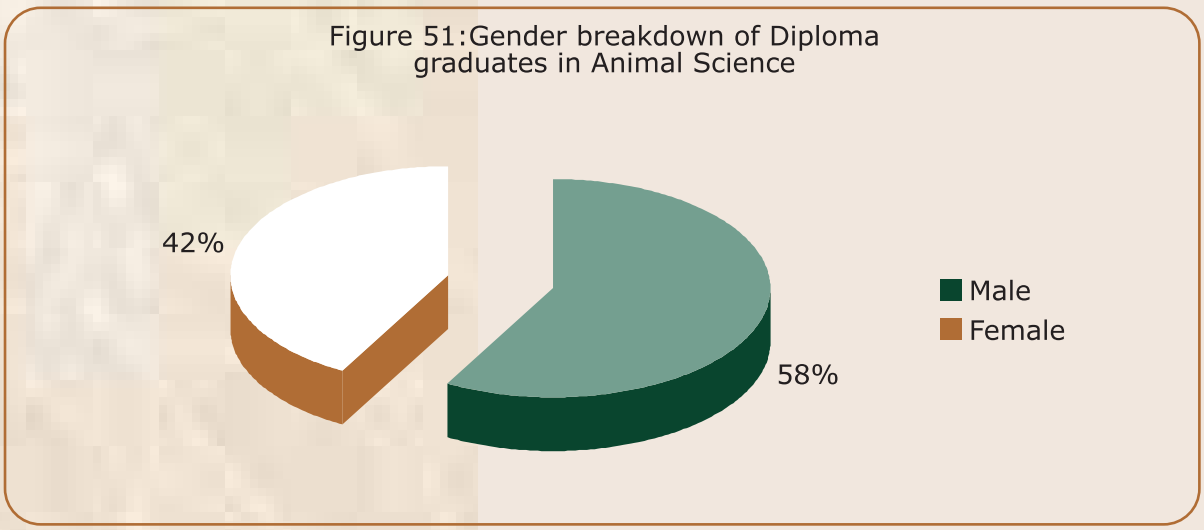


Figure 50 depicts that African graduates constituted 86% and White graduates accounted for 14% only.



As it appears in figure 51, male graduates dominated the Diploma in Animal Science graduates with 58% and female graduates constitute 42% of the CESM Diploma graduates. African males accounted for 88% and White males comprised

12% only of the male graduates Diploma in Animal Science. No graduates qualified from Coloured and Asian racial groups in this programme. African females constituted 82% of the total female graduates qualifying for the Diploma in Animal Science and White females constituted 18%.

Thirty two (32) graduates qualified at BTech level in Animal Science at Universities of Technology during 2005.

Figure 52: Racial breakdown of BTech graduates in Animal Science

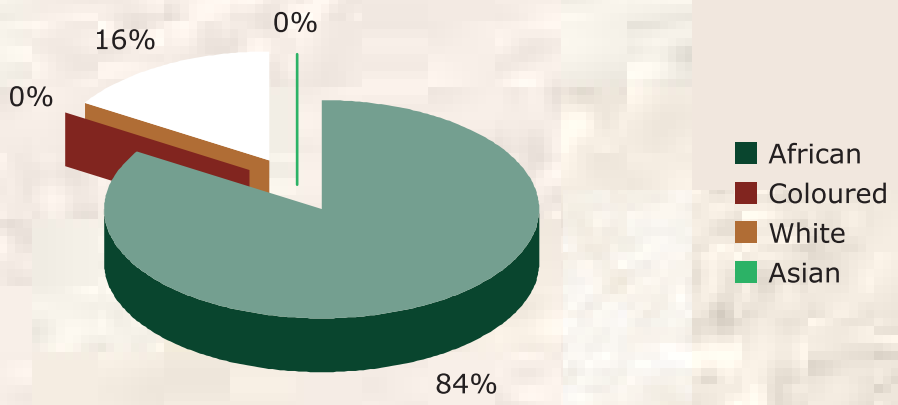


Figure 52 shows that African graduates constitute 84% of the total BTech Animal Science graduates followed by Whites with only 16%.

Figure 53: Gender breakdown of BTech graduates in Animal Science

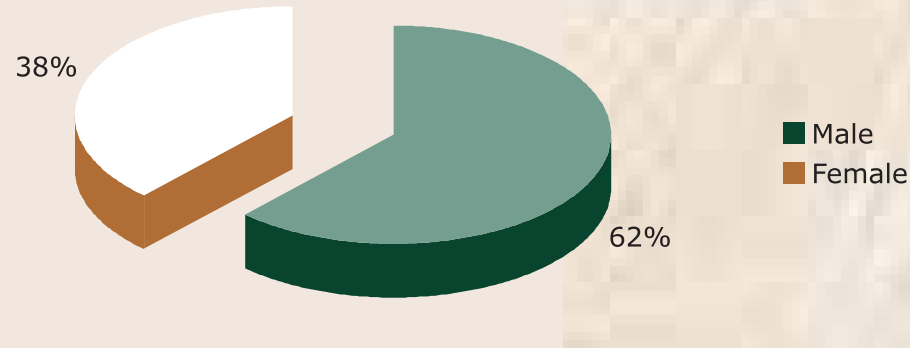


Figure 53 shows that males dominate the BTech Animal Science graduates with 62% and females constituted 38%. African males constituted 80% of the male graduates qualifying for the BTech Animal Science and White males accounted for the remaining 20%. African females comprised 92% of the female graduates in BTech Animal Science and White females constituted 8%.

3.4.1.3 Horticulture Graduates at Universities of Technology in 2005

Eighteen (18) graduates qualified at Universities of Technology during the 2005 academic year in Horticulture. Table 39 shows a demographic breakdown of Horticulture graduates during the 2005 academic year by level of qualification.

Table 39: Demographic breakdown of Horticulture graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
National Higher Certificate	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Diploma	5	4	**9**	0	0	**0**	5	0	**5**	0	0	**0**	**14**
BTech	1	0	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**3**
TOTAL	7	4	**11**	0	0	**0**	7	0	**7**	0	0	**0**	**18**

Seventy eight percent (78%) of the Horticulture graduates were awarded Diploma, followed by BTech with 16%. Certificate candidates comprised only 6% of the total graduates in Horticulture qualifying at Universities of Technology during 2005.

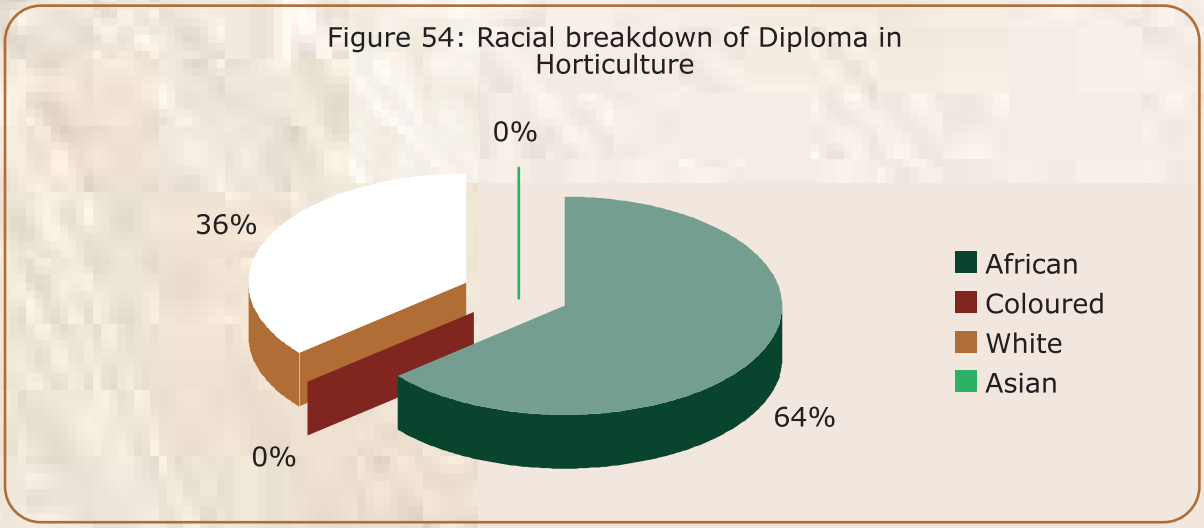
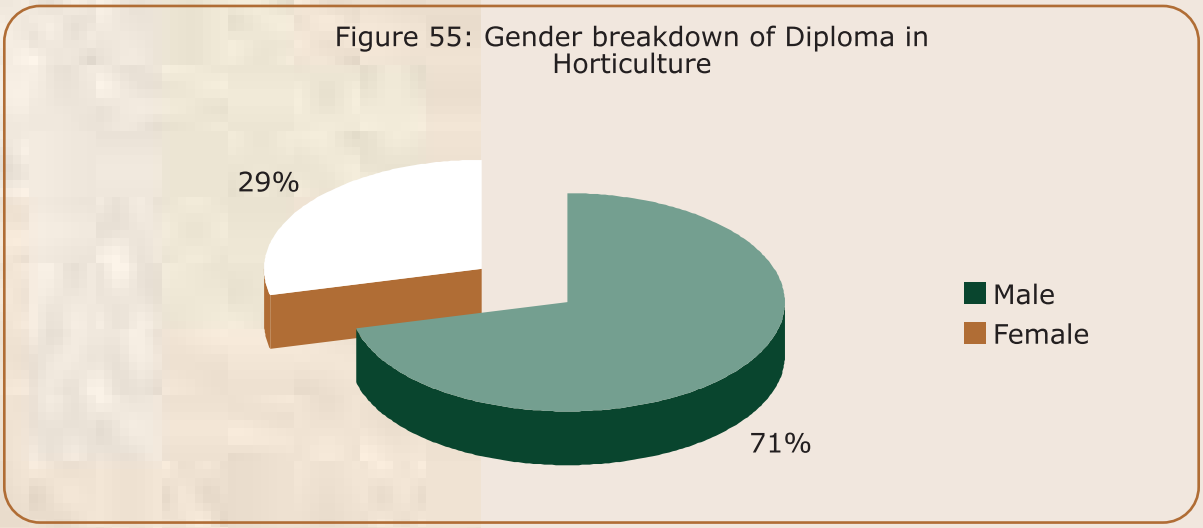


Figure 54 depicts that African graduates constituted 64% of the Horticulture Diploma graduates and White graduates produced 36% of the Horticulture Diploma at Universities of Technology during 2005.



Gender breakdown in figure 55 illustrates that male graduates dominated the Diploma in Horticulture graduates with 71%. White and African males each constituted 50% of male graduates in this programme. Four (4) African females graduated in this programme during 2005. Two (2) White males and 1 African male were awarded with BTech Horticulture during 2005.

3.4.1.4 Plant Science Graduates at Universities of Technology in 2005

Forty two (42) graduates in Diploma and BTech Plant Science qualified at Universities of Technology during 2005. Table 40 shows a demographic breakdown of Plant Science graduates during the 2005 academic year by level of qualification.

Table 40: Demographic breakdown of Plant Science graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	12	5	**17**	0	0	**0**	2	0	**2**	1	0	**1**	**20**	**48**
BTech	10	7	**17**	0	0	**0**	5	0	**5**	0	0	**0**	**22**	**52**
TOTAL	22	12	**34**	0	0	**0**	7	0	**7**	1	0	**1**	**42**	
%	52	29	**81**	0	0	**0**	17	0	**17**	2	0	**2**		**100**

BTech and Diploma graduates constitute 52% and 48 % of the total graduates in this CESM, respectively.

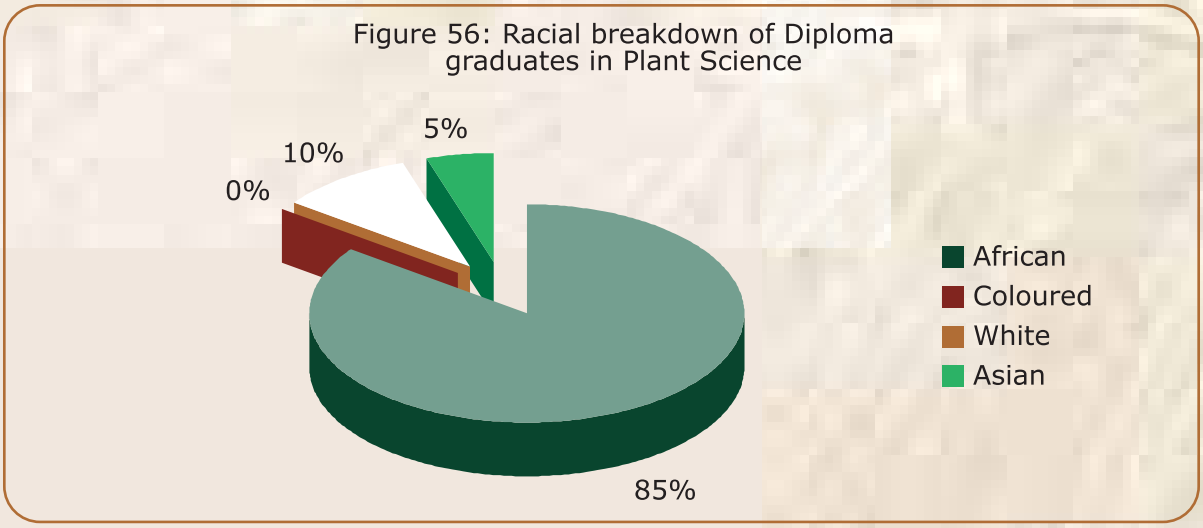


Figure 56 illustrates that African graduates constituted the highest number of Diploma graduates in Plant Science with 85% followed by Whites and Asians with 10% and 5% respectively. No Coloureds graduated in this programme at Universities of Technology during 2005.

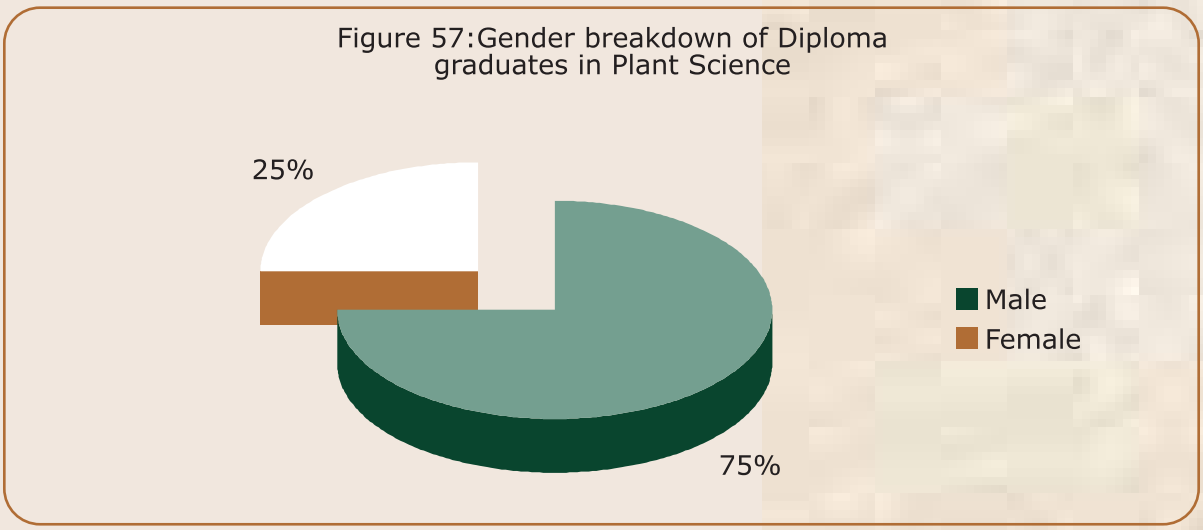


Figure 57 indicates that male graduates dominated with 75% and female graduates comprised 25% of the Diploma graduates in Plant Science. African males constituted 80% followed by White males with 13% and Asian males with 7% of the male graduates in Diploma in Plant Science. Only 5 African female graduates qualified in this CESM at Diploma level.

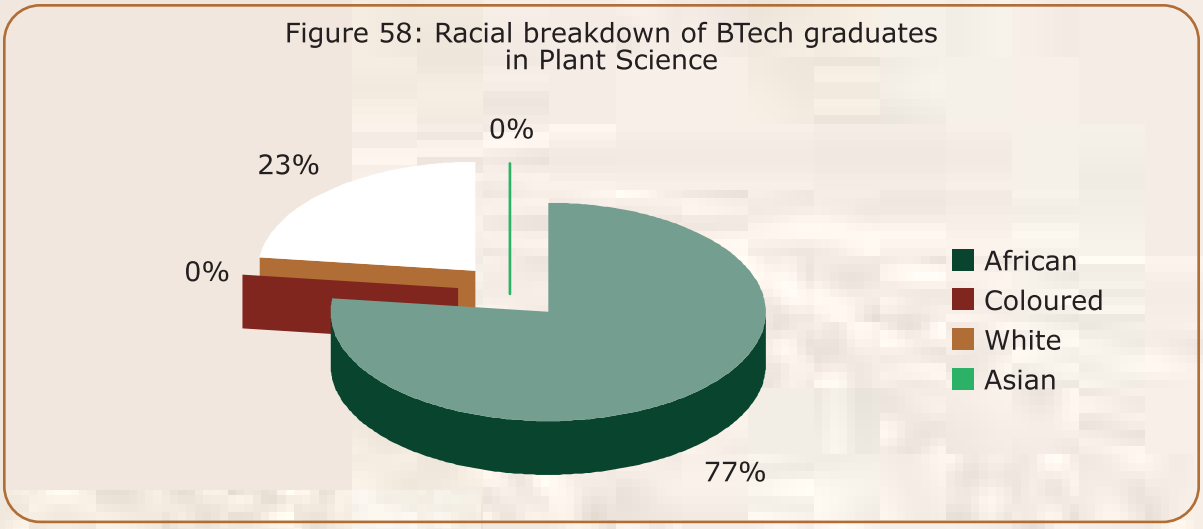


Figure 58 shows that Africans constitute 77% of the total number of BTech Plant Science graduates followed by Whites with 23%.

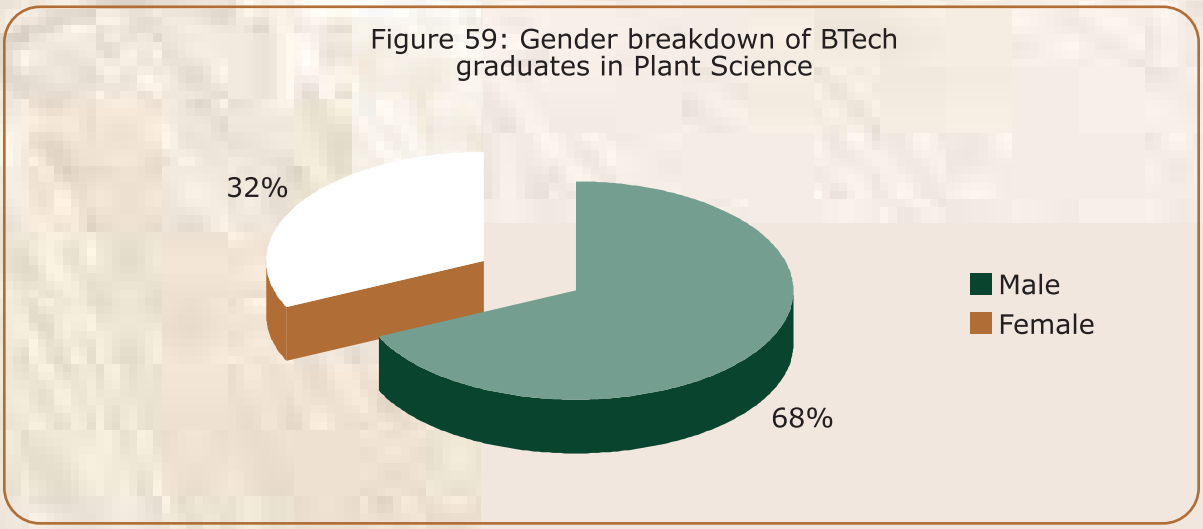


Figure 59 depicts that male graduates dominated the BTech Plant Science graduate with 68% and female graduates constitute 32%. African males constitute 67% of the male graduates in BTech Plant Science during 2005, followed by White males with 33%. There were only 7 African females who graduated in this CESM at BTech level during 2005 at Universities of Technology.

3.4.1.5 Land Reclamation Graduates at Universities of Technology in 2005

Seventeen (17) graduates qualified in this CESM at Universities of Technology during 2005. Table 41 depicts a demographic breakdown of Land Reclamation graduates during 2005 academic year by level of qualification.

Table 41: Demographic breakdown of Land Reclamation graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
National Higher Certificate	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Diploma	0	2	**2**	0	0	**0**	3	4	**7**	0	0	**0**	**9**
BTech	1	1	**2**	0	0	**0**	3	2	**5**	0	0	**0**	**7**
TOTAL	1	3	**4**	0	0	**0**	7	6	**13**	0	0		**17**

One (1) graduate was produced at Certificate level, 9 at Diploma level and 7 at BTech. Thirteen (13) white graduates were produced in the CESM, of which 7 were males and 6 were females. Four (4) African graduates were produced in this CESM of which 3 were females, 1 was male.

3.4.1.6 Renewable Natural Resources Graduates at Universities of Technology in 2005

Eighty seven (87) graduates were produced in this CESM. Table 42 shows a demographic breakdown of graduates in Renewable Natural Resources in 2005 by level of qualification.

Table 42: Demographic breakdown of Renewable Natural Resources graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	28	11	**39**	0	0	**0**	17	13	**30**	0	0	**0**	**69**	**79**
BTech	3	1	**4**	0	0	**0**	6	4	**10**	0	0	**0**	**14**	**16**
MTech	0	0	**0**	0	0	**0**	3	1	**4**	0	0	**0**	**4**	**5**
TOTAL	31	12	**43**	0	0	**0**	26	18	**44**	0	0	**0**	**87**	
%	35	14	**49**	0	0	**0**	30	21	**51**	0	0	**0**		**100**

Seventy nine percent (79%) of the total numbers of graduates in Renewable Natural Resources graduates are Diploma graduates, followed by BTech graduates with 16% and MTech with 5%.

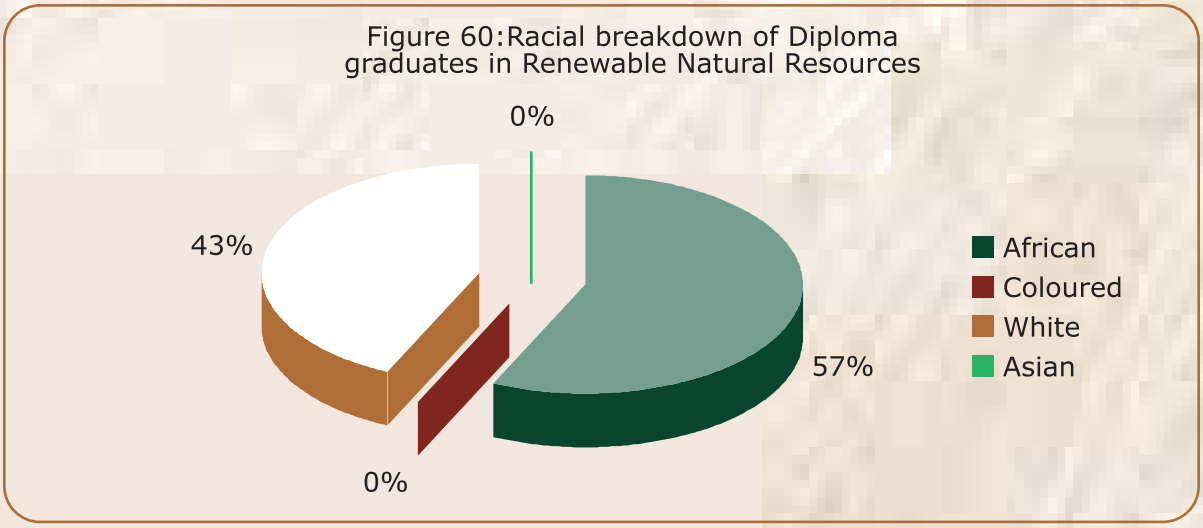


Figure 60 indicates that Africans dominate graduates in Diploma Renewable Natural Resources with 57% and white graduates constituted 43%.

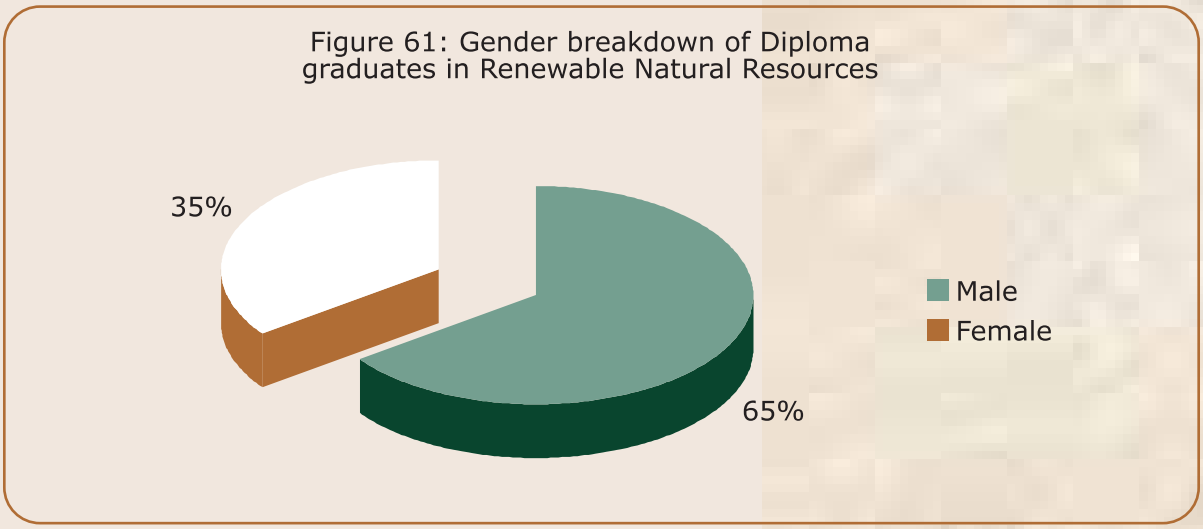


Figure 61 illustrates that males dominate the graduates in this CESM with 65% and female graduates account for only 35%. African males constituted 62% of the male graduates followed by White males with 38%. White females accounted for 54% of the female graduates and African females constituted 46% of the overall female graduate population in this programme at Universities of Technology during 2005.

Figure 62: Racial breakdown of BTech graduates in Renewable Natural Resources

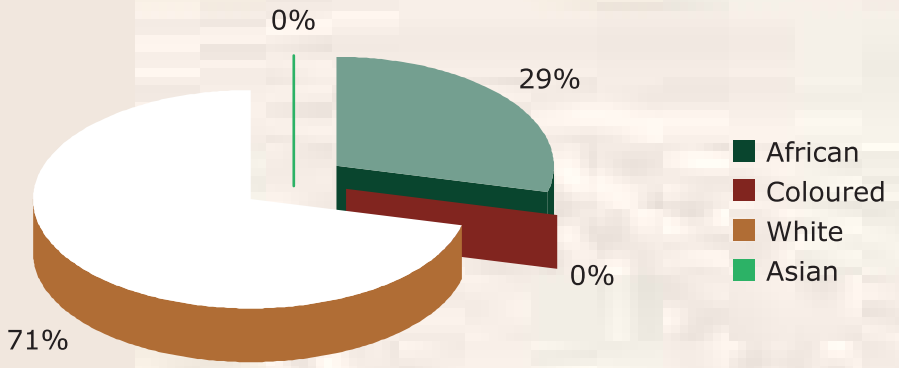


Figure 62 indicates that White graduates dominated the BTech Renewable Natural Resources graduates with 71% and African graduates constituted 29%. No Coloured and Asian graduates were produced at BTech level in this CESM at Universities of Technology during 2005.

Figure 63: Gender breakdown of BTech graduates in Renewable Natural Resources

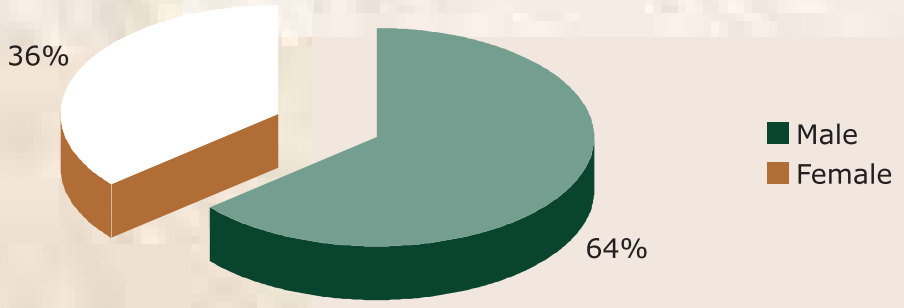


Figure 63 illustrates that males dominate the graduates in this CESM with 64% and female graduates account for 36%. White males constituted 67% of the male graduates followed by Africans with 33%. White females accounted for 80% of the female graduates and Africans constituted 20% of the overall female graduate population in this CESM at Universities of Technology during 2005.

3.4.1.7 Other Agricultural and Renewable Resources Graduates at Universities of Technology in 2005

Thirteen (13) graduates qualified in this CESM at Universities of Technology. Table 43 depicts a demographic breakdown of Other Agriculture and Renewable Resources graduates during 2005 academic year by level of qualification.

Table 43: Demographic breakdown of Other Agric. and Renewable Resources graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	6	3	**9**	0	0	**0**	3	0	**3**	0	0	**0**	**12**	**92**
BTech	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	**8**
TOTAL	7	3	**10**	0	0	**0**	3	0	**3**	0	0	**0**	**13**	
%	54	23	**77**	0	0	**0**	23	0	**23**	0	0	**0**		**100**

Thirteen (13) graduates qualified in this CESM, of which 10 were Africans and 3 were Whites, with males dominating. The majority of graduates are at Diploma level and only 1 person graduated at BTech level.

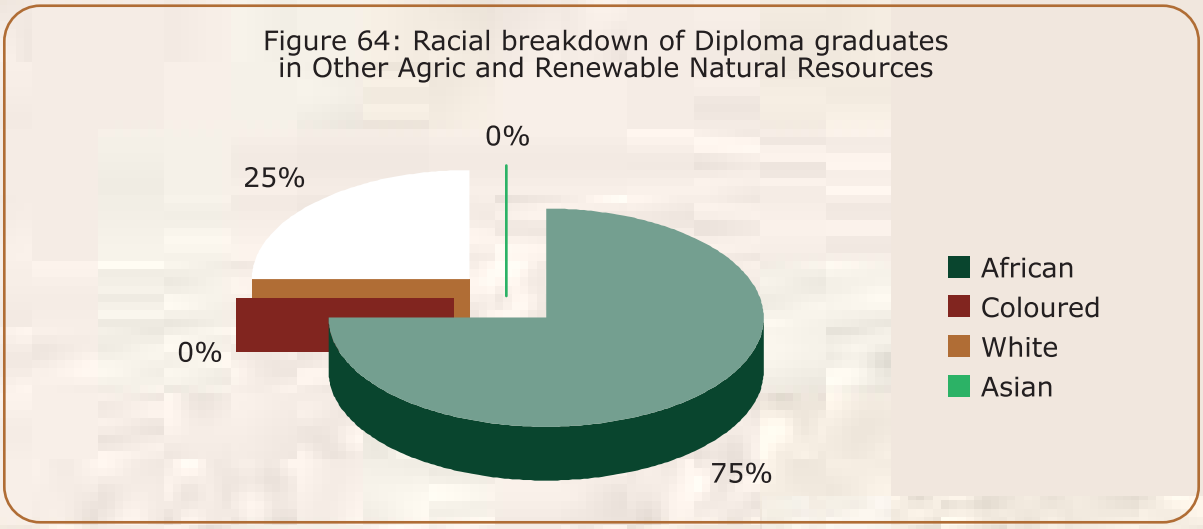


Figure 64 indicates that African graduates dominate the Diploma level with 75% and White graduates constituted 25% in this CESM.

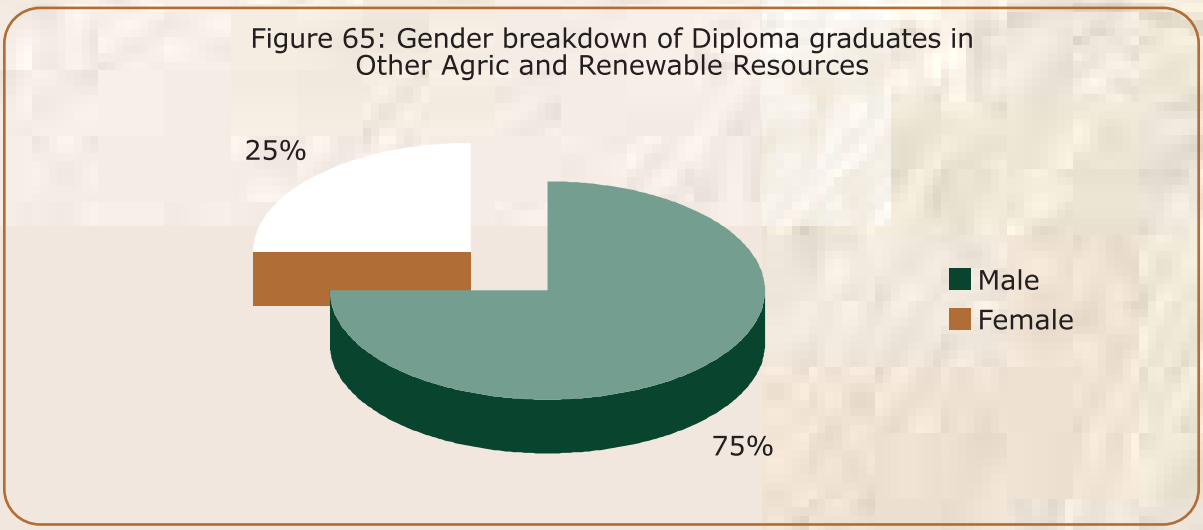


Figure 65 shows that males dominate the Diploma in this CESM by 75% and females amount to 25% only. African males account for 67% and White males constitute 33% of the male graduates in this CESM at Diploma level. One (1) African male qualified in this CESM at BTech level during 2005.

3.4.1.8 Wildlife Graduates at Universities of Technology in 2005

Only Diploma graduates qualified in this CESM in the academic year. Table 44 depicts a demographic breakdown of Wildlife Management graduates during the 2005 academic year by level of qualification.

Table 44: Demographic breakdown of Wildlife graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	2	0	**2**	0	0	**0**	18	5	**23**	0	0	**0**	**25**
TOTAL	2	0	**2**	0	0	**0**	18	5	**23**	0	0	**0**	**25**

Twenty five (25) graduates qualified in this CESM at Diploma level at Universities of Technology.

Figure 66: Racial breakdown of Diploma graduates in Wildlife

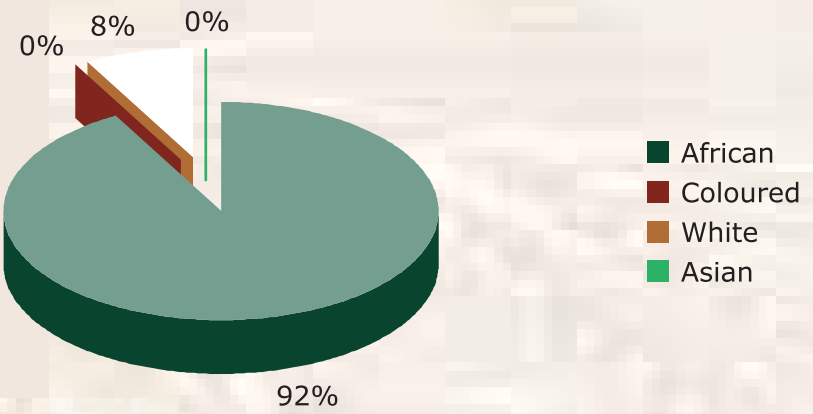


Figure 66 indicates that Whites dominated the Diploma in Wildlife Management graduates with 92% and African graduates constituted 8%.

Figure 67: Gender breakdown of Diploma graduates in Wildlife

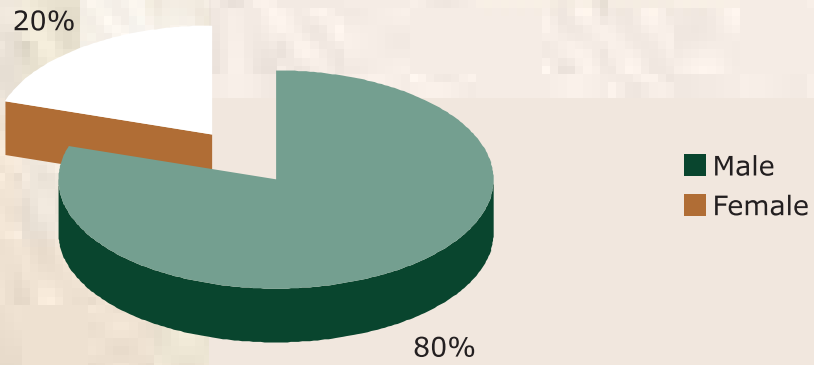


Figure 67 illustrates that males dominate the graduates in this CESM with 80% and female graduates accounted for only 20%. White males constitute 90% of the male graduates followed by African males with 10%. There were only 5 African females graduating in this CESM at BTech level.

3.4.1.9 Agricultural Science (General) Graduates at Universities of Technology in 2005

Fifty (50) graduates qualified in the CESM. Graduates in this category, include those who graduated with Diploma and BTech, in Agriculture Science and in Agriculture. Only Diploma and BTech graduates were produced in this CESM during the 2005 academic year. Table 45 presents a demographic breakdown of Agricultural Science graduates during the 2005 academic year by level of qualification.

Table 45: Demographic breakdown of Agricultural Science-General Resources graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	6	6	**12**	2	0	**2**	11	4	**15**	0	0	**0**	**29**	**58**
BTech	6	8	**14**	0	0	**0**	5	2	**7**	0	0	**0**	**21**	**42**
TOTAL	12	14	**26**	2	0	**2**	16	6	**22**	0	0	**0**	**50**	
%	24	28	**52**	4	0	**4**	32	12	**44**	0	0	**0**		**100**

Diploma graduates constitute 58% of the total number of Agricultural Science-General graduates and BTech graduates constitute 42%.

Figure 68: Racial breakdown of Diploma graduates in Agric Science-General

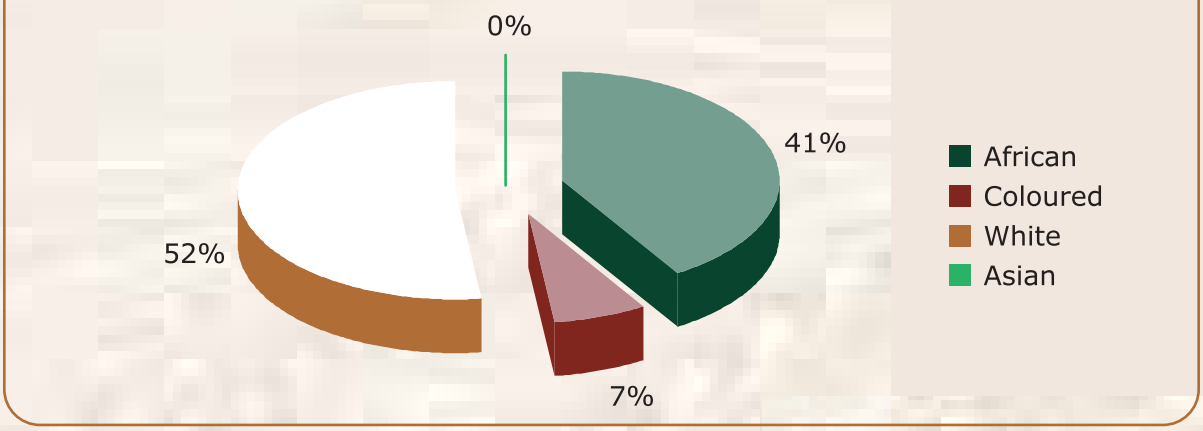


Figure 68 shows that Whites constitute 52% of the Diploma graduates in this CESM followed by African and Coloured graduates with 41% and 7% respectively. No Asians graduated in this CESM during 2005.

Figure 69: Gender breakdown of Diploma graduates in Agric Science-General

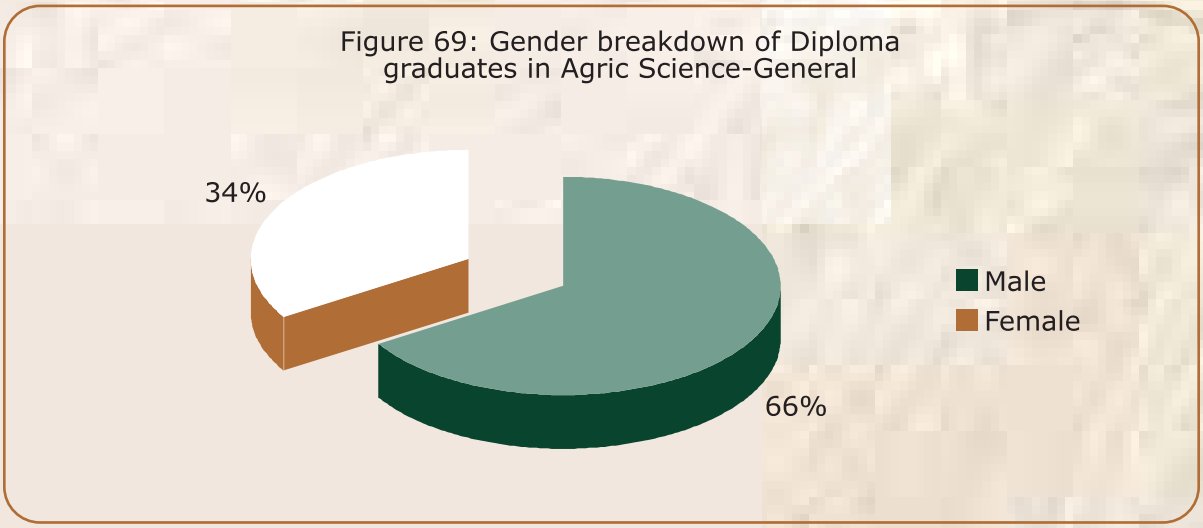


Figure 69 illustrates that males dominate the Diploma graduates in Agricultural Science with 66% and females constitute 34%. White males account for 58%, followed by African males with 31%. Coloured males constituted 11% of all the males for the Diploma in this CESM.

African females dominate the female graduates in the Diploma in this CESM with 60% and White females account for 40%.

Figure 70: Racial breakdown of BTech graduates in Agric Science-General

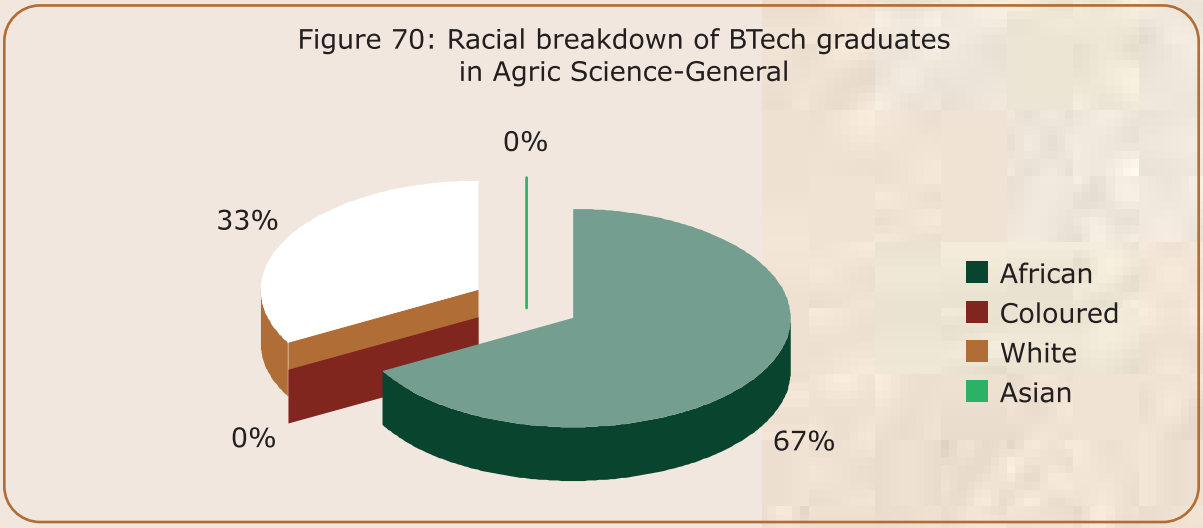


Figure 70 shows that African graduates constitute 67% of the BTech graduates in this CESM followed by White graduates with 33%.

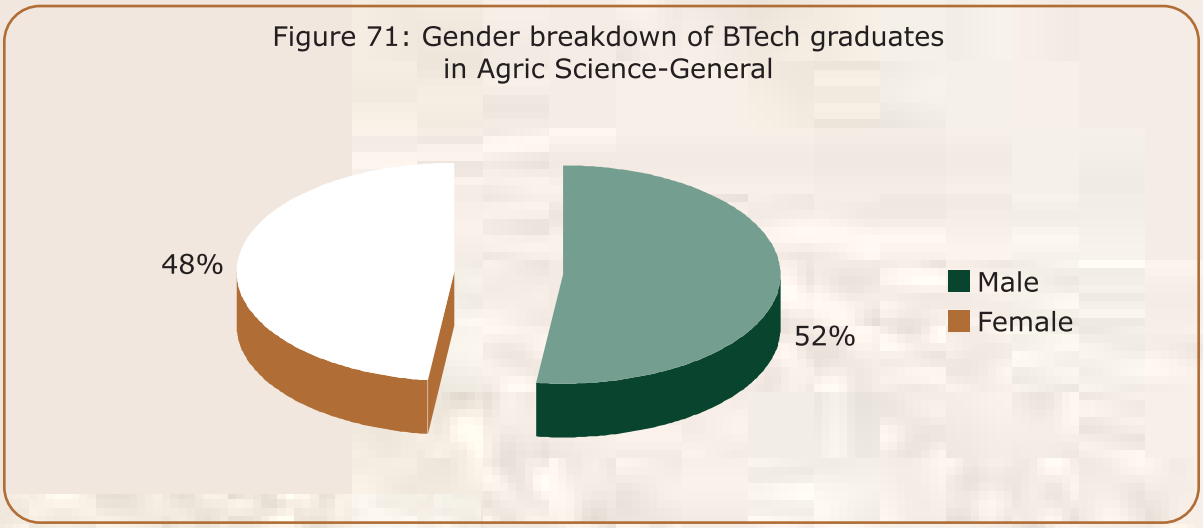


Figure 71 depicts that male graduates dominate the BTech graduates in Agricultural Science with 52% and females constitute 48%. African male graduates account for 55% followed by White males with 45%.

African females dominated the female graduates of the Diploma in Agricultural Science with 80% and White female graduates accounted for 20%.

3.4.1.10 Agricultural Extension Graduates at Universities of Technology in 2005

Thirty five (35) graduates qualified in this CESM at Universities of Technology during 2005. Table 46 shows a demographic breakdown of Agricultural Extension graduates during the 2005 academic year by level of qualification.

Table 46: Demographic breakdown of Agricultural Extension graduates by level of qualification for 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Diploma	7	4	**11**	0	0	**0**	0	0	**0**	0	0	**0**	**11**	**31**
BTech	14	9	**23**	0	0	**0**	1	0	**1**	0	0	**0**	**24**	**69**
TOTAL	21	13	**34**	0	0	**0**	1	0	**1**	0	0	**0**	**35**	
%	60	37	**97**	0	0	**0**	3	0	**3**	0	0	**0**		**100**

Sixty nine percent (69%) of the total number of Agricultural Extension graduates are BTech graduates and 31% are Diploma graduates.

Eleven (11) African graduates were awarded the Diploma in Agricultural Extension during the 2005 academic year of which 7 were males and 4 were females. Twenty four (24) graduates qualified in this CESM at BTech level during the 2005 academic year and 15 were male and 9 were females.

3.5 Conclusion

It is evident from enrolments and graduate figures, that enrolments in the Universities of Technology far outweigh graduate figures, for instance 3035 students enrolled in agricultural programmes in 2005, while only 685 graduated, which is 77% less than enrolments. Compared to 2004, the enrolments figures went up by 471 students and graduates dropped by 98 graduates.

African students register for agricultural programmes at Universities of Technology in large numbers compared to any other racial groups. However, at Postgraduate levels they are slightly lower than total of White enrolments. Africans dominate in all the programmes except in Wildlife, which is mostly dominated by Whites.

From the findings TUT has a bigger share of enrolments and graduates in all the Universities of Technology. This is attributed to the fact that the institution offers many agricultural programmes. CPUT, NMMU has the lowest number of both enrolments and graduates, and again this is attributed to the number of programmes offered by this institution, since the institutions offer only two programmes, namely National Diploma and BTech in Agricultural management.

It is evident from the findings, that generally Africans dominate both the enrolments and graduate figures in the Universities of Technology. Out of 3035 enrolments in all the Universities of Technology, 71% are Africans, and out of 685 graduates 70% are Africans. However some programmes are dominated by Whites. For instance, the trend is that in both enrolments and graduates, Whites dominate in Land Reclamation, Renewable Natural Resources and Wildlife while Africans dominate in Animal Science, Plant Science, Horticulture and Agricultural Management. Coloured and Asian graduates are less represented in all the agricultural programmes offered by Universities of Technology. Enrolment and graduate figures for Coloureds and Asians are very insignificant in all the programmes ranging from 0% to 1% in all the programmes.

In almost all of the programmes males dominate enrolments and graduates across all race groups. It is only in Animal Science enrolments, where White females outweigh the number of white males. The general trend is that males, particularly African and White males constitute a higher number of graduates and enrolments, with African males dominating. African males constitute almost half of the enrolment figures with 44% and 41% of the total graduate figures in the Universities of Technology.

Most of the programmes in the Universities of Technology are dominated by Africans with the exception of Wildlife and Land Reclamation, which are dominated by Whites. The lowest enrolments were recorded in Other Agricultural and Renewable Resources which enrolled 51 students.

The general trend is that the majority of the enrolments and graduates in the Universities of Technology were recorded in the Diploma in Animal Science. Generally enrollments for all racial groups are very low at BTech level to DTech level, which is a cause for concern if the sector's research base should expand. Enrolments and graduates are mostly at National Diploma level and very low number from BTech level particularly for African students. For instance, Diploma enrolments for Africans at National Diploma level for all the programmes at University of Technology is 735 while at BTech level is only 92. It was evident from the finding that many Africans do not register for Higher-level qualifications.

These trends were also evident in 2003 and 2004 figures. If these trends continue, the supply of high level skill will not match and therefore not address skills demands of the agricultural public sector, and it will add to the problem of unemployed agricultural graduates in the sector, particularly looking at the academic level at which the majority of enrolments and graduates are recorded. The lowest enrolment and graduate figures at Postgraduate level is also a cause for concern considering the fact that Research Scientists have been identified as some of the critical skills required in the sector. There is a need to investigate factors influencing the trends in order to implement interventions which will reverse the situation.

Chapter 4

Agricultural education and training at universities in 2005 academic year

Chapter 4

Agricultural Education and Training at Universities 2005 academic year

4.1 Introduction

Ten (10) universities offer AET programmes in South Africa namely: Fort Hare, North West, Free State, KwaZulu-Natal, Limpopo, Pretoria, Stellenbosch, Venda, UNISA and Zululand. These institutions offer agricultural qualifications from NQF level 5 to level 8 i.e. from university Diploma to Doctor of Philosophy (PhD) programmes.

4.2 Agricultural Education and Training programmes and National Qualification Framework offered at Universities in 2005

All the universities offer various agricultural programmes and they vary in terms of scope. University of KwaZulu-Natal is the only university that offers Agricultural Engineering programmes and University of Pretoria is the only institution that offers Veterinary Science studies in the country.

Table 47 depicts various programmes offered by universities. Universities have broad scope on agricultural curricula.

Table 47: Agricultural programmes offered by universities.

	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
N certificate programmes										
N Cert Commercial Floristry										X
National diploma programmes										
N Dip Horticulture										X
N Dip Nature Conservation										X
N Dip Open Space & Recreation Management										X
Diploma in Disaster Management			X							
Diploma in Agriculture			X							
N. Dip Science and Agriculture				X						
Diploma in Rural Resource Management				X						
Diploma Food Security				X						
Diploma Animal Health		X								X
Diploma in Agriculture: Animal Production			X							
Diploma in Agriculture: Crop Production			X							
Diploma in Agriculture: Agricultural Management			X							X
Diploma in Agriculture: Natural Resources			X							
Univ. Dip Ext and Rural Develop						X				
Diploma in Agric Economics and Management		X								
BTech programmes										
B Tech Horticulture										X
B Tech Nature Conservation										X
B Tech Agricultural Management										X
B.A. degree programmes										
B Human Ecology										X

Table 47: Agricultural programmes offered by universities.										
	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
B Consumer Science Educations										X
B Consumer Science										X
B Human Ecology (Community Nutrition)										X
B Human Ecology (Community Agriculture)										X
B. Agric-Economics	X									
B. Agric-Ext/Prod	X									
B. and Agric. Sci. (UP) Foreign Post D. Fellowship						X				
B & Agric Sci. (FRD) Foreign Post D. Fellowship						X				
B. Agric: Irrigation Management			X							
B. Agric: Animal Production Management			X							
B. Agric: Mixed Farming Management			X							
B. Agric: Crop Production Management			X							
B. Agric: Agriculture Management			X	X						
B. Agric: Wildlife Management			X							
B .Agric Management /Admin					X		X			
B .Agric			X	X			X	X		
Bachelor of Family Ecology								X		
Bachelor of Forestry							X			
BAgricAdmin							X			
BAgricAdmin Agri-business Management							X			
BAgricAdmin Business Specific Farm Management-Viticulture							X			
Bachelor of AgriBusiness Management						X		X		
Bachelor of Family Ecology and Consumer Science								X		
B Sc Degree Programmes										
B ScAgric Soil Science and Chemistry							X			
B ScAgric Soil Science and Horticulture							X			
B ScAgric Soil Science and Viticulture							X			
B ScAgric Horticulture and Entomology							X			
B ScAgric Horticulture and Genetics							X			
B ScAgric Horticulture and Agric Economics							X			
B ScAgric Horticulture and Plant Pathology							X			
B ScAgric Agronomy and Entomology							X			
B ScAgric Agronomy and Genetics							X			
B ScAgric Agronomy and Agricultural Economics							X			
B ScAgric Agronomy and Plant Pathology							X			
BScAgric Soil Science and Agronomy							X			
BScAgric Animal Science							X			
BScAgric Animal Science with Agronomy							X			
BScAgric Animal Science with Conservation Ecology							X			

Table 47: Agricultural programmes offered by universities.										
	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
BScAgric Animal Science with Agricultural Economics							X			
BScAgric Aquaculture and Animal Science							X			
BScAgric Aquaculture & Conservative Ecology							X			
BScAgric Plant Pathology and Entomology							X			
BScAgric Aquaculture							X			
B Sc Food Science							X			
B Sc Agriculture		X	X	X	X		X	X	X	
B Sc Food Science and Technology			X				X	X		
B Sc Forestry							X	X		
B Sc Agric- Animal Science									X	
B Sc Conservation Ecology							X			
B Sc Agric. Economics		X	X		X	X				
B Sc Agric. Agronomy			X		X				X	
B Sc Animal Production					X					
B Sc Horticulture					X	X				
B Sc Agric. Pasture Science					X					
B Sc Soil Science and Agronomy and Pastures							X			
B Sc Agric Soil Science			X		X					
B Sc Environmental & Resource Studies					X					
BSc Crop Science		X								
BSc Animal Health		X								
BSc Land Management		X								
B Sc Agronomy and Agro meteorology			X							
B Sc Plant Pathology			X			X				
BSc Irrigation Science			X							
B.Sc Plant Pathology & Entomology			X							
BSc Plant Breeding and Genetics			X			X				
BSc Natural Agricultural Resources			X							
BSc Animal Science / Grassland Science		X	X							
BSc Food Science and Biochemistry			X							
BSc Food Science & Microbiology			X							
BSc Food Science & Chemistry			X							
BSc Agric. Econ. Agri-Business Management						X			X	
BSc Animal Science and Animal Genetics						X				
BSc Food Science & Technology						X				
BSc Genetics: Plant Breeding						X				
BSc Plant Production						X				
BSc Plant Protection						X				
BSc Food Management						X				
BSc Nutrition & Food Science						X				

Table 47: Agricultural programmes offered by universities.										
	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
BSc Agric Genetics & Plant Pathology							X			
BSc Conservation Ecology							X			
B Sc Agriculture							X			
BSc Agriculture Science										X
B Inst. Agrar. programmes										
B.Inst. Agrar: Agric.Econ: Animal Production						X				
B. Inst. Agrar: Agronomy/Horticulture						X				
B. Inst. Agrar: Animal Production						X				
B. Inst. Agrar: Animal Production Management						X				
B. Inst. Agrar: Crop Protection						X				
B. Inst. Agrar: Food Production & Process.						X				
B. Inst. Agrar: Land-Use Planning						X				
B. Inst. Agrar: Plant Protection						X				
B. Inst. Agrar: Rural Development Management						X				
Honours degree programmes										
BAgricAdmin							X			
B Sc Conservation Ecology							X			
B Sc Food Science							X			
B Sc in Geography										X
B A. Geography										X
B .Agric	X		X	X						
BSc Food Science						X				
B .Agric. Extension	X									
B .Agric. Crop/Horticulture	X									
B .Agric. Pasture/Livestock	X									
B .Agric. Management			X	X						
B. Agric. Admin					X		X			
Rural Development								X		
BAgricAdmin Hons Horticulture							X			
BSc Agric: Animal Health		X								
BSc Agric: Crop Science	X	X								
BSc Agric: Animal Science	X	X							X	
BSc Agric: Economics	X	X	X							
BSc Agric: Extension		X								
BSc Agric: Land Management		X								
BSc Forestry							X			
BSc Agric			X				X		X	
BSc Biotechnology			X							
BSc Soil Science	X		X							
BSc Plant Breeding			X							

Table 47: Agricultural programmes offered by universities.										
	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
BSc Plant Pathology			X							
BSc Animal Science	X		X							
BSc Wildlife Management			X							
B.Com.(Hons): Actuarial Science						X				
B.Com. (Hons): Agricultural Economics						X				
B. Inst. Agrar. (Hons): Agribusiness Management						X				
B. Inst. Agrar. (Hons): Agricultural Economics						X				
B. Inst. Agrar. (Hons): Crop Protection						X				
B. Inst. Agrar. (Hons): Extension						X				
B. Inst. Agrar. (Hons): Food Processing						X				
B. Inst. Agrar. (Hons): Food Product. and Process.						X				
B. Inst. Agrar. (Hons): Land-Use Planning						X				
B. Inst. Agrar. (Hons): Plant Production						X				
B. Inst. Agrar. (Hons): Rural Devel. Planning						X				
MTech programmes										
MTech Nature Conservation										X
Masters degree programmes										
MPhil Livestock Industry Management							X			
MPhil Livestock Industry: Aquaculture							X			
MPhil Livestock Industry: Pig Production Sciences							X			
MPhil Livestock Industry: Poultry Science							X			
Assisted Reproduction							X			
MPhil Livestock Industry : Dairy Science							X			
MPhil Agriculture							X			
M A Geography										X
Master in Human Ecology										X
Master of Consumer Science										X
M. Agric. Admin/ Management				X	X		X			
M .A. Agriculture			X	X						
MSc Geography										X
MSc Environmental Science										X
M .Phil							X			
M Sc Food Science							X			
M Forestry							X			
MSc Forestry							X			
MSc Agriculture		X	X	X	X		X	X	X	
MSc Conservation Ecology							X			
MSc Food Science and Technology						X	X	X		
Masters in Rural Development								X		
M. A. Agric Economics	X				X	X				

Table 47: Agricultural programmes offered by universities.

	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
M .A. Agric Extension	X				X					
M .Phil Environmental Studies	X									
MSc Agric: Crop Science	X				X					
MSc Agric: Animal Science	X					X	X			
MSc Agric: Soil Science	X				X	X	X			
MSc Agric: Horticulture	X				X	X	X			
MSc Plant Production						X				
MSc Agric: Pasture Science	X				X					
MSc Agric: Geography and Environmental Science	X									
MSc Agric: Plant Protection & Plant Pathology					X					
MSc Agronomy						X				
MSc Agric: Remote Sensing					X					
M .A : Disaster Management			X							
M .A: Sustainable Agriculture			X							
M. Com: Agric Economics						X				
M. Inst. Agrar: Agric. Economics						X				
M. Inst. Agrar: Agronomy						X				
M. Inst. Agrar: Animal Production Management						X				
M. Inst. Agrar: Animal Production						X				
M. Inst. Agrar: Crop Protection						X				
M. Inst. Agrar: Environmental Management						X				
M. Inst. Agrar: Extension						X				
M. Inst. Agrar: Food Processing						X				
M. Inst. Agrar: Food Production & Processing						X				
M. Inst. Agrar: Horticulture						X				
M. Inst. Agrar: Land Devel.						X				
M. Inst. Agrar: Land-Use Planning						X				
M. Inst. Agrar: Plant Production: Agronomy						X				
M. Inst. Agrar: Plant Production: Horticulture						X				
M. Inst. Agrar: Plant Protection						X				
M. Inst. Agrar: Rural Develop.& Ecotourism						X				
M. Inst. Agrar: Rural Development Planning						X				
M. Inst. Agrar: Rural Household Devel. (Diss)						X				
M. Inst. Agrar: Sust. Ecol. Management						X				
M. Inst. Agrar: Sust. Insect Management.						X				
MSc Agric Agronomy						X	X			
MSc Agric Entomology, Nematology and Insect pest management							X			
Wildlife (M. Inst. Agrar)						X				
MSc Animal Breeding & and Genetics						X				
MSc Agric Aquaculture							X			

Table 47: Agricultural programmes offered by universities.										
	University Fort Hare	University of North West	University of Free State	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of Venda	University of Zululand	University of South Africa
MSc Agric Plant Pathology							X			
MSc Agric Genetics							X			
MSc Genetics						X				
MSc Microbiology						X				
MSc Plant Biotechnology						X				
PhD Degree Programmes										
PhD : Agricultural Administration							X			
PhD: Literature & Philosophy in Geography										X
PhD : Geography										X
PhD: Environmental Management										X
PhD: Environmental Science										X
PhD: Agrarian Extension						X				
PhD: Agricultural Economics	X					X				
PhD (Agric) Animal Science							X			
PhD (Agric) Animal Physiology							X			
PhD (Agric) Plant Pathology							X			
PhD (Agric) Horticulture							X			
PhD (Agric) Soil Science							X			
PhD (Agric) Genetics							X			
PhD (Agric) Entomology							X			
PhD: Agronomy						X				
PhD (Agric) Agronomy							X			
PhD: Animal Production						X				
PhD: Animal Science						X				
PhD: Crop Protection						X				
PhD: Food Science						X	X			
PhD: Horticultural Science						X				
PhD: Pasture Science						X				
PhD: Plant Production: Agronomy						X				
PhD: Plant Production: Horticulture						X				
PhD: Plant Production: Pasture Science						X				
PhD: Rural Development Planning						X				
PhD: Soil Science	X					X				
PhD: Soil Science and Plant Nutrition						X				
PhD. Agriculture				X	X	X	X	X	X	
PhD Science and Agriculture				X						
PhD Crop Science	X									
PhD Geography and Environmental Science	X									
PhD Conservation Ecology							X			
PhD Forestry							X			

Table 48 outlines the NQF ratings at universities i.e. the programme levels and matching NQF levels of these programmes (Department of Agriculture 2005).

Table 48: NQF levels at universities		
NQF Level	**Band**	**Types of qualification and Certificates**
8	**Higher Education and Training Band**	**Doctorate/ further Research Degree**
7		**Higher Degree/Professional Qualifications**
6		**First Degree/ Higher Diplomas**
5		**Diplomas/Occupational Certificates**

The rating of the university programmes in terms of NQF standards is similar to the Universities of Technology. The lowest agricultural qualification offered at both universities is the NQF level 5 i.e. Diploma and the highest qualification is NQF level 8 which is the PhD.

4.3 Enrolments in Agricultural Education and Training Programmes at Universities in 2005

Table 49 depicts the enrolments at universities for the 2005 academic year.

Table 49: Enrolments per universities for the 2005 Academic Year		
Name of the university	**Number of AET enrolments**	**Percentage (%)**
University of Fort Hare	**415**	**5**
University of North West	**786**	**9**
University of Free State	**729**	**9**
University of KwaZulu Natal	**621**	**7**
University of Limpopo	**681**	**8**
University of Pretoria	**1 220**	**15**
University of South Africa	**1 597**	**19**
University of Stellenbosch	**1 742**	**22**
University of Venda	**404**	**5**
University of Zululand	**107**	**1**
Total	**8 302**	**100**

University of Stellenbosch constituted 22% of the total enrolments for the 2005 academic year. University of South Africa enrolled 19%, followed by Pretoria with 15%. North West and Free State constituted 9% each. Limpopo, KwaZulu Natal, Fort Hare, Venda, and Zululand all enrolled less than 9% each of the total enrolments at universities 2005.

Figure 72: Enrolments at universities

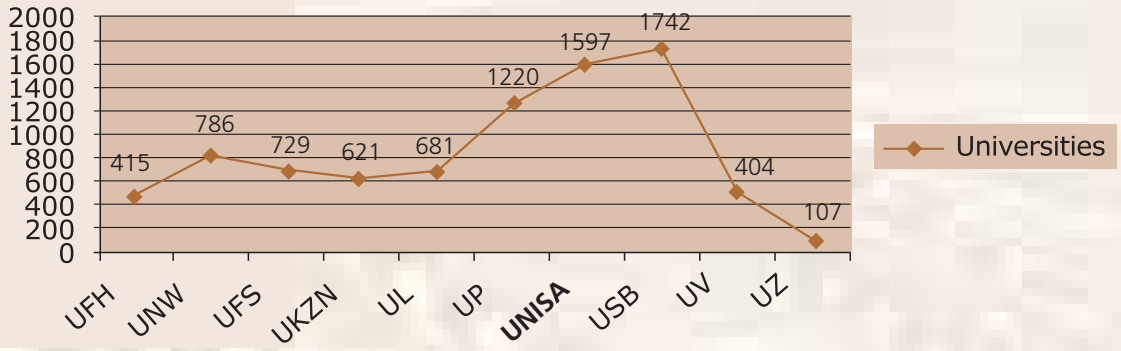


Figure 72 and Table 48 depicts that University of Stellenbosch continued to enroll the highest number of students than any other university, as is the case in the 2004 academic year, dominating with 22% of the total enrolments. However, University of South Africa and University of Pretoria also enrolled a very large number of students accounting for 19% and 15% of the total enrolments respectively at universities for the academic year 2005. As was the trend in the 2004 academic year, institutions with many programmes have enrolled more students than those institutions with few programmes. This is evident as well when looking at institutions that were not covered by the 2004 academic year study, which also have fewer agricultural programmes e.g. University of Zululand. This institution offer very few programmes and as result it attracted very few students for the 2005 academic year. Accordingly, in the 2004 academic year this study categorized UNISA as a University of Technology. For the 2005 academic year Unisa introduced a College of Agriculture and had a string of agricultural programmes, which attracted a very significant number of students.

4.3.1 Demographic Breakdown of Agricultural Education and Training Enrolments at Universities in 2005

Table 50 depicts a demographic breakdown of AET enrolments at universities for the 2005 academic year:

Table 50: Breakdown of enrolments by gender and race per university

Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
University Fort Hare	259	156	**415**	0	0	**0**	0	0	**0**	0	0	**0**	**415**
University North West	353	433	**786**	0	0	**0**	0	0	**0**	0	0	**0**	**786**
University of Free State	178	90	**268**	8	6	**14**	363	83	**446**	1	0	**1**	**729**
University of KwaZulu Natal	208	119	**327**	6	4	**10**	99	129	**228**	19	37	**56**	**621**
University of Limpopo	408	273	**681**	0	0	**0**	0	0	**0**	0	0	**0**	**681**
University of Pretoria	196	167	**363**	3	6	**9**	584	247	**831**	7	10	**17**	**1 220**
University of South Africa	550	472	**1022**	17	8	**25**	316	214	**530**	9	11	**20**	**1 597**
University of Stellenbosch	91	69	**160**	48	48	**96**	883	597	**1 480**	5	1	**6**	**1 742**
University of Venda	247	157	**404**	0	0	**0**	0	0	**0**	0	0	**0**	**404**
University of Zululand	59	48	**107**	0	0	**0**	0	0	**0**	0	0	**0**	**107**
Total	2 549	1 984	**4 533**	82	72	**154**	2 245	1 270	**3 515**	41	59	**100**	**8 302**

Figure 73: Gender breakdown of AET enrolments at universities

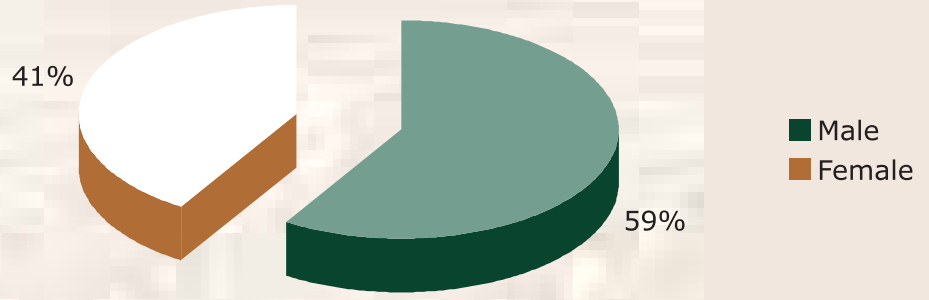
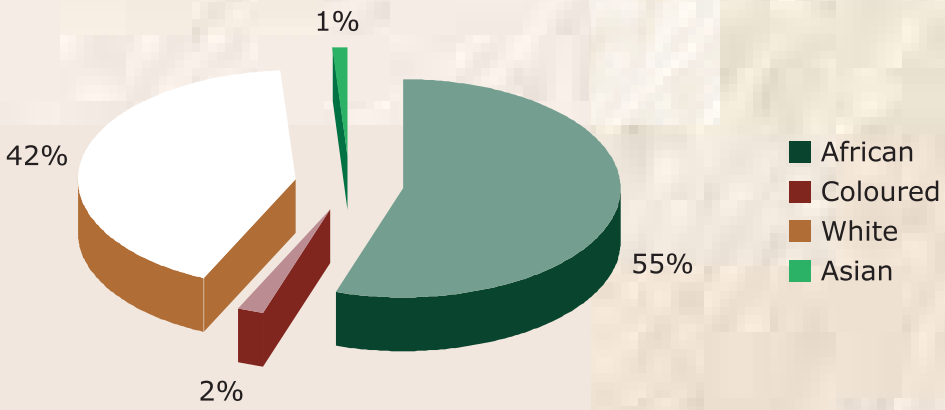


Figure 73 illustrates the gender breakdown of enrolments at universities for the 2005 academic year. Male students constituted 59% and female students comprised 41% of total enrolments for the 2005 academic year in universities.

Figure 74: Rarcial breakdown of AET enrolments at universities



African students dominated the enrolments at universities during the 2005 academic year with 55% followed by White students with 42%. Coloured and Asian students accounted for 2% and 1% respectively.

Figure 75: Racial breakdown of female AET enrolments at universities

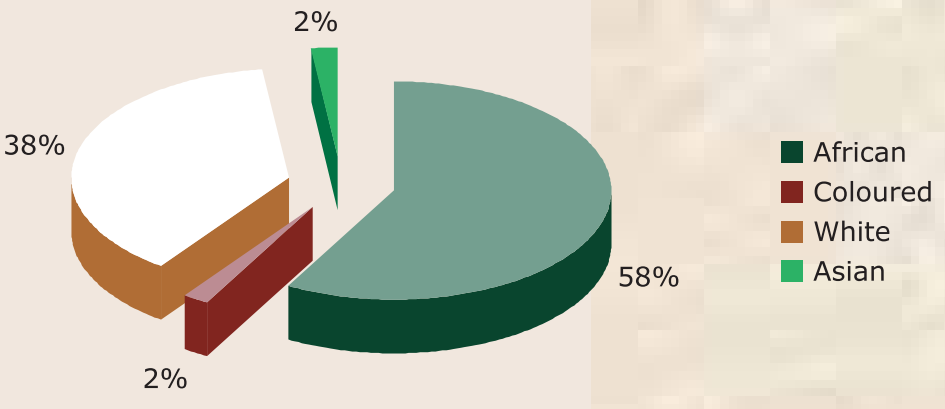


Figure 75 depicts that African females dominated the female AET enrolments with 58% followed by White females with thirty 38%. Coloured and Asian females registered low student figures each at 2%.

Figure 76: Racial breakdown of male AET enrolments at universities

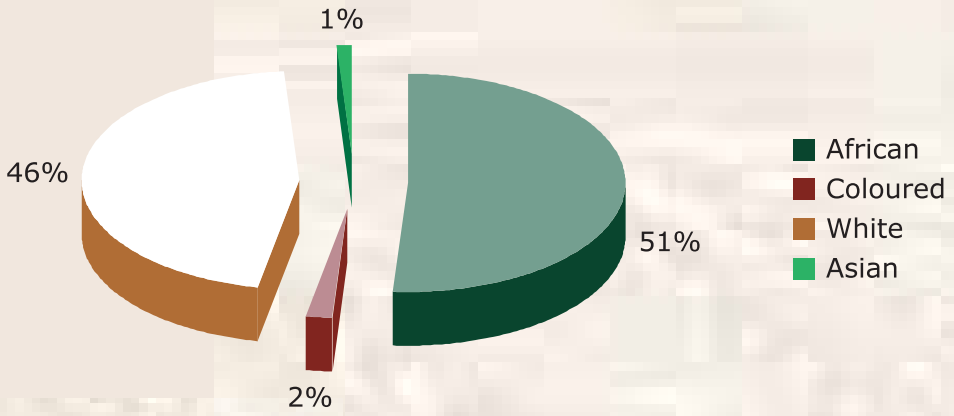


Figure 76 depicts that African males constituted 51% and White males accounted for 46% of the male enrolments at universities for the 2005 academic year. Coloured and Asian males together constituted only 3% of the total male enrolments for the 2005 academic year.

4.3.2 Agricultural Enrolments at Universities by CESM in 2005

Table 51 presents enrolments at universities by Category of Education Subject Matter (CESM).

Table 51: Agricultural enrolments in universities in 2005 by CESM and academic level.

CESM	UNDER-GRADUATE	POSTGRADUATE DIPLOMA	HONOURS	MASTERS	PHD	TOTAL	%
Agricultural Economics (Science Stream)	187	14	9	49	36	295	4
Agricultural Economics (Art Stream)	117	0	5	4	0	126	2
Agricultural Economics (BCom Stream	0	0	3	7	1	11	0
Agricultural Eco. (AgriBusiness)	181	0	22	0	0	203	2
Agricultural Science (Art Stream)	488	0	4	59	12	563	7
Agricultural Science (Science Stream)	870	23	11	273	207	1384	17
Agricultural Extension (Inst. Agrar. Stream)	0	0	5	9	0	14	0
Agricultural Extension	131	36	10	59	5	241	3
Agricultural Food Technology	347	25	9	42	23	446	5
Animal Science	1099	0	40	151	22	1312	16
Horticulture	41	0	3	38	21	103	1
Plant Science	103	0	18	44	20	185	2
Plant Science (Inst.Agrar Stream)	11	0	2	4	0	17	0
Rural Development	0	0	17	11	2	30	0
Soil Science	70	0	2	27	14	113	1
Forestry	46	0	0	25	15	86	1
Renewable Natural Resources	96	3	0	14	11	124	1
Agricultural Management	1405	0	50	100	0	1555	19
Other Agricultural and Renewable Resources	9	0	0	168	0	177	2
Agricultural Food Tech (Inst. Agrar. Stream)	20	0	2	4	0	26	0
Animal Sc (Insta. Agrar. Stream)	4	0	0	11	0	15	0
Horticulture (Inst. Agrar. Stream)	0	0	0	5	0	5	0
Land Reclamation (Land Use Inst. Agrar. Stream)	5	0	1	6	0	12	0

Table 51: Agricultural enrolments in universities in 2005 by CESM and academic level.							
CESM	**UNDER-GRADUATE**	**POSTGRADUATE DIPLOMA**	**HONOURS**	**MASTERS**	**PHD**	**TOTAL**	**%**
Rural Dev (Inst. Agrar. Stream)	**3**	**0**	**3**	**6**	**2**	**14**	**0**
Agricultural Econ (Inst. Agrar. Stream)	**1**	**0**	**6**	**19**	**0**	**26**	**0**
Environmental Management	**137**	**0**	**171**	**16**	**9**	**333**	**4**
Land Reclamation (Land Use)	**45**	**0**	**5**	**0**	**0**	**50**	**1**
Agronomy	**97**	**0**	**4**	**16**	**11**	**128**	**2**
Agronomy (Inst. Agrar. Stream)	**1**	**0**	**0**	**3**	**0**	**4**	**0**
Wildlife	**6**	**0**	**7**	**62**	**3**	**78**	**1**
Consumer Science	**568**	**0**	**0**	**50**	**8**	**626**	**8**
TOTAL	**6 088**	**101**	**409**	**1282**	**422**	**8 302**	
%	**73**	**1**	**5**	**16**	**5**		**100**

The table above indicates that universities offer various agricultural programmes under the CESM. The focus of this section is on the AET enrolments by level of qualification per CESM and the demographic breakdown of enrolments in each CESM.

The above table indicates that the Undergraduate level dominated the overall AET enrolments at universities with 73%, followed by Masters enrolments with 16%. Honours and PhD enrolments accounted for 5% each. Postgraduate Diploma registered the least number of students with 1% of the overall enrolments.

Table 51 indicates that Agricultural Management, Agricultural Science (Science Stream) and Animal Science enrolled the highest number of students at universities with 19%, 17% and 16% respectively.

Consumer Science and Agricultural Science (Art Stream) enrolled 8% and 7% of the overall enrolments for the 2005 academic year at universities respectively. All other CESM enrolled less than 6% of the overall enrolments.

4.3.3 Breakdown of Agricultural Education and Training Enrolments at Universities by CESM in 2005

Table 52 outlines the enrolments at Undergraduate level at universities for 2005.

Table 52: Enrolments in Undergraduate programmes by CESM at universities in 2005													
CESM Category (Undergraduate)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agricultural Economics (Science Stream)	103	64	**167**	0	0	**0**	15	5	**20**	0	0	**0**	**187**
Agricultural Economics (Art Stream)	66	50	**116**	0	0	**0**	1	0	**1**	0	0	**0**	**117**
Agricultural Eco. (AgriBusiness)	42	35	**77**	1	1	**2**	94	7	**101**	1	0	**1**	**181**
Agricultural Science (Art Stream)	179	78	**257**	16	6	**22**	149	60	**209**	0	0	**0**	**488**
Agricultural Science (Science Stream)	127	90	**217**	17	18	**35**	369	237	**606**	3	9	**12**	**870**
Agric. Extension	93	38	**131**	0	0	**0**	0	0	**0**	0	0	**0**	**131**
Agric. Food Technology	39	55	**94**	5	12	**17**	23	186	**209**	5	22	**27**	**347**
Animal Science	352	381	**733**	3	5	**8**	184	171	**355**	1	2	**3**	**1099**
Horticulture	11	7	**18**	0	0	**0**	16	7	**23**	0	0	**0**	**41**
Plant Science	18	29	**47**	0	1	**1**	38	17	**55**	0	0	**0**	**103**
Soil Science	33	13	**46**	1	1	**2**	14	8	**22**	0	0	**0**	**70**
Forestry	10	7	**17**	1	2	**3**	21	4	**25**	0	1	**1**	**46**
Renewable Natural Resources	2	3	**5**	1	2	**3**	42	46	**88**	0	0	**0**	**96**
Agric. Management	537	301	**838**	6	4	**10**	405	151	**556**	1	0	**1**	**1405**

Table 52: Enrolments in Undergraduate programmes by CESM at universities in 2005													
CESM Category (Undergraduate)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Other Agric. and Renewable Resources	0	0	**0**	0	0	**0**	8	1	**9**	0	0	**0**	**9**
Environmental Management	75	62	**137**	0	0	**0**	0	0	**0**	0	0	**0**	**137**
Land Reclamation	34	11	**45**	0	0	**0**	0	0	**0**	0	0	**0**	**45**
Agronomy	38	29	**67**	1	0	**1**	24	5	**29**	0	0	**0**	**97**
Wildlife	0	0	**0**	0	1	**1**	5	0	**5**	0	0	**0**	**6**
Consumer Science	95	91	**186**	3	1	**4**	17	357	**374**	1	3	**4**	**568**
Plant Science (Inst.Agrar Stream)	4	1	**5**	0	0	**0**	3	2	**5**	1	0	**1**	**11**
Agric. Food Tech (Inst. Agrar. Stream)	4	14	**18**	0	0	**0**	1	1	**2**	0	0	**0**	**20**
Animal Science (Inst. Agrar Stream)	1	1	**2**	0	0	**0**	1	1	**2**	0	0	**0**	**4**
Land Reclamation (Inst.Agrar. Stream)	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Rural Development (Inst.Agrar. Stream)	2	0	**2**	0	0	**0**	1	0	**1**	0	0	**0**	**3**
Agric. Economics (Inst. Agrar. Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agronomy (Inst.Agrar. Stream)	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	1 869	1 363	**3 232**	55	54	**109**	1 431	1 266	**2 697**	13	37	**50**	**6 088**

Table 52 indicates that Agricultural Management, Animal Science and Agricultural Science (Science Stream) contributed the highest number of Undergraduate enrolments at universities with 23%, 18% and 14% respectively. The lowest figures at Undergraduate level were recorded at Agricultural Economics (Inst.Agrar.Stream) and Agronomy (Inst.Agrar. Stream) with only 1 student each.

African students constituted 53% of the total enrolments at Undergraduate level followed by White students with 44% for the 2005 academic year. Coloured and Asian students enrolments at Undergraduate level were relatively very low and together they constituted only 3%.

Table 53 outlines the enrolments at Postgraduate Diploma level at universities for 2005.

Table 53: Postgraduate Diploma enrolments by CESM at universities in 2005													
CESM Category (Postgraduate Diploma)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agricultural Economics (Science Stream)	3	11	**14**	0	0	**0**	0	0	**0**	0	0	**0**	**14**
Agricultural Science (Science Stream)	7	9	**16**	2	0	**2**	1	2	**3**	1	1	**2**	**23**
Agricultural Extension	3	9	**12**	0	0	**0**	15	9	**24**	0	0	**0**	**36**
Agricultural Food Technology	2	8	**10**	0	1	**1**	0	12	**12**	0	2	**2**	**25**
Renewable Natural Resources	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
TOTAL	17	38	**55**	2	1	**3**	16	23	**39**	1	3	**4**	**101**

Agricultural Extension and Agricultural Food Technology constituted the highest number of enrolments with 36% and 25% respectively. The lowest enrolments were registered at Renewable Natural Resources with only 3 students.

African and White students contributed 54% and 39% of the total Postgraduate Diploma enrolments for the 2005 academic year, respectively. Asians accounted for 4% and Coloureds constituted 3% of the total enrolments at Postgraduate Diploma level in the 2005 academic year.

Table 54 outlines the enrolments at Honours level at universities for 2005 academic year.

Table 54: Enrolments in Honours degree by CESM at universities in 2005

CESM Category (Honours)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	1	6	**7**	0	0	**0**	2	0	**2**	0	0	**0**	**9**
Agricultural Economics (Art Stream)	4	1	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Agricultural Economics (BCom Stream)	0	1	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**3**
Agricultural Eco. (AgriBusiness)	12	10	**22**	0	0	**0**	0	0	**0**	0	0	**0**	**22**
Agricultural Science (Art Stream)	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**
Agricultural Science (Science Stream)	3	2	**5**	0	0	**0**	6	0	**6**	0	0	**0**	**11**
Agric. Extension	8	2	**10**	0	0	**0**	0	0	**0**	0	0	**0**	**10**
Agric. Food Technology	1	3	**4**	0	0	**0**	1	4	**5**	0	0	**0**	**9**
Animal Science	14	20	**34**	0	0	**0**	4	2	**6**	0	0	**0**	**40**
Horticulture	0	1	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**3**
Plant Science	7	3	**10**	0	0	**0**	6	2	**8**	0	0	**0**	**18**
Soil Science	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**
Rural Development	8	9	**17**	0	0	**0**	0	0	**0**	0	0	**0**	**17**
Agric. Management	28	17	**45**	1	0	**1**	4	0	**4**	0	0	**0**	**50**
Environmental Management	60	67	**127**	6	2	**8**	12	12	**24**	5	7	**12**	**171**
Land Reclamation	2	3	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Agronomy	3	0	**3**	0	0	**0**	1	0	**1**	0	0	**0**	**4**
Wildlife	2	0	**2**	0	0	**0**	1	4	**5**	0	0	**0**	**7**
Agricultural Extension (Inst.Agrar Stream)	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Plant Science (Inst.Agrar Stream)	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Agric. Food Tech (Inst. Agrar. Stream)	1	0	**1**	0	1	**1**	0	0	**0**	0	0	**0**	**2**
Land Reclamation (Inst.Agrar. Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Rural Development (Inst.Agrar. Stream)	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
Agric. Economics (Inst. Agrar. Stream)	2	4	**6**	0	0	**0**	0	0	**0**	0	0	**0**	**6**
Total	168	153	**321**	7	3	**10**	41	25	**66**	5	7	**12**	**409**

Environmental Management, Rural Development and Animal Science registered the highest number of students at Honours level in the overall AET programmes with 42%, 12% and 10% respectively. Other programmes have registered less than 10% of the overall Honours enrolments.

African students constituted the majority of enrolments at 79%. White students enrolments account for 16% at Honours in the 2005 academic year. Asian and Coloured enrolments at Honours were the lowest and together they comprised of 5%.

Table 55 outlines the enrolments at Masters level at universities for 2005 academic year.

Table 55: Enrolments in Masters degree by CESM at universities in 2005

CESM Category (Masters)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	23	13	**36**	0	0	**0**	8	3	**11**	0	2	**2**	**49**
Agricultural Economics (Art Stream)	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**
Agricultural Economics (MCom Stream)	0	1	**1**	0	0	**0**	3	3	**6**	0	0	**0**	**7**
Agricultural Science (Art Stream)	18	12	**30**	1	1	**2**	17	9	**26**	1	0	**1**	**59**
Agricultural Science (Science Stream)	81	35	**116**	4	4	**8**	78	61	**139**	7	3	**10**	**273**
Agric. Extension	30	27	**57**	0	0	**0**	0	1	**1**	0	1	**1**	**59**
Agric. Food Technology	8	7	**15**	0	0	**0**	4	22	**26**	0	1	**1**	**42**
Animal Science	36	38	**74**	1	1	**2**	39	35	**74**	1	0	**1**	**151**
Horticulture	6	4	**10**	1	0	**1**	15	12	**27**	0	0	**0**	**38**
Plant Science	14	17	**31**	2	0	**2**	5	6	**11**	0	0	**0**	**44**
Rural Development	6	5	**11**	0	0	**0**	0	0	**0**	0	0	**0**	**11**
Soil Science	9	7	**16**	0	1	**1**	7	3	**10**	0	0	**0**	**27**
Forestry	10	2	**12**	1	0	**1**	10	2	**12**	0	0	**0**	**25**
Renewable Natural Resources	1	2	**3**	0	0	**0**	2	9	**11**	0	0	**0**	**14**
Agric. Management	44	39	**83**	0	0	**0**	11	5	**16**	0	1	**1**	**100**
Other Agric. and Renewable Resources	65	21	**86**	3	1	**4**	68	10	**78**	0	0	**0**	**168**
Environmental Management	6	6	**12**	0	0	**0**	1	1	**2**	2	0	**2**	**16**
Agronomy	5	4	**9**	0	0	**0**	5	2	**7**	0	0	**0**	**16**
Wildlife	2	1	**3**	1	0	**1**	40	18	**58**	0	0	**0**	**62**
Consumer Science	3	35	**38**	0	0	**0**	2	10	**12**	0	0	**0**	**50**
Agric. Extension (Inst. Agrar. Stream)	7	1	**8**	0	0	**0**	0	1	**1**	0	0	**0**	**9**
Plant Science (Inst.Agrar Stream)	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**
Agric. Food Tech (Inst. Agrar. Stream)	0	4	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**
Animal Science (Inst. Agrar Stream)	9	0	**9**	1	0	**1**	0	0	**0**	1	0	**1**	**11**
Land Reclamation (Inst.Agrar. Stream)	2	1	**3**	0	0	**0**	3	0	**3**	0	0	**0**	**6**
Rural Development (Inst.Agrar. Stream)	4	1	**5**	0	0	**0**	0	1	**1**	0	0	**0**	**6**
Agric. Economics (Inst. Agrar. Stream)	13	4	**17**	0	1	**1**	0	0	**0**	1	0	**1**	**19**
Agronomy (Inst.Agrar. Stream)	2	0	**2**	0	0	**0**	0	1	**1**	0	0	**0**	**3**
Horticulture (Inst.Agrar. Stream)	2	3	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Total	410	294	**704**	15	9	**24**	318	215	**533**	13	8	**21**	**1282**

Agricultural Science (Science Stream), Other Agricultural and Renewable Resources and Animal Science were the programmes that have registered the highest number of Masters students with 21%, 13% and 12% respectively. The other programmes have registered the least number of students.

African and White students account for 54% and 42% of the Masters level enrolments at universities respectively. Coloureds and Asians together constitute only 4% on the total Masters enrolments in the 2005 academic year.

Table 56 shows the enrolments at the PhD level at universities for 2005 academic year.

Table 56: Enrolments in PhD degree by CESM at universities in 2005

CESM Category (PhD)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	18	11	**29**	0	1	**1**	5	0	**5**	0	1	**1**	**36**
Agricultural Economics (BCom Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agricultural Science (Art Stream)	3	0	**3**	0	0	**0**	7	2	**9**	0	0	**0**	**12**
Agricultural Science (Science Stream)	81	17	**98**	2	2	**4**	52	42	**94**	8	3	**11**	**207**
Agric. Extension	2	2	**4**	0	0	**0**	1	0	**1**	0	0	**0**	**5**
Agric. Food Technology	5	7	**12**	1	0	**1**	0	10	**10**	0	0	**0**	**23**
Animal Science	5	2	**7**	2	3	**5**	5	5	**10**	0	0	**0**	**22**
Horticulture	7	1	**8**	0	1	**1**	5	7	**12**	0	0	**0**	**21**
Plant Science	3	1	**4**	0	1	**1**	10	5	**15**	0	0	**0**	**20**
Rural Development	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Soil Science	4	0	**4**	0	0	**0**	5	5	**10**	0	0	**0**	**14**
Forestry	7	2	**9**	1	0	**1**	4	1	**5**	0	0	**0**	**15**
Renewable Natural Resources	2	0	**2**	0	0	**0**	5	4	**9**	0	0	**0**	**11**
Environmental Management	2	2	**4**	0	0	**0**	0	4	**4**	1	0	**1**	**9**
Agronomy	6	0	**6**	0	0	**0**	2	2	**4**	1	0	**1**	**11**
Wildlife	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**
Consumer Science	0	1	**1**	0	0	**0**	0	7	**7**	0	0	**0**	**8**
Rural Development (Inst.Agrar. Stream)	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**
Total	149	46	**195**	6	8	**14**	104	95	**199**	10	4	**14**	**422**

Agricultural Science (Science Stream) was the only programme that has registered the highest number of students at PhD level with 49% and the other programmes have registered less than 10% of the total number of PhD enrolments.

At PhD level, White students constitute 48% followed by African students with 46% of the total PhD enrolments in the 2005 academic year. Coloured and Asian students account for 3% each.

4.3.3.1 Agricultural Economics (Science Stream) Enrolments at Universities in 2005

Two hundred and ninety five (295) students enrolled in this CESM for the 2005 academic year at universities. Programmes in this CESM are offered by University of Fort Hare, Free State, Limpopo, North West and University of Pretoria. Agricultural Economics (Science stream) includes programmes in;

- Agric Economics/Livestock/Extension, Agric Economics/Plant Production, Agricultural Economics (General), Agricultural Economics (Natural) and Environmental Economics.

Table 57 depicts a demographic breakdown of Agricultural Economics enrolments for the 2005 academic year by qualification level.

Table 57: Demographic breakdown of Agricultural Economics (Science Stream) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	103	64	**167**	0	0	**0**	15	5	**20**	0	0	**0**	**187**
Postgraduate diploma	3	11	**14**	0	0	**0**	0	0	**0**	0	0	**0**	**14**
Honours	1	6	**7**	0	0	**0**	2	0	**2**	0	0	**0**	**9**
Masters	23	13	**36**	0	0	**0**	8	3	**11**	0	2	**2**	**49**
PhD	18	11	**29**	0	1	**1**	5	0	**5**	0	1	**1**	**36**
TOTAL	148	105	**253**	0	1	**1**	30	8	**38**	0	3	**3**	**295**

Undergraduate enrolments in Agricultural Economics (Science stream) constitute 63% of the enrolments in this CESM, followed by Masters enrolments with 17%. PhD, Postgraduate Diploma and Honours enrolments in Agricultural Economics (Science stream) account for 12%, 5% and 3% of enrolments in this CESM respectively.

One hundred and eighty seven (187) students enrolled at Undergraduate level in the CESM for the 2005 academic year.

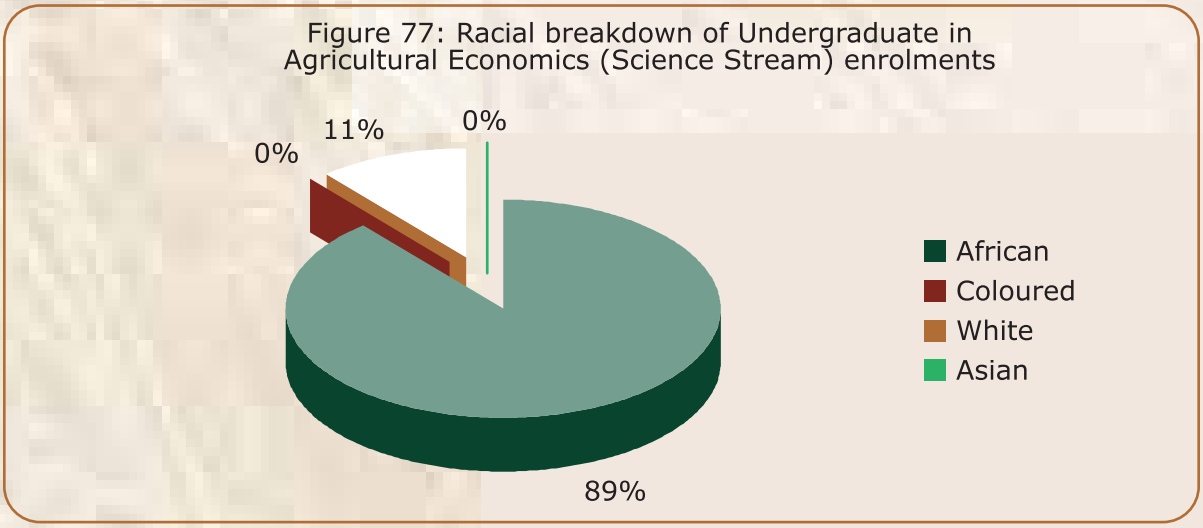


Figure 77 depicts that African students constitute 89% of the Undergraduate enrolments in Agricultural Economics whilst White students account for 11%. No Coloured and Asian students were registered in this programme during the 2005 academic year.

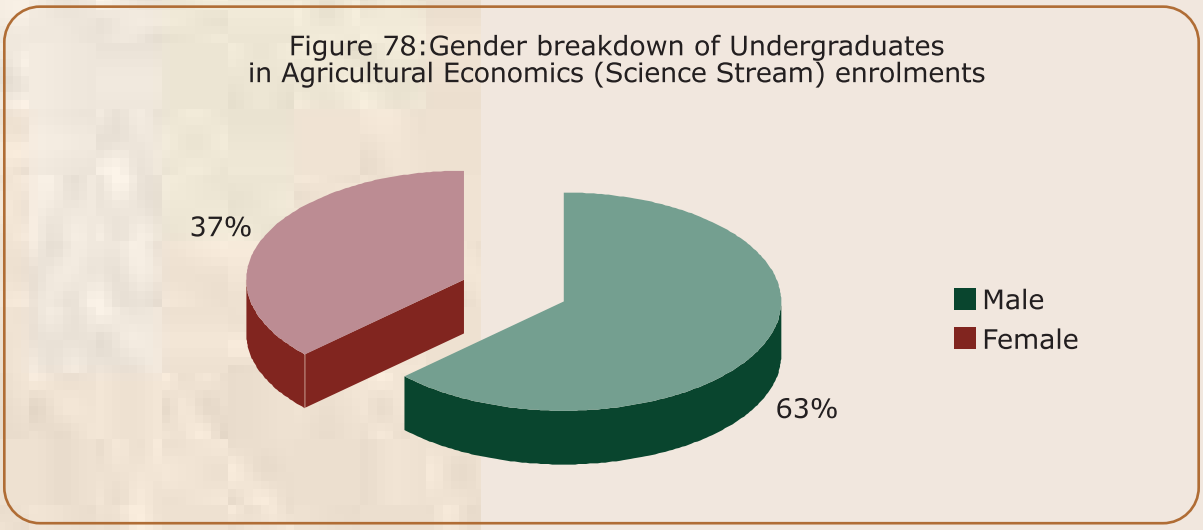


Figure 78 depicts that male students dominated the Undergraduate enrolments in this CESM with 63% while female students

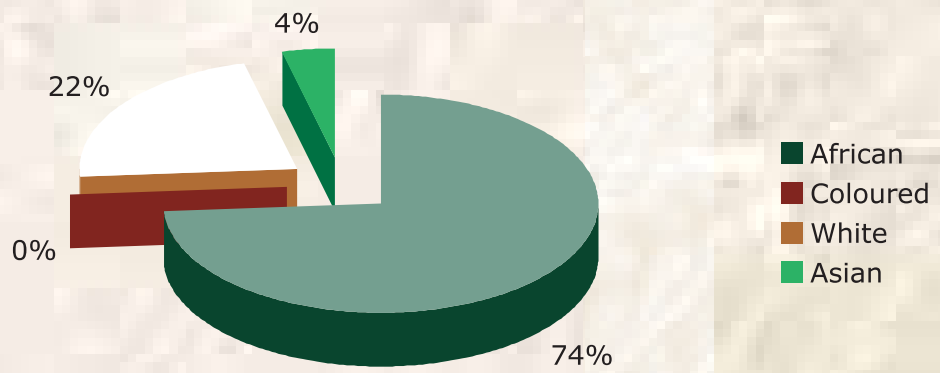
constituted only 37%. African males accounted for 87%) of the male enrolments in Agricultural Economics (Science Stream) at Undergraduate level whilst White males constituted only 13%.

Fourteen (14) African students enrolled for Postgraduate Diploma in Agricultural Economics (Science Stream) at universities during the 2005 academic year; 11 were females and 3 were males.

Nine (9) students enrolled for Honours in Agricultural Economics (Science Stream) at universities for the 2005 academic year; 6 were African females, 2 were White males and 1 was an African male.

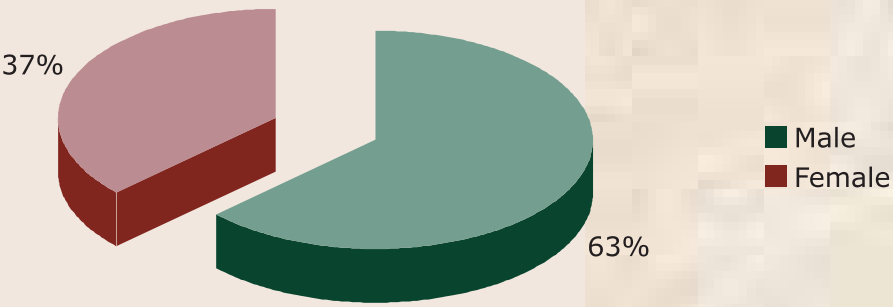
Forty nine (49) students enrolled at Masters level in this CESM for the 2005 academic year.

Figure 79: Racial breakdown of Masters in Agricultural Economics (Science Stream) enrolments



Racial breakdown in figure 79 depicts that African students constituted 74% of the Masters enrolments in Agricultural Economics (Science Stream) for the 2005 academic year, followed by Whites with 22% and Asians with 4%. No Coloured students enrolled at the Masters level in this CESM for the 2005 academic year.

Figure 80: Gender breakdown of Masters in Agricultural Economics (Science Stream) enrolments



Gender breakdown in figure 80 depicts that male enrolments account for 63% of the Masters enrolments in this CESM whilst females constitute only 37%. African males contribute 74% of the male enrolments at Masters level in this CESM and White male students accounte for 26%.

Thirty six (36) students enrolled at PhD level in Agricultural Economics for the 2005 academic year.

Figure 81: Racial breakdown of PhD in Agricultural Economics (Science Stream) enrolments

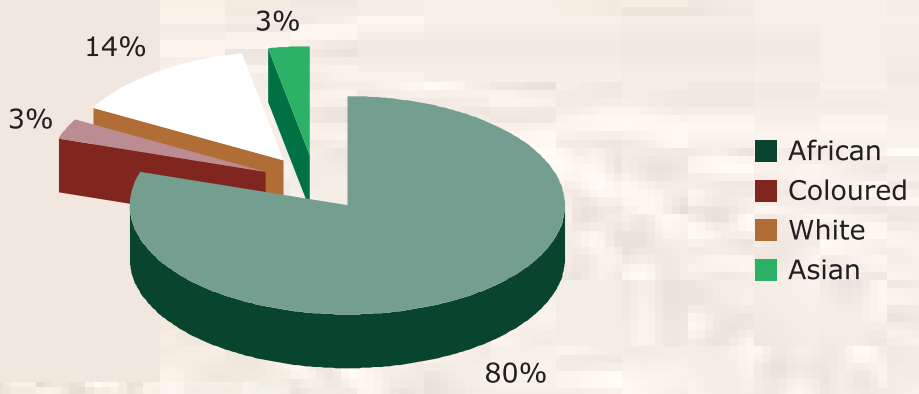


Figure 81 shows that African students constitute 80% of PhD enrolments in Agricultural Economics (Science Stream). White students account for 14% while Coloured and Asian students together constitute 6% of Agricultural Economics (Science Stream) enrolments at PhD level.

Figure 82: Gender breakdown of PhD in Agricultural Economics (Science Stream) enrolments

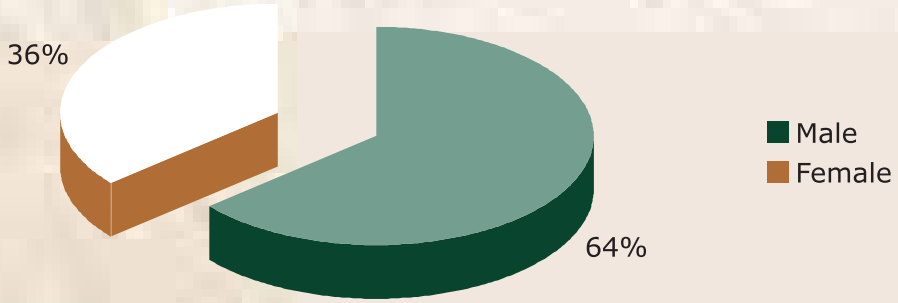


Figure 82 shows that male students dominated the PhD enrolments in this CESM with 64% and female students constituted only 36%. African males comprised 78% of the male enrolments in this programme, followed by White males with 22%. No Coloured and Asian male students enrolled at PhD level in this CESM in the 2005 academic year.

4.3.3.2 Agricultural Economics (BCom Stream) enrolments at universities in 2005

Eleven (11) students enrolled in this CESM for the 2005 academic year at universities. Programmes in this CESM are offered by University of Pretoria only. Table 58 shows a demographic breakdown of Agricultural Economics enrolments for the 2005 academic year by academic level.

Table 58: Demographic breakdown of Agricultural Economics (BCom Stream) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Honours	0	1	1	0	0	0	2	0	2	0	0	0	**3**
Masters	0	1	1	0	0	0	3	3	6	0	0	0	**7**
PhD	1	0	1	0	0	0	0	0	0	0	0	0	**1**
TOTAL	1	2	**3**	0	0	**0**	5	3	**8**	0	0	**0**	**11**

Three (3) students enrolled at Honours level in Agricultural Economics (BCom Stream), of which 1 was an African female and 2 were White males.

Seven (7) students enrolled at Masters level in Agricultural Economics (MCom Stream) at universities for the 2005 academic year; 3 were White males, 3 were White females and 1 was an African female.

One (1) African male student enrolled in the CESM at PhD level in 2005 at universities.

4.3.3.3 Agricultural Economics (AgriBusiness Management) enrolments at universities in 2005

Two hundred and three (203) students were enrolled in this CESM for the 2005 academic year at universities. Programmes in this CESM are offered by the University of Pretoria, University of Zululand, University of Stellenbosch and University of Venda. This CESM includes programmes in Agricultural Economics: AgriBusiness Management. Table 59 presents a demographic breakdown of Agricultural Economics (Agribusiness Management) enrolments for 2005 in terms of academic levels.

Table 59: Demographic breakdown of Agricultural Economics (Agri Business Management) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduates	42	35	**77**	1	1	**2**	94	7	**101**	1	0	**1**	**181**
Honours	12	10	**22**	0	0	**0**	0	0	**0**	0	0	**0**	**22**
TOTAL	**54**	**45**	**99**	**1**	**1**	**2**	**94**	**7**	**101**	**1**	**0**	**1**	**203**

Eighty Nine percent (89%) of students in this CESM enrolled at the Undergraduate level while 11% enrolled at Honours level. One hundred and eighty one (181) students enrolled at Undergraduate level in this CESM for the 2005 academic year.

Figure 83: Racial breakdown of Undergraduate in Agricultural Economics (AgriBusiness Management) enrolments

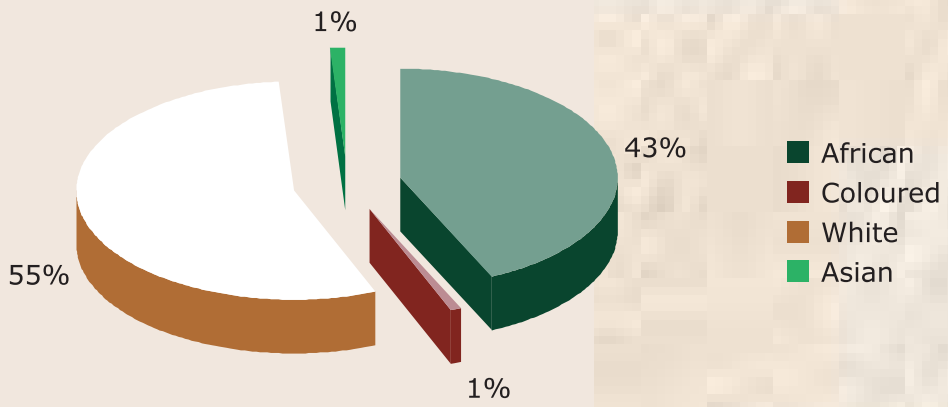
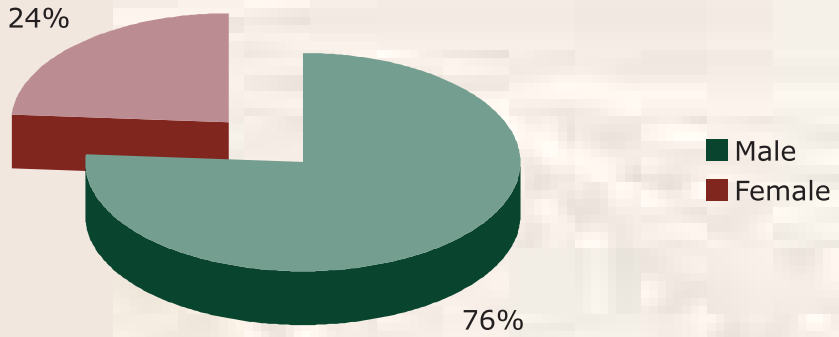


Figure 83 indicates that White students dominated the Undergraduate enrolments in Agricultural Economics (Agri Business Management) with 55%. African students constitute 43% while Coloured and Asian students each account for 1% of the total Undergraduate enrolments in Agricultural Economics (Agri Business Management) for 2005.

Figure 84: Gender breakdown of Undergraduate in Agricultural Economics (AgriBusiness Management) enrolments



Gender breakdown in figure 84 indicates that male students dominated the Undergraduate enrolments in this CESM by 76% and female students account for 24%. White males constitute 68% and African males comprised of 30%. Coloured and Asian males each comprised 1% of the male enrolments in this CESM at Undergraduate level.

Twenty two (22) African students enrolled for Agricultural Economics (AgriBusiness Management) at Honours level during the 2005 academic year, 12 were male students and 10 were females.

4.3.3.4 Agricultural Economics (Art Stream) enrolments at universities in 2005

One hundred and twenty six (126) students enrolled in this CESM for the 2005 academic year at universities. Programmes in this CESM are offered by University of Fort Hare. Table 60 shows a demographic breakdown of Agricultural Science (Art Stream) enrolments for the 2005 academic year by level of qualification.

Table 60: Demographic breakdown of Agricultural Economics (Art Stream) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	66	50	116	0	0	0	1	0	1	0	0	0	**117**
Honours	4	1	5	0	0	0	0	0	0	0	0	0	**5**
Masters	2	2	4	0	0	0	0	0	0	0	0	0	**4**
TOTAL	72	53	**125**	0	0	**0**	1	0	**1**	0	0	**0**	**126**

Undergraduate enrolments constitute 93% of the enrolments in this CESM followed by Honours enrolments with 4% and Masters enrolments with 3% of the total enrolments in the CESM.

One hundred and seventeen (117) students enrolled at Undergraduate level in this CESM for the 2005 academic year.

Figure 85: Racial breakdown of Undergraduate in Agricultural Economics (Art Stream) enrolments

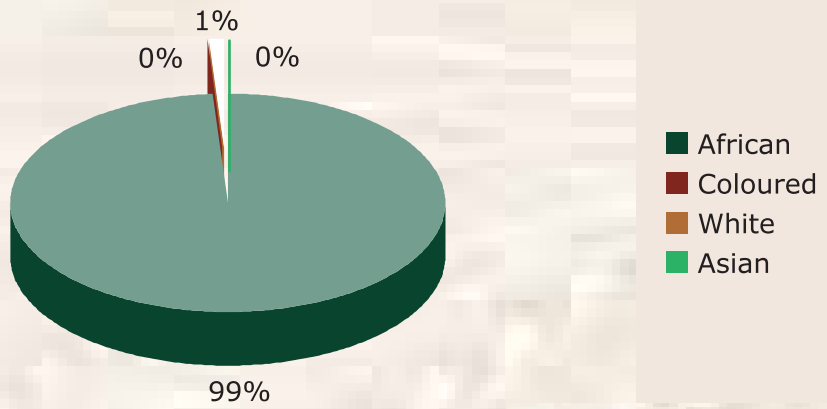
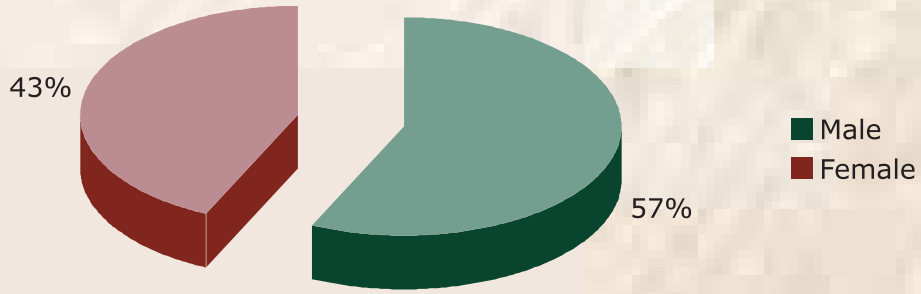


Figure 85 shows that African students dominated the Undergraduate enrolments in this CESM with 99%, whilst White students account for only 1%. No Coloured and Asians enrolled in this CESM at Undergraduate level for 2005.

Figure 86: Gender breakdown of Undergraduate in Agricultural Economics (Art Stream) enrolments



Gender breakdown in figure 86, indicates that male students constitute fifty 57% of the Undergraduate enrolments in this CESM and females constituted forty 43%. African males constitute 99% of the male enrolments at Undergraduate level in this CESM and White males account for 1%. All the female students enrolled in this CESM at Undergraduate level were African.

Five (5) African students enrolled at Honours level in Agricultural Economics (Art Stream), of which 4 were males and 1 was a female.

Four (4) African students enrolled at Masters level in Agricultural Economics (Art Stream) at universities for the 2005 academic year, 2 were male and 2 were females.

4.3.3.5 Agricultural Science (Art Stream) enrolments at universities in 2005

Five hundred and sixty three (563) students enrolled in this CESM for the 2005 academic year at universities. This CESM includes Agriculture, and programmes in this CESM are offered by University of Free State, University of Venda, University of Stellenbosch and University of KwaZulu Natal. Table 61 presents a demographic breakdown of Agricultural Science (Art Stream) enrolments for the 2005 academic year by level of qualification.

Table 61: Demographic breakdown of Agricultural Science (Art Stream) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	179	78	**257**	16	6	**22**	149	60	**209**	0	0	**0**	**488**
Honours	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**
Masters	18	12	**30**	1	1	**2**	17	9	**26**	1	0	**1**	**59**
PhD	3	0	**3**	0	0	**0**	7	2	**9**	0	0	**0**	**12**
TOTAL	202	92	**292**	17	7	**24**	173	71	**244**	1	0	**1**	**563**

Undergraduate enrolments constitute 87% of the enrolments in this CESM followed by Masters enrolments with 10%. PhD enrolments and Honours enrolments constitute 2% and 1% of the total enrolments in the CESM respectively.

Four hundred and eighty eight (488) students enrolled at Undergraduate level in this CESM for the 2005 academic year.

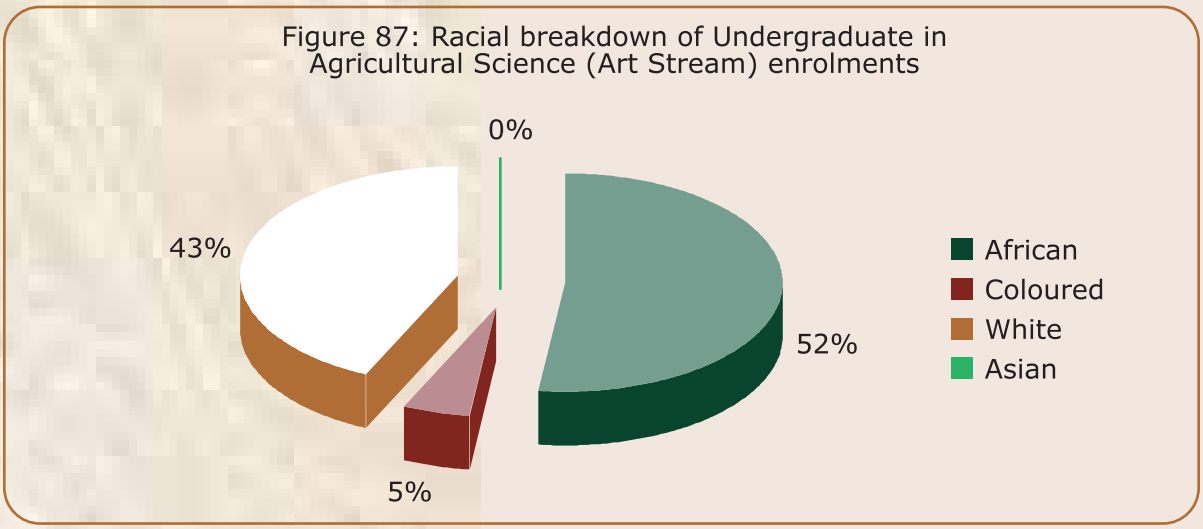


Figure 87 shows that African students dominate the Undergraduate enrolments in this CESM with 52% followed by White students and Coloured students with 43% and 5% respectively. No Asian students enrolled in this CESM at Undergraduate level for 2005.

Figure 88: Gender breakdown of Undergraduate in Agricultural Science (Art Stream) enrolments

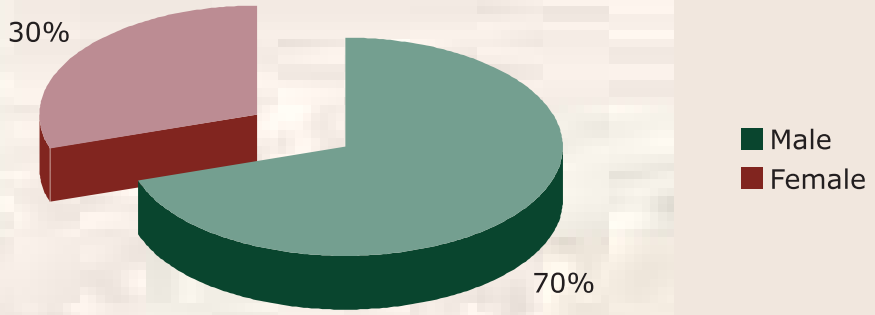


Figure 88 indicates that male students constitute 70% of the Undergraduate enrolments in this CESM and females account for 30%. African males constitute 52% of the male enrolments at Undergraduate level in this CESM; White males accounted for 43% and Coloured males constituted 5%. Four (4) African students enrolled at Honours level in Agricultural Science (Art Stream), 2 were males and 2 were females. Fifty nine (59) students enrolled at Masters level in Agricultural Science (Art Stream) for the 2005 academic year.

Figure 89: Racial breakdown of Masters in Agricultural Science (Art Stream) enrolments

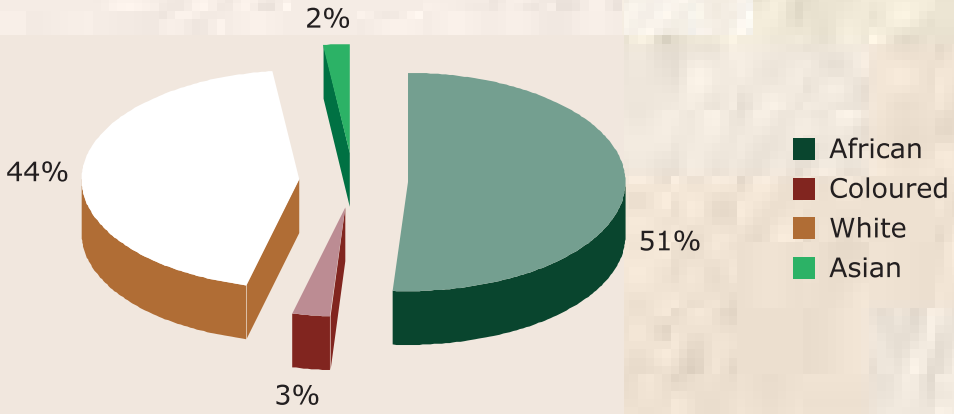


Figure 89 illustrates that African students enrolled at Masters level in this CESM for 2005 accounted for 51%. White students constituted 44% of the Masters enrolments in this CESM for the 2005 academic year. Coloured and Asian students account for 3% and 2% of the enrolled students in this CESM at Masters level respectively.

Figure 90: Gender breakdown of Masters in Agricultural Science (Art Science) enrolments

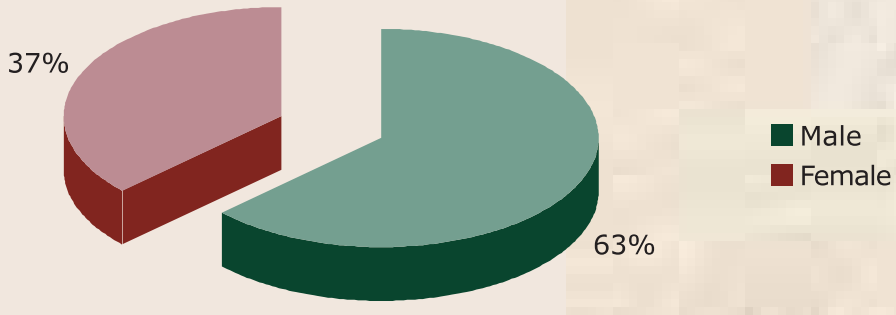


Figure 90 indicates that male students dominate the Masters enrolments in this CESM with 63% and female students constitute 37% only. African males dominated male enrolments at Masters level in this CESM, with 48% followed by White

males with 46%. Coloured and Asian males together constitute 6% of the male enrolments at Masters level in this CESM. Twelve (12) students enrolled at PhD level in Agricultural Science (Art Stream) for the 2005 academic year.

Figure 91: Racial breakdown of PhD in Agricultural Science (Art Science) enrolments

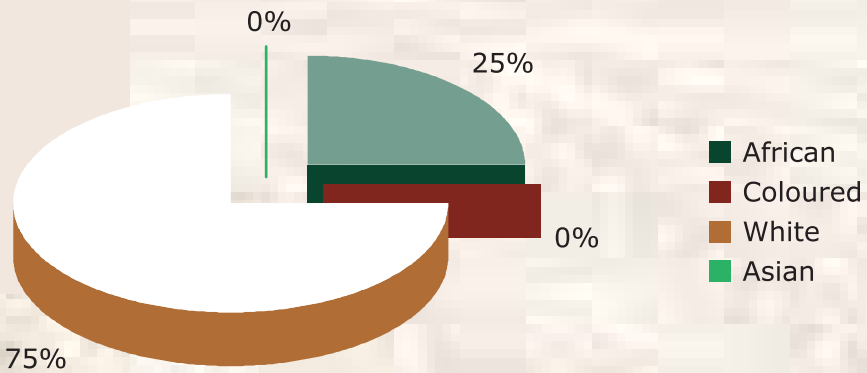


Figure 91 indicates that White students constitute 75% and African students account 25% of the PhD enrolments in this CESM. No Coloured and Asian students enrolled in this CESM at PhD level during the 2005 academic year.

Figure 92: Gender breakdown of PhD in Agricultural Science (Art Science) enrolments

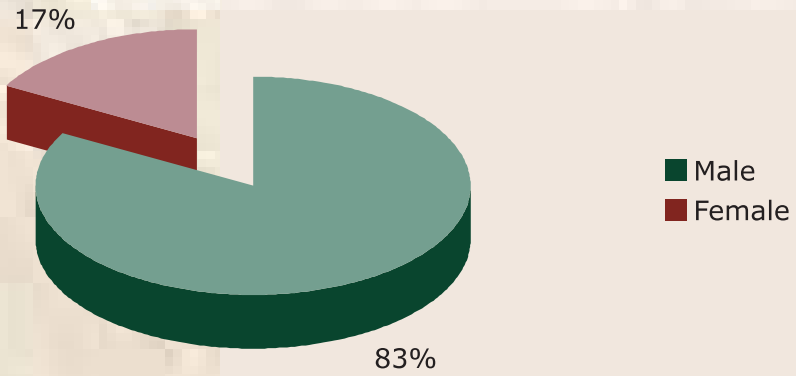


Figure 92 illustrates that male students dominate the PhD enrolments in this CESM with 83%, whilst female students constitute only 17%. White males comprised the majority of the male enrolments at PhD in this CESM with 70% followed by African males with 30%.

4.3.3.6 Agricultural Science (Science Stream) enrolments at universities in 2005

The Agricultural Science (Science Stream) includes programmes in the following;

- BSc Agric General and Agriculture, Science and Agriculture, B Sc Agriculture and B Sc. Agriculture, Rural Engineering and B.Sc Computer Information Systems.

One thousand three hundred and eighty four (1384) students enrolled in this CESM for the 2005 academic year. Programmes in this CESM are offered by University of Free State, University of Stellenbosch, University of KwaZulu Natal, University of Limpopo, University of Venda, University of Zululand and University of South Africa. Table 62 presents a demographic breakdown of Agricultural Science-General (Science Stream) enrolments for the 2005 academic year by level of qualification.

Table 62: Demographic breakdown of Agricultural Science (Science Stream) enrolments at universities in 2005													
LEVEL	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Undergraduate	127	90	**217**	17	18	**35**	369	237	**606**	3	9	**12**	**870**
Postgraduate Diploma	7	9	**16**	2	0	**2**	1	2	**3**	1	1	**2**	**23**
Honours	3	2	**5**	0	0	**0**	6	0	**6**	0	0	**0**	**11**
Masters	81	35	**116**	4	4	**8**	78	61	**139**	7	3	**10**	**273**
PhD	81	17	**98**	2	2	**4**	52	42	**94**	8	3	**11**	**207**
TOTAL	299	153	**452**	25	24	**49**	506	342	**848**	19	16	**35**	**1384**

Undergraduate enrolments in this CESM constitute 63% of the enrolments in this CESM during the 2005 academic year followed by Masters enrolments and PhD enrolments with 20% and 15% respectively meanwhile the Honours level constitute less than 1% of the total enrolments in this CESM.

Eight hundred and seventy (870) students enrolled for Undergraduate programmes in this CESM at universities for the 2005 academic year.

Figure 93: Racial breakdown of Undergraduate in Agricultural Science (Science Stream) enrolments

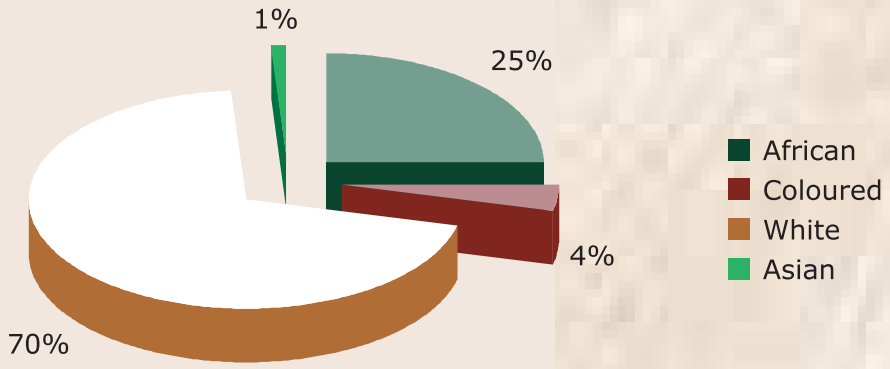


Figure 93 depicts that Whites dominated enrolments at Undergraduate level in this CESM with a majority of 70%; African students account for only 25%, meanwhile Coloured students constitute 4% and Asian students comprised 1% only.

Figure 94: Gender breakdown of Undergraduate in Agricultural Science (Science Stream) enrolments

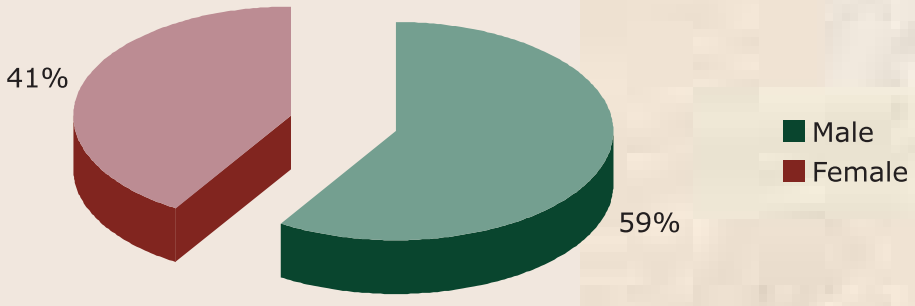


Figure 94 shows that male students dominated Undergraduate enrolments in this CESM with 59% and female students constituted only 41%. White males account for 71% of the Undergraduate male enrolments in this CESM and African

males constitute 25%. Coloured and Asian males account for 3% and 1% of the Undergraduates enrolments in this CESM respectively. White females dominate the Undergraduate female enrolments in this CESM with 67% and African females account for 25%. Coloured and Asian females together constitute less than 10% of the female enrolments at Undergraduate programme in this CESM.

Twenty three (23) students enrolled for Postgraduate Diploma programmes in this CESM at universities during the 2005 academic year.

Figure 95: Racial breakdown of Postgraduate Diploma in Agricultural Science (Science Stream) enrolments

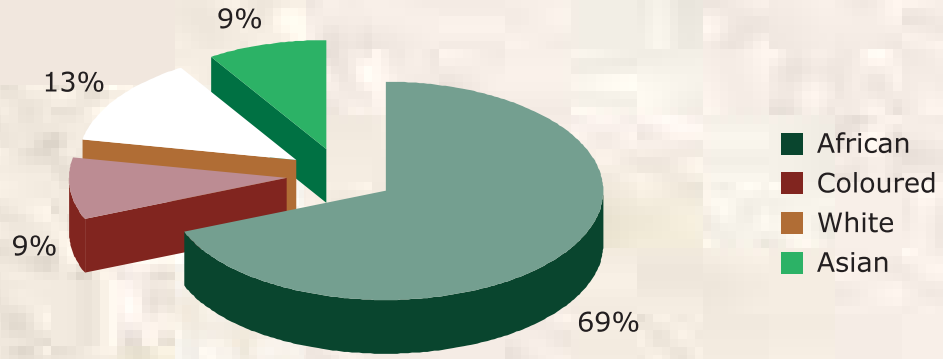
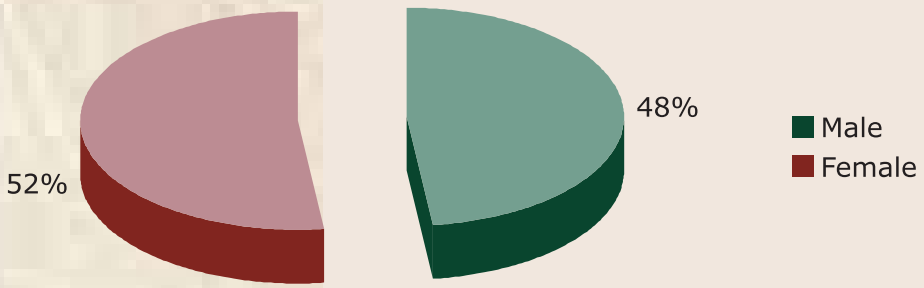


Figure 95 shows that African students constituted 69% of the enrolments in this CESM at Postgraduate Diploma level followed by White students with 13%. Coloured and Asian students each account for 9% of the enrolments in this CESM at Postgraduate Diploma level during the 2005 academic year.

Figure 96: Gender breakdown of Postgraduate Diploma in Agricultural Science (Science Stream) enrolments



Gender breakdown in figure 96 indicates that female students constitute 52% of the Postgraduate Diploma enrolments in this CESM and males account for 48%. African males constitute 64% of the male enrolments at Postgraduate Diploma level in this CESM, followed by Coloured males with 18%. White and Asian male students each account for 9% of the male enrolments in this CESM at Postgraduate Diploma level during the 2005 academic year.

Eleven (11) students enrolled at Honours level in this CESM for the 2005 academic year of which 6 were White males, 3 were African males and 2 were African females.

Two hundred and seventy three (273) students enrolled at Masters level in Agricultural Science (Science Stream) during the 2005 academic year.

Figure 97: Racial breakdown of Masters in Agricultural Science (Science Stream) enrolments

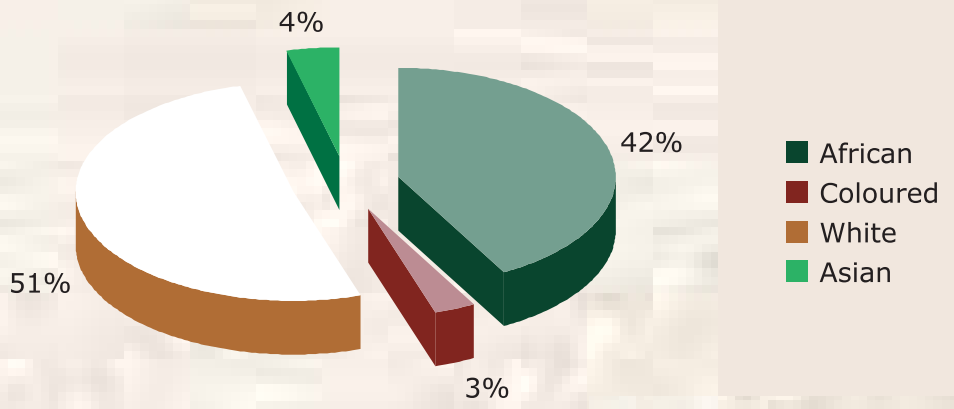


Figure 97 indicates that White students comprise 51% of the Masters enrolments in this CESM and African students constitute 42%. Asian and Coloured students account for 4% and 3% of the Masters enrolments in this CESM respectively.

Figure 98: Gender breakdown of Masters in Agricultural Science (Science Stream) enrolments

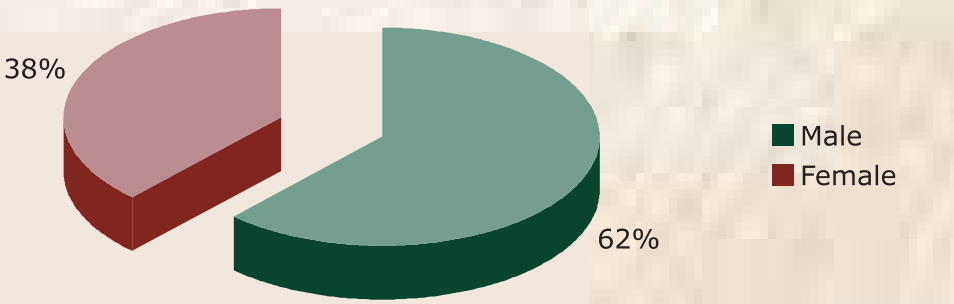


Figure 98 depicts that male students dominate at Masters level in this CESM with 62% and female students account for 38%. African males dominate the male enrolments at Masters level in this CESM with 48% and White males constitute 46%. Coloured and Asian males together constitute 6% of the male enrolments in this CESM.

White females constitute 59% of the female enrolments at Masters level in this CESM and African females comprise 34%. Coloured and Asian females constitute 4% and 3% of the female enrolments at Masters level respectively.

Two hundred and seven (207) students enrolled at PhD level in Agricultural Science (Science Stream) during the 2005 academic year.

Figure 99: Racial breakdown of PhD in Agricultural Science (Science Stream) enrolments

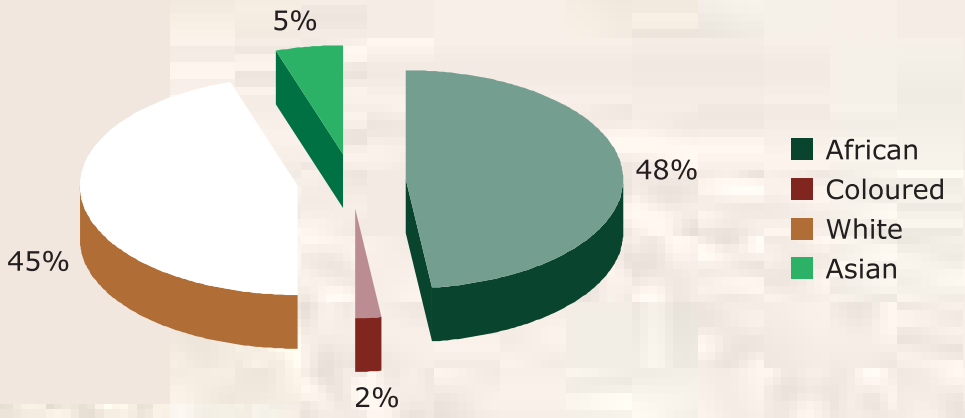


Figure 99 indicates that African students comprise 48% of the PhD enrolments in this CESM and White students constitute 45%. Asian and Coloured students constitute 5% and 2% of the PhD enrolments in this CESM respectively.

Figure 100:Gender breakdown of PhD in Agricultural Science (Science Stream) enrolments

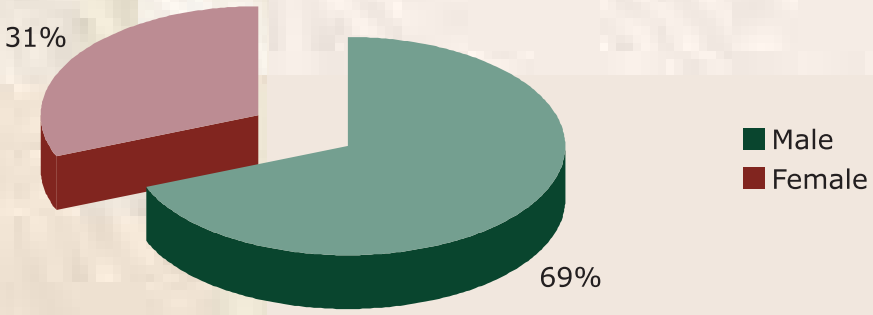


Figure 100 depicts that male students dominate at PhD level in this CESM with 69% and female students account for 31%. African males dominate the male enrolments at PhD level in this CESM with 57% and White males constitute 36%. Coloured and Asian males together constitute 7% of the male enrolments in this CESM. White females constitute 65% of the female enrolments at PhD level and African females comprise 27%. Asian and Coloured females constitute 5% and 3% of the female enrolments at PhD level respectively.

4.3.3.7 Agricultural Extension enrolments at universities in 2005

Two hundred and forty one (241) students enrolled in the Agricultural Extension CESM for the 2005 academic year at universities. Programmes in Agricultural Extension programmes are offered by University of North West, University of Pretoria, University of Fort Hare and University of Limpopo.

This CESM includes programmes in the following;

- Extension and Rural Development, Agrarian Extension and Agricultural Extension/Production. Table 63 shows a demographic breakdown of Agricultural Extension enrolments for the 2005 academic year by academic level of qualification.

Table 63: Demographic breakdown of Agricultural Extension enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	93	38	**131**	0	0	**0**	0	0	**0**	0	0	**0**	**131**
Postgraduate Diploma	3	9	**12**	0	0	**0**	15	9	**24**	0	0	**0**	**36**
Honours	8	2	**10**	0	0	**0**	0	0	**0**	0	0	**0**	**10**
Masters	30	27	**57**	0	0	**0**	0	1	**1**	0	1	**1**	**59**
PhD	2	2	**4**	0	0	**0**	1	0	**1**	0	0	**0**	**5**
TOTAL	136	78	**214**	0	0	**0**	16	10	**26**	0	1	**1**	**241**

The Undergraduate enrolments constitute 54%, Masters enrolments account for 24%, Postgraduate Diploma constitute 15%, Honours level enrolled 4%, and PhD level comprise 2% of the enrolments in this CESM for the academic year 2005.

One hundred and thirty one (131) students enrolled at Undergraduate level in this CESM for the 2005 academic year. Racial breakdown shows that all students enrolled in this CESM at Undergraduate level were African. Gender breakdown indicates that 93 were males and 38 were females.

At Postgraduate Diploma level, thirty 36 students enrolled in this CESM for the 2005 academic year.

Figure 101: Racial breakdown of Postgraduate Diploma in Agricultural Extension enrolments

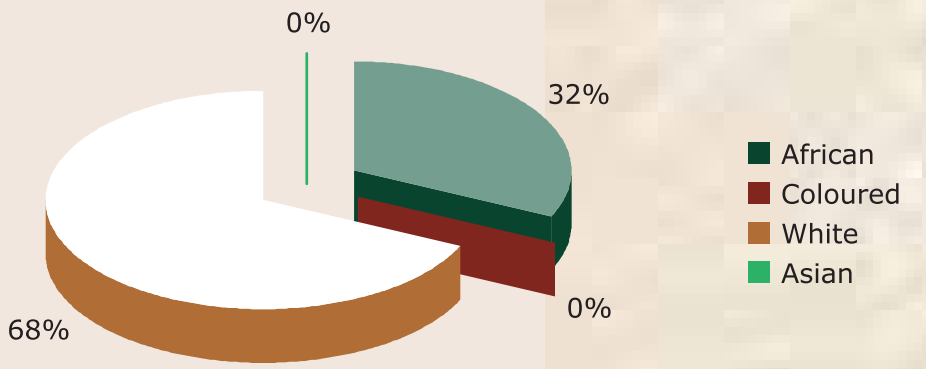


Figure 101 indicates that White students comprise 68% of the Postgraduate Diploma enrolments in this CESM and African students constitute 32%. There were no Asian and Coloured students enrolled in this CESM at Postgraduate Diploma level.

Figure 102: Gender breakdown of Postgraduate Diploma in Agricultural Extension enrolments

Figure 102 depicts that both male and female students account for 50% of the enrolments in this CESM at Postgraduate Diploma level. African males dominate the male enrolments at Postgraduate Diploma level in this CESM with 83% and White males constitute 17%. African and White females constituted 50% of the female enrolments at Postgraduate Diploma level.

At Honours level, 10 students enrolled in this CESM. Racial breakdown of enrolments in this CESM at Honours level shows that only African students enrolled, of which 8 were males and 2 were females.

Fifty nine (59) students enrolled in this CESM at universities for 2005, of which 30 were African males, 27 were African females, 1 was a White female and 1 was an Asian female.

The findings indicate that PhD enrolments comprise 5 students in this CESM for the 2005 academic year of which 4 were Africans and 1 was a White male.

4.3.3.8 Agricultural Food Technology enrolments at universities in 2005

Four hundred and forty six (446) students enrolled in this CESM for the 2005 academic year.

This CESM includes programmes in;

- BSc, BSc (Hons), MSc, and PhD in Food Science and Technology, Food Science and Chemistry, Food Science and Biochemistry, Food Science and Microbiology, Dietetics, Human Nutrition, Food Security, Food Science Technology and Nutrition .

Programmes in Agricultural Food Technology are offered by University of Free State, University of Stellenbosch, University of KwaZulu Natal, University of Venda and University of Pretoria. Table 64 presents a demographic breakdown of Agricultural Food Technology enrolments in the 2005 academic year by level of qualification.

Table 64: Demographic breakdown of Agricultural Food Technology enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	39	55	**94**	5	12	**17**	23	186	**209**	5	22	**27**	**347**
Postgraduate diploma	2	8	**10**	0	1	**1**	0	12	**12**	0	2	**2**	**25**
Honours	1	3	**4**	0	0	**0**	1	4	**5**	0	0	**0**	**9**
Masters	8	7	**15**	0	0	**0**	4	22	**26**	0	1	**1**	**42**
PhD	5	7	**12**	1	0	**1**	0	10	**10**	0	0	**0**	**23**
TOTAL	55	80	**135**	6	13	**19**	28	234	**262**	5	25	**30**	**446**

The Undergraduate enrolments constituted 78%, Masters enrolments account for 9% followed by Postgraduate Diploma with 6%, PhD enrolments constitute 5% and Honours enrolments account for 2% of the enrolments in the CESM.

Three hundred and forty seven (347) students enrolled at Undergraduate level in Agricultural Food Technology for the 2005 academic year.

Figure 103: Racial breakdown of Undergraduate in Agricultural Food Technology enrolments

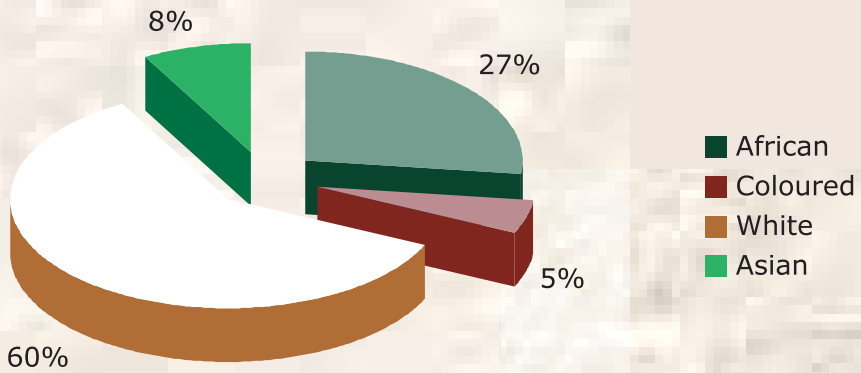


Figure 103 shows that the majority was White students at 60% followed by Africans with 27% of the Undergraduate enrolments in this CESM. Asian and Coloured enrolments in this CESM at Undergraduate level account for 8% and 5% respectively.

Figure 104: Gender breakdown of Undergraduate in Agricultural Food Technology enrolments

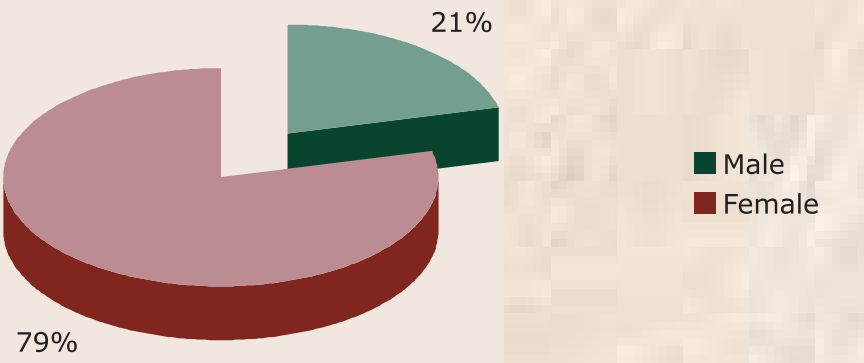


Figure 104 shows that female students dominate the Undergraduate enrolments in this CESM with 79% and male students constitute 21%, and White females dominated the female enrolments 68%. African males constitute 54% of the male enrolments at Undergraduate level in this CESM followed by White males with 32%. Asian and Coloured males each constitute 7% of the male enrolments at Undergraduate level in this CESM.

Twenty five (25) students enrolled in this CESM at Postgraduate Diploma level for the 2005 academic year.

Figure 105: Racial breakdown of Postgraduate Diploma in Agricultural Food Technology enrolments

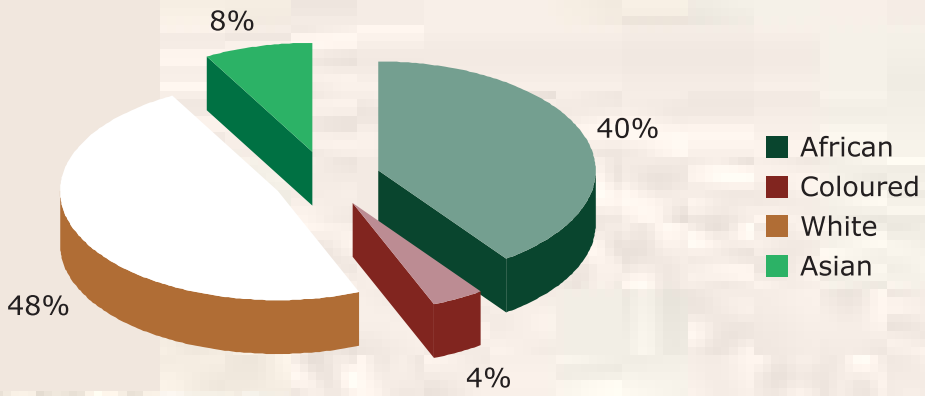


Figure 105 shows that White students constitute 48% of the Postgraduate Diploma enrolments in this CESM followed by African students with 40%; Asian students account for 8% and Coloured students comprise 4%.

Figure 106: Gender breakdown of Postgraduate Diploma in Agricultural Food Technology enrolments

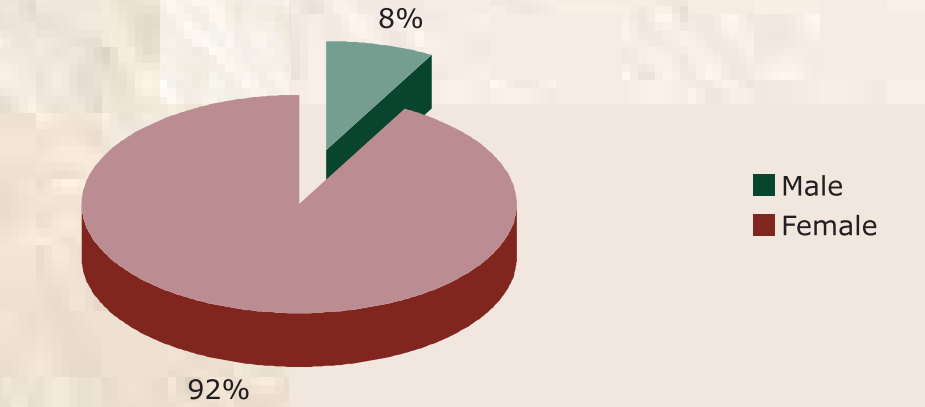


Figure 106 shows that female students dominate the Postgraduate Diploma enrolments in this CESM with 92% and male students constitute 8% only. White females dominate the female enrolments with 52% followed by African females with 35%. There were only 2 African males enrolled in this CESM at Postgraduate Diploma level.

Only 9 students enrolled at Honours level in Agricultural Food Technology CESM for the 2005, 5 were White and 4 were Africans with 7 females and 2 males.

Thirty five (35) students enrolled at Masters level in this CESM for the 2005 academic year at universities.

Figure 107: Racial breakdown of Masters in Agricultural Food Technology enrolments

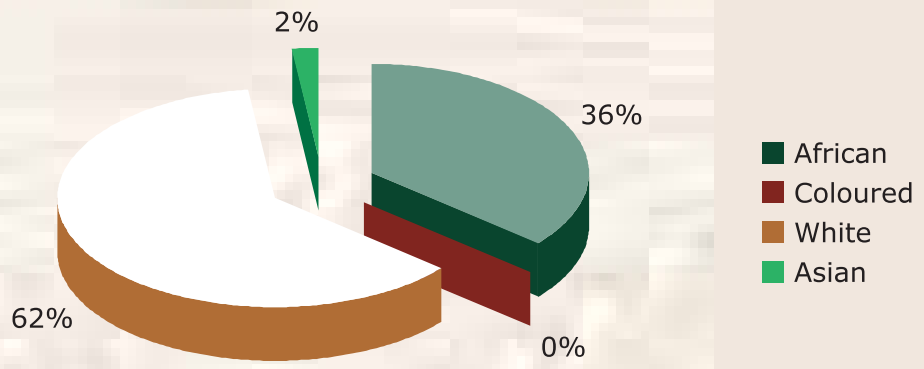


Figure 107 shows that White students dominated Masters enrolments in this CESM with 62% followed by African students with 36% meanwhile Asian students account for 2%. No Coloured students enrolled for this CESM at Masters level during the 2005 academic year.

Figure 108: Gender breakdown of Masters in Agricultural Food Technology enrolments

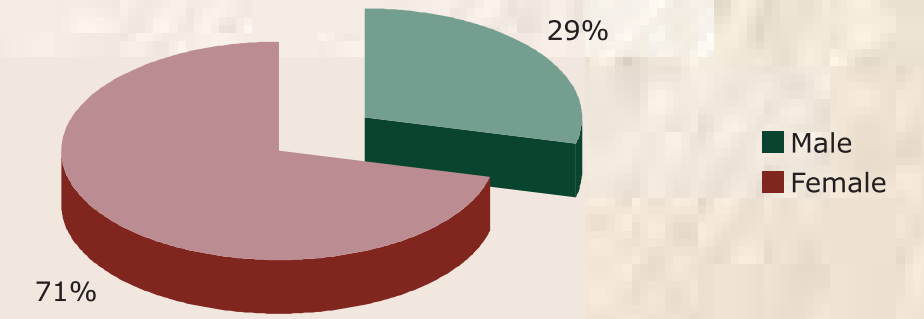


Figure 108 shows that female students dominate the Masters enrolments in this CESM with 71% and male students constitute 29%. White females dominated the female enrolments with 73% followed by African females with 23%. African males constitute 67% of the male enrolments at Masters level in this CESM followed by White males with 33%.

Twenty three (23) students enrolled at PhD level in this CESM for the 2005 academic year at universities.

Figure 109: Racial breakdown of PhD in Agricultural Food Technology enrolments

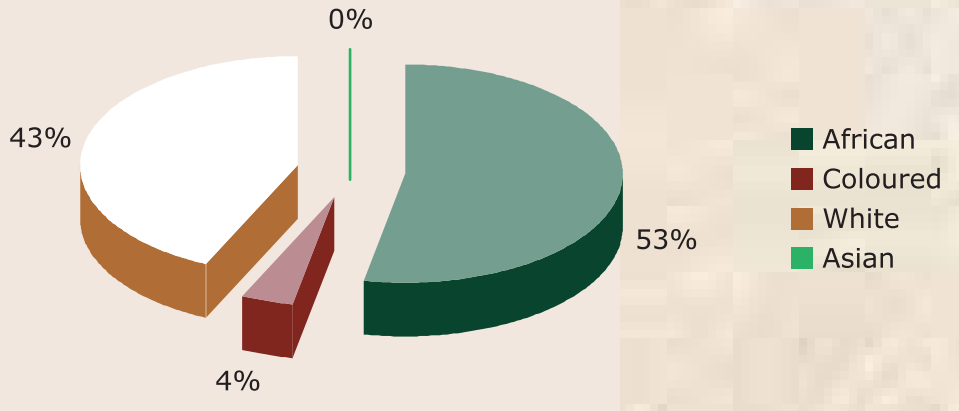


Figure 109 shows that African students constitute 53% of the PhD enrolments in this CESM followed by White students with 43%; Coloured students account for 4%. No Asian students enrolled for this CESM at PhD level.

Figure 110: Gender breakdown of PhD in Agricultural Food Technology enrolments

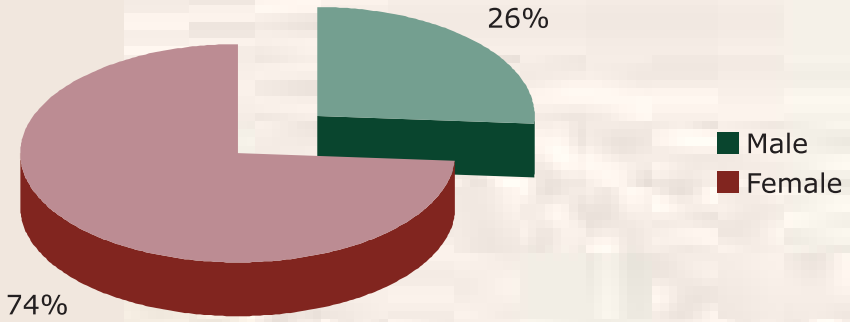


Figure 110 depicts that female students amount to 74% of the PhD enrolments in this CESM whilst male students constitute 26%. White females dominate the female enrolments with 59% followed by African females with 41%. African males constitute 83% of the male enrolments at PhD level in this CESM followed by Coloured males with 17%.

4.3.3.9 Animal Science enrolments at universities in 2005

Animal Science CESM includes programmes in;

- Undergraduate, Honours, Masters and PhD. Animal Production Science, Animal Pasture Science, Animal Production, Animal Health, Animal Production Management, Animal Science and Food Science
- Animal Science/Grassland Science, Animal Science with Agronomy, Animal Science with Conservation Ecology, Animal Science with Agricultural Economics, Reproduction Physiology, Animal Physiology, Livestock Industry Management, Assisted Reproduction, Livestock Industry Management: Dairy Science
- Livestock Management: Aquaculture, Livestock Industry Management: Pig Production Sciences and Livestock Industry Management: Poultry Science, Animal Science/ Pasture Management, Animal Science and Animal genetics, Animal Science: Meat Science, Animal Science: Animal Production
- Animal Science: Animal Breeding, Animal Science: Livestock Nutrition, Animal Science: Production Physiology, Animal Science Nutrition Science, Animal Science: Production Management and Animal Science: Animal Breeding and Genetics

One thousand three hundred and twelve (1312) students enrolled in this CESM for the 2005 academic year at universities. Programmes in Animal Science are offered by University of Fort Hare, University of Limpopo, University of North West, University of South Africa, University of Zululand, University of Free State, University of Stellenbosch and University of Pretoria. Table 65 presents a demographic breakdown of Animal Science enrolments for the 2005 academic year by level of qualification.

Table 65: Demographic breakdown of Animal Science enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	352	381	**733**	3	5	**8**	184	171	**355**	1	2	**3**	**1099**
Honours	14	20	**34**	0	0	**0**	4	2	**6**	0	0	**0**	**40**
Masters	36	38	**74**	1	1	**2**	39	35	**74**	1	0	**1**	**151**
PhD	5	2	**7**	2	3	**5**	5	5	**10**	0	0	**0**	**22**
TOTAL	407	441	**848**	6	9	**15**	232	213	**445**	2	2	**4**	**1312**

Undergraduate enrolments constitute 83% of the overall enrolments in Animal Science for the 2005 academic year. Masters and Honours enrolments account for 12% and 3% respectively meanwhile PhD constitute only 2%.

One thousand and ninety nine (1099) students enrolled for Animal Science programmes at Undergraduate level for the 2005 academic year at universities.

Figure 111: Racial breakdown of Undergraduate in Animal Science enrolments

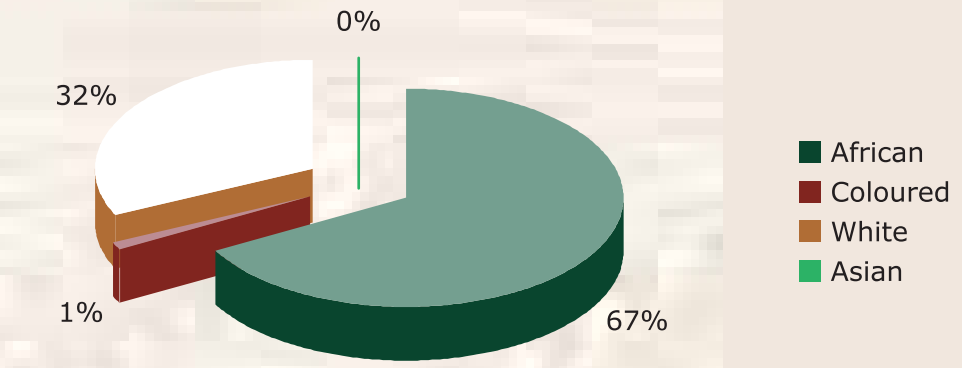


Figure 111 depicts that African students dominated the Undergraduate enrolments in Animal Science by 67% followed by White students with 32% meanwhile Coloured students account for 1%. Asian students were almost non existent.

Figure 112: Gender breakdown of Undergraduate Animal Science enrolments

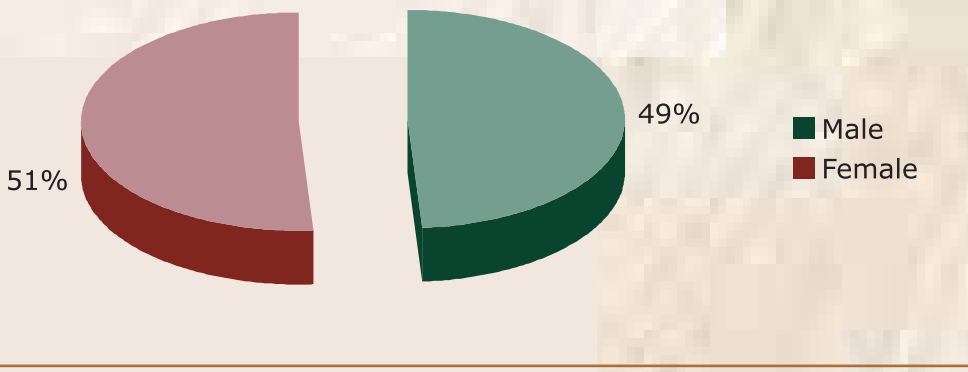


Figure 112 depicts females as the dominant gender constituting 51% of the Undergraduate enrolments in this CESM and males account for 49%. African females constitute 68% and White females account for 31% of the female enrolments at Undergraduate level in this CESM. Coloured and Asian females together amount to 2% only.

Forty (40) students enrolled at Honours level in this CESM for the 2005 academic year.

Figure 113: Racial breakdown of Honours in Animal Science enrolments

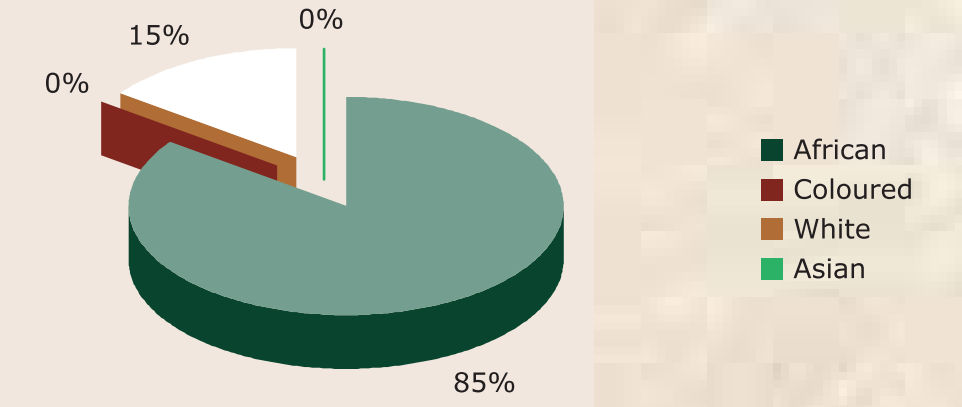


Figure 113 shows that African students amount to 85% of the Honours enrolments in this CESM and White students account for 15%. No Coloured and Asian students enrolled in this CESM at Honours level in the 2005 academic year.

Figure 114: Gender breakdown of Honours in Animal Science enrolments

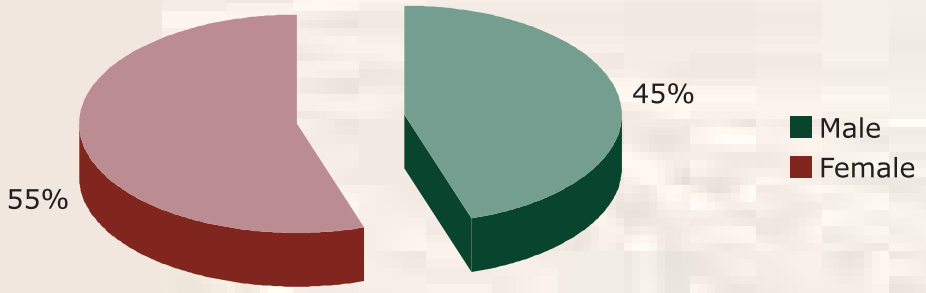


Figure 114 indicates that female students contribute 55% of the Honours enrolments in this CESM and male students account for 45%. African females dominated with 91% and White females constituted 9% of the female enrolments at Honours level in this CESM. African male students amount to 80% and White students accounte for 20%of the male enrolments in this CESM for the 2005 academic year.

One hundred and fifty one (151) students enrolled at Masters level in this CESM at universities for the 2005 academic year.

Figure 115: Racial breakdown of Masters in Animal Science enrolments

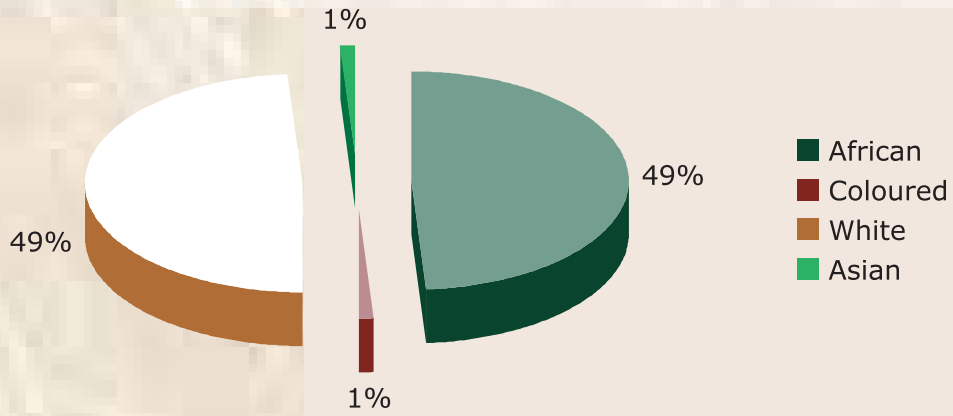


Figure 115 shows that African and White students constitute 49% of the Masters enrolments in this CESM at Masters level for the 2005 academic year. Coloured and Asian students together account for 2%.

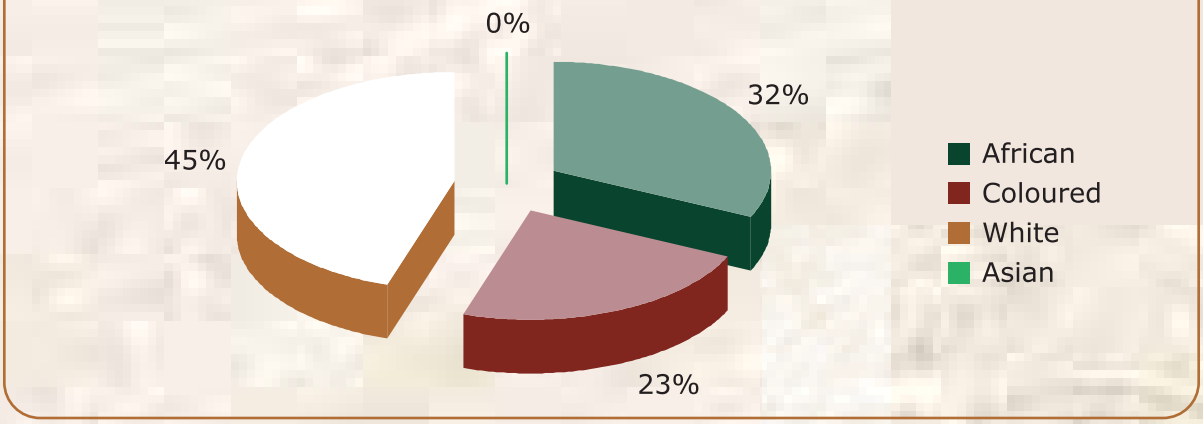
Figure 116: Gender breakdown of Masters Animal Science enrolments

Figure 116 shows that male students account for 51% of the Masters enrolments in this CESM and females constitute 49%. White males comprise 51% of the male enrolments at Masters level in the CESM whilst African males constitute

47%. Coloureds and Asians together account for 2%. African females comprise 51%; White females constitute 47% and Coloured account for 1% of Animal Science enrolments at Masters level for 2005.

Twenty two (22) students enrolled at PhD in this CESM at universities for the 2005 academic year.

Figure 117: Racial breakdown of PhD in Animal Science enrolments



African students constitute 32% of the enrolments at PhD level in this CESM followed by Whites with 45% meanwhile Coloureds account for 23%. No Asians enrolled at PhD level in this CESM for the 2005 academic year.

Figure 118: Gender breakdown of PhD in Animal Science enrolments

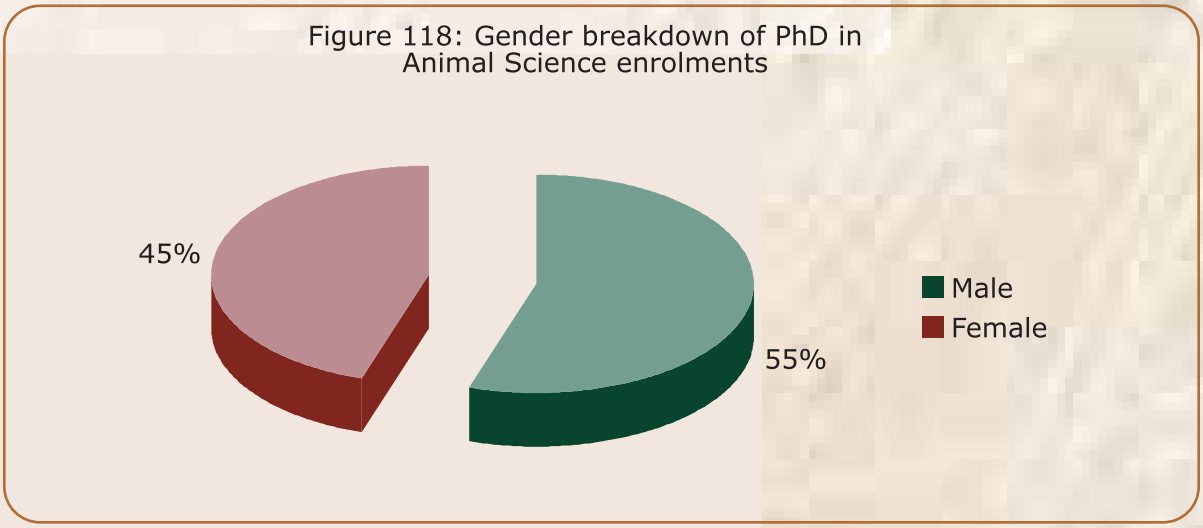


Figure 118 depicts that male students account for 55% of the PhD enrolments in Animal Science and females account for 45%. African and White males account for 42% each and Coloureds contribute 16% of the male enrolments at PhD level in this CESM. White females dominate the female enrolments at PhD level in this CESM with 50%; Coloureds account for 30% and Africans contribute only 20%.

4.3.3.10 Horticulture enrolments at universities in 2005

One hundred and three (103) students in this CESM were enrolled for the 2005 academic year at universities. Programmes in this CESM are offered by the University of Fort Hare, University of Stellenbosch, University of Limpopo and University of Pretoria. Table 66 presents a demographic breakdown of Horticulture enrolments for the 2005 academic year by level of qualification.

Table 66: Demographic breakdown of Horticulture enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	11	7	**18**	0	0	**0**	16	7	**23**	0	0	**0**	**41**
Honours	0	1	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**3**
Masters	6	4	**10**	1	0	**1**	15	12	**27**	0	0	**0**	**38**
PhD	7	1	**8**	0	1	**1**	5	7	**12**	0	0	**0**	**21**
TOTAL	24	13	**37**	1	1	**2**	38	26	**64**	0	0	**0**	**103**

Undergraduate enrolments account for 40% of the total enrolments in this CESM for the 2005 academic year at Universities; followed by Masters with 37%; PhD and Honours constitute 20% and 3% of the Horticulture enrolments respectively.

Forty one (41) students enrolled for Horticulture at Undergraduate at universities in the academic year 2005.

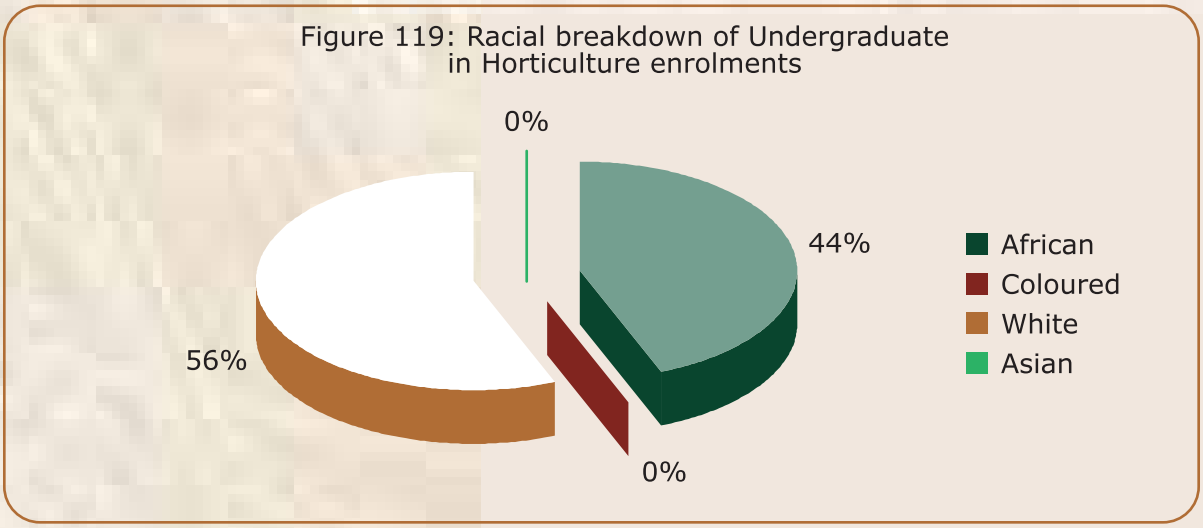


Figure 119 shows that Africans account for 44% and Whites constitute 56% of Undergraduate enrolments in Horticulture for the 2005 academic year. Neither Coloured nor Asian students enrolled in this CESM at Undergraduate level.

Figure 120: Gender breakdown of Undergraduate in Horticulture enrolments

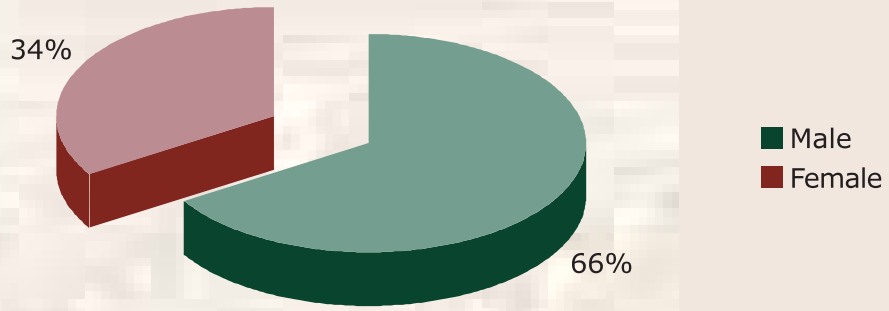


Figure 120 shows that males account for 66% of the Undergraduate enrolments in Horticulture. White males account for 59% and African males constitute 41%. African and White females had an equal representation of 50% of the female enrolments at Undergraduate level in Horticulture. Three (3) students enrolled at Honours level in this CESM for the 2005 academic year, 1 was an African female and 2 were White males.

Thirty eight (38) students enrolled at Masters level in Horticulture for the 2005 academic year.

Figure 121: Racial breakdown of Masters in Horticulture enrolments

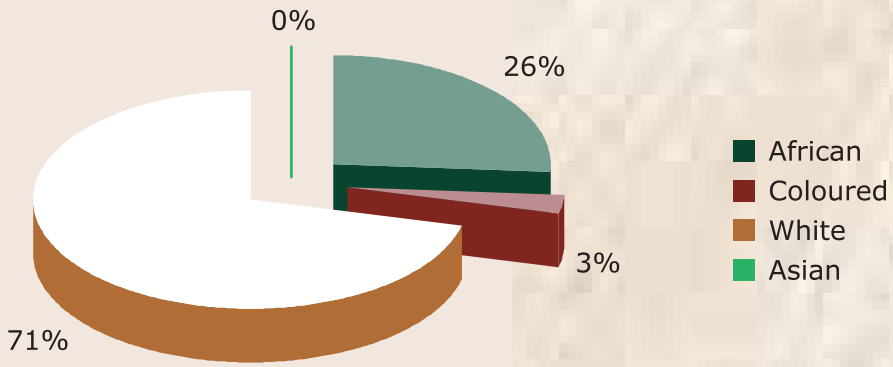


Figure 121 indicates that White students show dominance by 71% of the Masters enrolments in this CESM, followed by Africans with 26% and Coloureds with 3%.

Figure 122: Gender breakdown of Masters in Horticulture enrolments

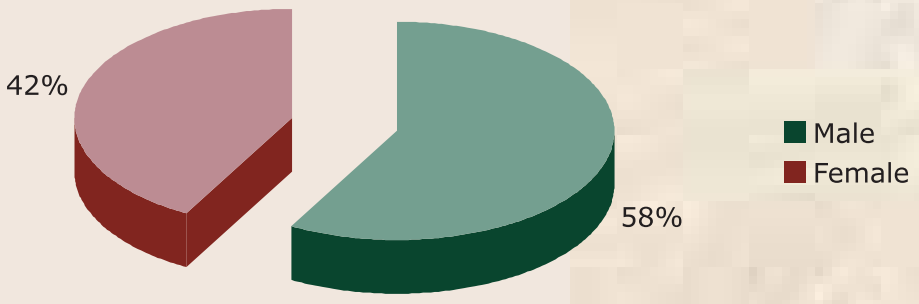
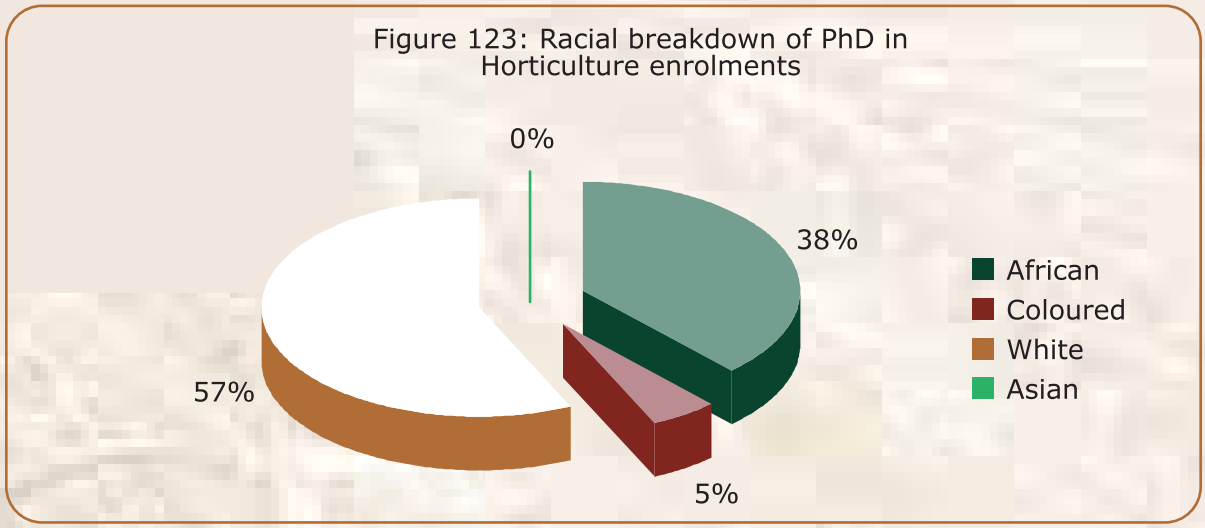


Figure 122 depicts that males constitute 58% of the Masters enrolments in this CESM and females account for 42%,

White males contribute 68% followed by Africans and Coloureds with 27% and 5% of the male enrolments in this CESM respectively. White females dominate the female enrolments at Masters level in this Horticulture with 75% and Africans constitute 25%.

Twenty one (21) students enrolled at PhD level in Horticulture for the 2005 academic year at universities.

Figure 123: Racial breakdown of PhD in Horticulture enrolments



Racial breakdown in figure 123 shows that Whites account for 57% followed by Africans and Coloureds with 38% and 5% of the PhD enrolments in Horticulture for the 2005 academic year. No Asian students enrolled in this CESM at PhD level for the 2005 academic year.

Figure 124: Gender breakdown of PhD in Horticulture enrolments

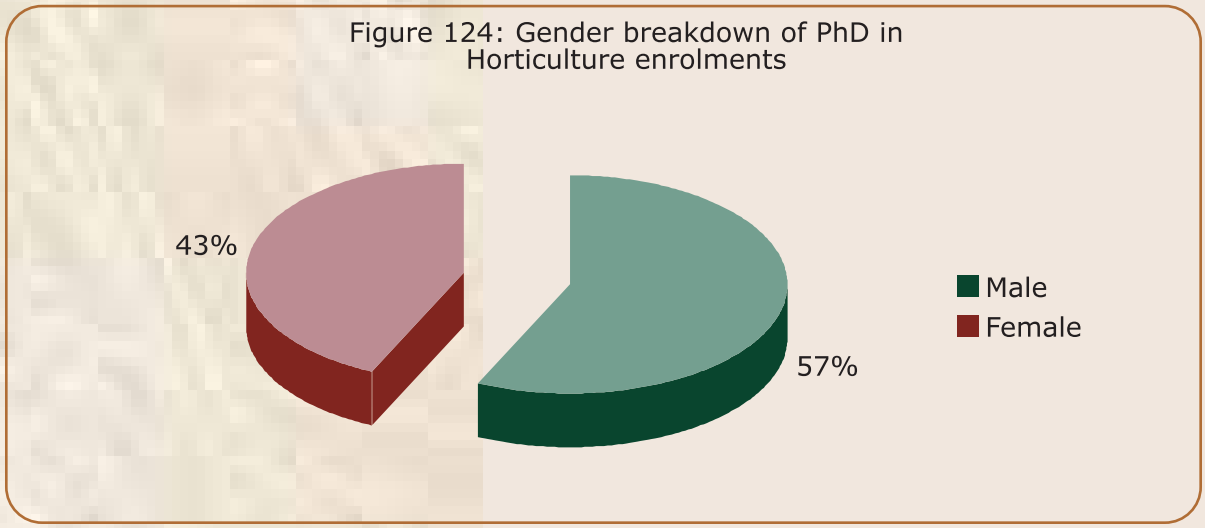


Figure 124 illustrates that males dominate the PhD in Horticulture enrolments with 57% and females amount to 43%. African males contribute 58%; Whites constitute 42% and no Coloured and Asian males enrolled at PhD level in this CESM in the 2005 academic year. White female students account for 78%, Africans and Coloureds together constitute 22%.

4.3.3.11 Plant Science enrolments at universities in 2005

This CESM includes programmes in the following;

- Crop Production, Crop Production Management, Irrigation Management, Irrigation Science/Agronomy, Irrigation Science/ Soil Science, Plant Pathology, and Entomology, Plant Breeding and Genetics, Plant Production, Plant Protection,

- Pasture Science and Crop Protection, Crop Science, Plant Production, Plant Production: Agronomy, Plant production: Pasture Science, Plant Production: Weed Science, Pasture Science, Plant Production: Horticulture, Nematology and Insect Management and Crop Soil Science.

Programmes in this CESM are offered by University of Fort Hare, University of Free State, University North West, University of

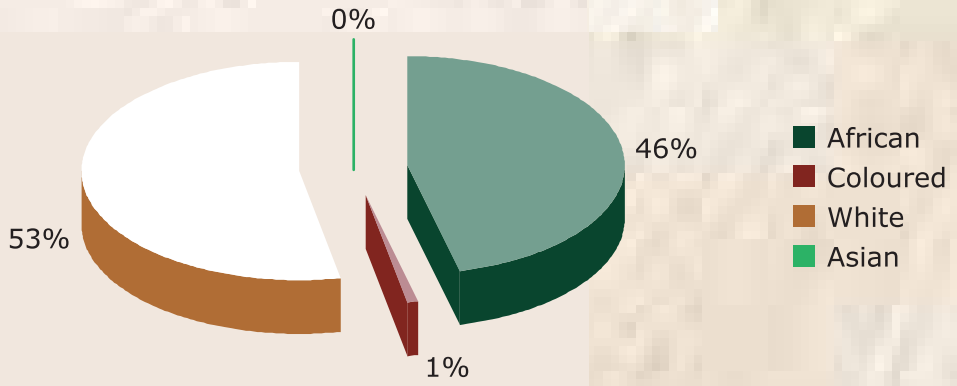
Limpopo, University of Stellenbosch and University of Pretoria. One hundred and eighty five (185) students enrolled in this CESM at universities for the 2005 academic year. Table 67 shows a demographic breakdown of Plant Science enrolments by level of qualification.

Table 67: Demographic breakdown of Plant Science enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	18	29	**47**	0	1	**1**	38	17	**55**	0	0	**0**	**103**
Honours	7	3	**10**	0	0	**0**	6	2	**8**	0	0	**0**	**18**
Masters	14	17	**31**	2	0	**2**	5	6	**11**	0	0	**0**	**44**
PhD	3	1	**4**	0	1	**1**	10	5	**15**	0	0	**0**	**20**
TOTAL	42	50	**92**	2	2	**4**	59	30	**89**	0	0	**0**	**185**

Plant Science Undergraduate enrolments account for 55% of enrolments in this CESM followed by Masters with 24%; PhD and Honours constitute 11% and 10% respectively. One hundred and three (103) students enrolled at Undergraduate level in this CESM.

Figure 125: Racial breakdown of Undergraduate in Plant Science enrolments



Whites accounted for 53% of the Undergraduate enrolments in Plant Science, African students accounted for 46% and Coloureds contributed only 1%. No Asian students enrolled in this CESM at Undergraduate level.

Figure 126: Gender breakdown of Undergraduate in Plant Science enrolments

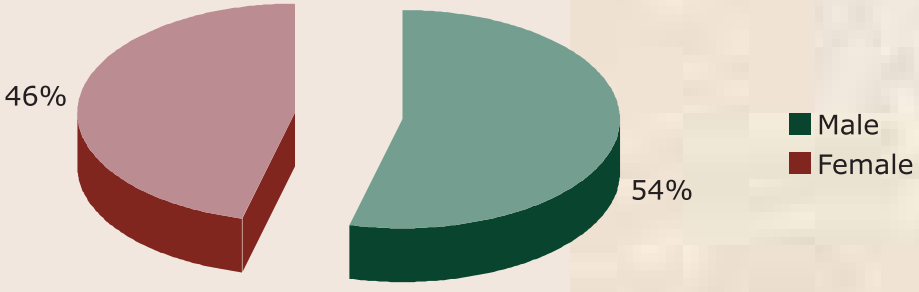
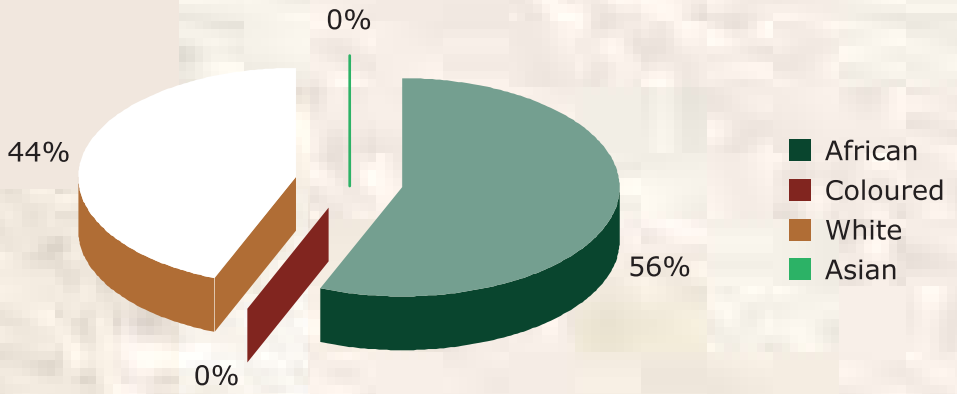


Figure 126 depicts that males dominated Undergraduate enrolments in Plant Science for 2005 with 54% and females amounted to 46%. White males accounted for 68% of the male enrolments at Undergraduate level in this CESM, African

males constituted 32% and no Coloured males enrolled at Undergraduate level in Plant Science. African females constituted 62% of the female enrolments in this CESM at Undergraduate level followed by White females with 36% and Coloured females constituted 2%.

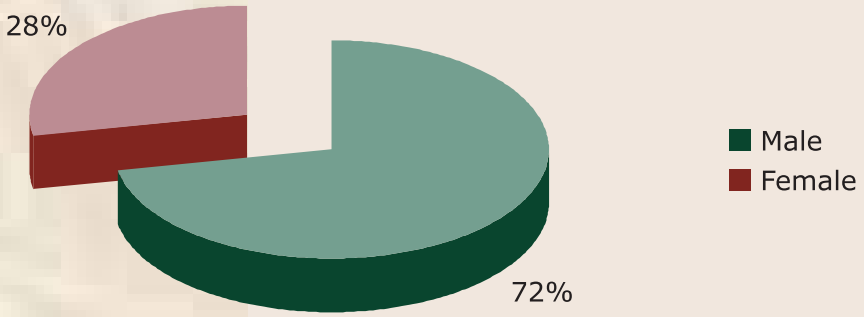
Eighteen (18) students enrolled at Honours level in Plant Science for 2005 academic year.

Figure 127: Racial breakdown of Honours in Plant Science enrolments



Africans constitute 56% and Whites amount to 44% of the Honours level at Plant Science. Neither Coloureds nor Asians enrolled at Honours level in Plant Science.

Figure 128: Gender breakdown of Honours in Plant Science enrolments



Males dominate the Honours enrolments in this CESM with 72% and females amount to 28%. African males constitute 54% of the male enrolments in this CESM and White males account for 46%. African and White females amount to 60% and 40% of the female enrolments at Honours level in this CESM.

Forty four (44) students enrolled at Masters levels this CESM for the 2005 academic year at Universities.

Figure 129: Racial breakdown of Masters in Plant Science enrolments

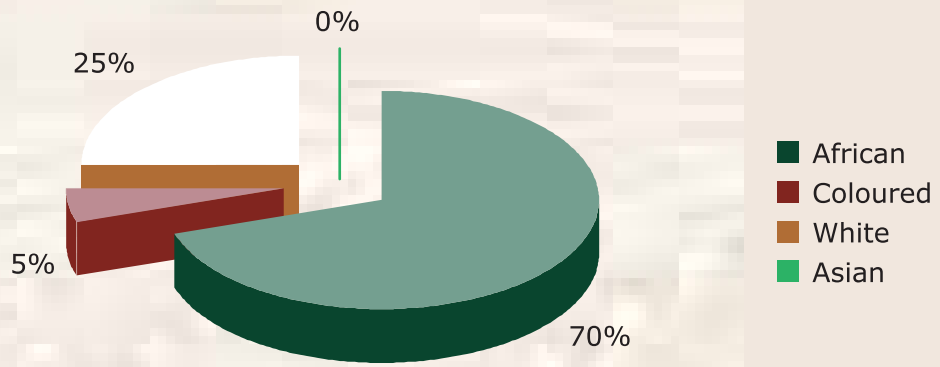
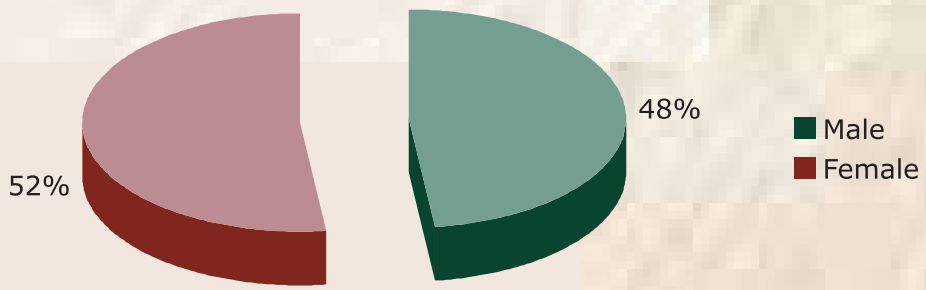


Figure 129 depicts that African students dominate the Masters enrolments in this CESM by 70% followed by White students with 25% and Coloureds account for 5%. No Asian students were registered at Masters level in Plant Science for the 2005 academic year.

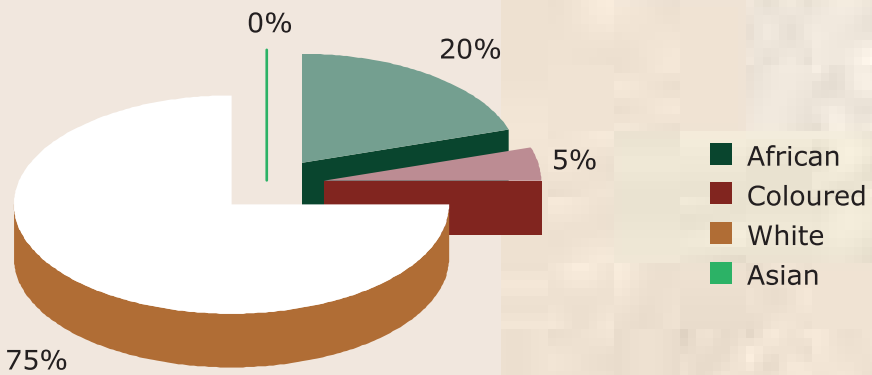
Figure 130: Gender breakdown of Masters in Plant Science enrolments



Female students dominate the Masters enrolments in Plant Science with 52% and males amount to 48%. African females account for 74% and White females constitute 26% of the female enrolments at Masters level in Plant Science. African males account for 67% followed by White males with 24% and Coloured contribute 9% of the male enrolments at Masters level in this CESM.

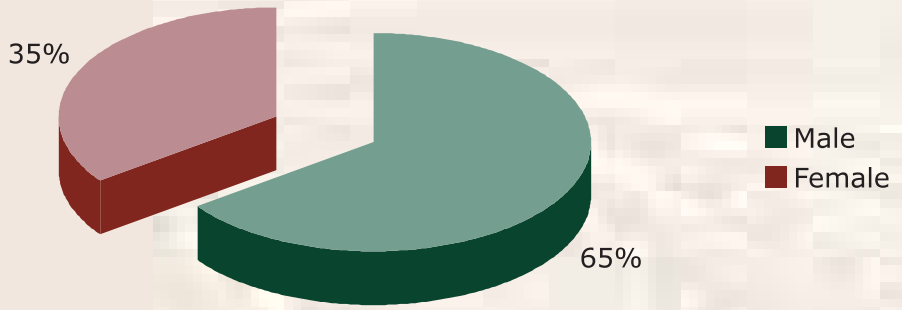
Twenty (20) students enrolled at PhD level in this CESM for the 2005 academic year at Universities.

Figure 131: Racial breakdown of PhD in Plant Science enrolments



White students amount to 75% followed by African and Coloured students with 20% and 5% of the PhD enrolments in Plant Science respectively. No Asian students enrolled at PhD level in this CESM.

Figure 132: Gender breakdown of PhD in Plant Science enrolments



Gender breakdown indicates that males account for 65% of the PhD enrolments in Plant Science and females contribute to 35%. White male students dominate with 77% and African males account for 23% of the male enrolments at PhD level in this CESM. White females also showed dominance with 72%, African and Coloured females account for 14% each of the female enrolments at PhD level in this CESM.

4.3.3.12 Rural Development Enrolments at Universities in 2005

Thirty (30) students in this CESM enrolled for the 2005 academic year at universities. Rural Development is offered by the University of Venda only. Table 68 depicts a demographic breakdown of Rural Development enrolments for the 2005 academic year by level of qualification.

Table 68: Demographic breakdown of Rural Development enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Honors	8	9	**17**	0	0	**0**	0	0	**0**	0	0	**0**	**17**
Masters	6	5	**11**	0	0	**0**	0	0	**0**	0	0	**0**	**11**
PhD	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
TOTAL	16	14	**30**	0	0	**0**	0	0	**0**	0	0	**0**	**30**

Honours enrolments constitute 57% of the enrolments in Rural Development followed by Masters enrolments with 37% and PhD enrolments constitute 7%.

All the 17 students enrolled at Honours level in this CESM were Africans, of which 8 were males and 9 were females. Eleven (11) African students enrolled at Masters in Rural Development; 6 were males and 5 were females. Two (2) African males enrolled at PhD level in this CESM.

4.3.3.13 Soil Science enrolments at universities in 2005

One hundred and thirteen (113) students enrolled in this CESM for the 2005 academic year at Universities.

Soil Science includes programmes in;

- Remote Sensing, Soil Science/Plant Pathology, Soil Science/Grassland Science, Soil Science and Plant Nutrition, Soil Science and Agronomy.

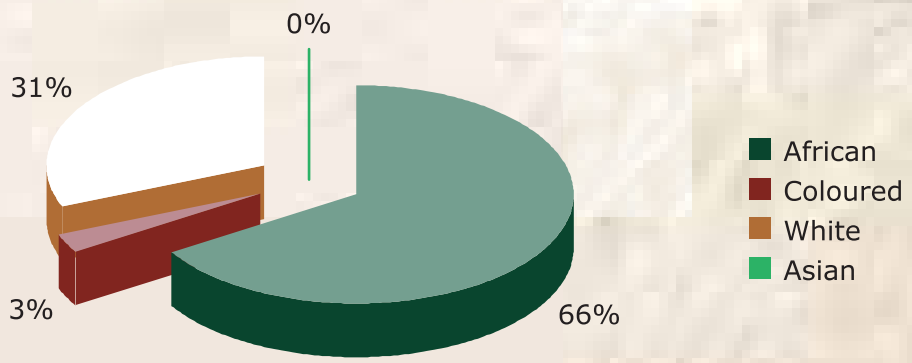
Programmes in Soil Science are offered by the University of Fort Hare, University of Free State, University of Stellenbosch, University of Limpopo and University of Pretoria. Table 69 presents a demographic breakdown of Soil Science enrolments for the 2005 academic year by level of qualification.

Table 69: Demographic breakdown of Soil Science enrolments at universities in 2005													
LEVEL	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Undergraduate	33	13	**46**	1	1	**2**	14	8	**22**	0	0	**0**	**70**
Honours	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**
Masters	9	7	**16**	0	1	**1**	7	3	**10**	0	0	**0**	**27**
PhD	4	0	**4**	0	0	**0**	5	5	**10**	0	0	**0**	**14**
TOTAL	47	20	**67**	1	2	**3**	26	17	**43**	0	0	**0**	**113**

Table 64 indicates that undergraduate enrolments dominated the Soil Science enrolments with 62% followed by Masters and PhD enrolments with 24% and 12% respectively. Honours enrolments were the lowest at 2%.

Seventy (70) students enrolled at Undergraduate level in Soil Science for the 2005 academic year.

Figure 133: Racial breakdown of Undergraduate in Soil Science enrolments



Africans enrolled at Undergraduate level in Soil Science account for 66% followed by White students with 31% meanwhile Coloureds amount to 3%. No Asian students enrolled in this CESM in the 2005 academic year.

Figure 134: Gender breakdown of Undergraduate in Soil Science enrolments

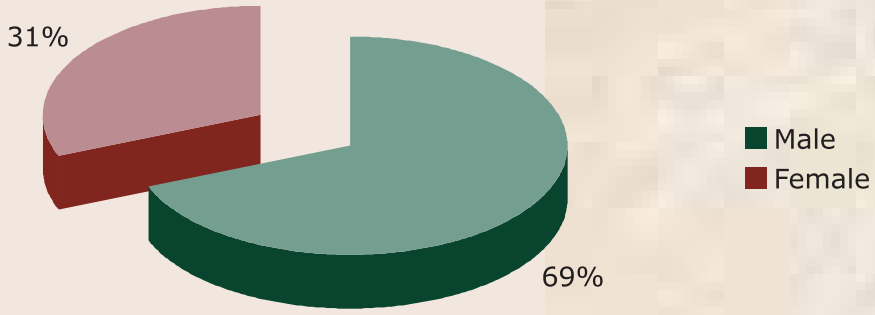
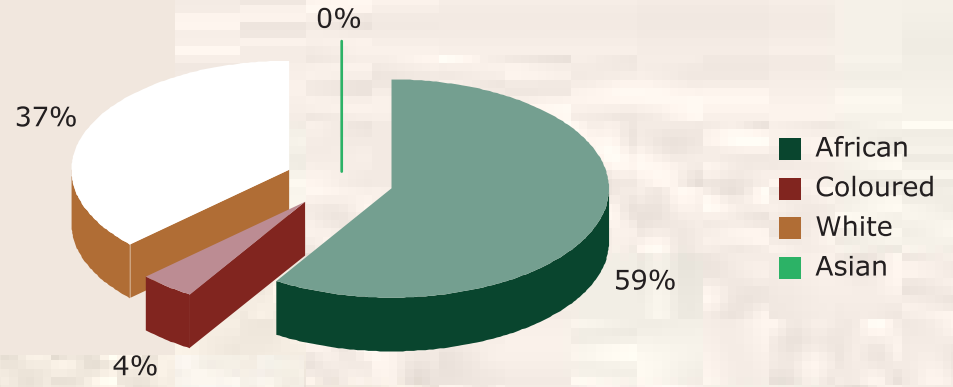


Figure 134 shows that male students account for 69% of the Undergraduate enrolments in Soil Science and females constitute 31%. African males account for 69% followed by White males with 29% and Coloureds amount to 2% of the male enrolments in Soil Science. African females account for 59%; White females contributed 36% and Coloured females constitute 5% of the female enrolments at Undergraduate level in this CESM.

Two (2) students enrolled at Honours level in Soil Science at Universities in the 2005 academic year, 1 was an African male and 1 was a White female.

Twenty seven (27) students enrolled at Masters level in Soil Science for the 2005 academic.

Figure 135: Racial breakdown of Masters in Soil Science enrolments



Africans account for 59% of the total number of enrolments followed by Whites with 37% and Coloureds with 4% of the Masters enrolments in Soil Science.

Figure 136: Gender breakdown of Masters in Soil Science enrolments

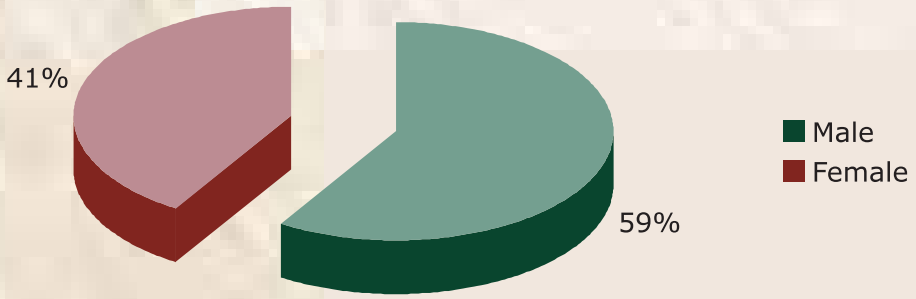


Figure 136 shows that male students account for 59% of the Masters enrolments in Soil Science and females amount to 41%. African males account for 56% and Whites constitute for 44%. African females account for 64% followed by White females with 27% and Coloureds with 9% of the female enrolments at Masters level in this CESM.

Fourteen (14) students enrolled at PhD level in Soil Science for the 2005 academic year.

Figure 137: Racial breakdown of PhD in Soil Science enrolments

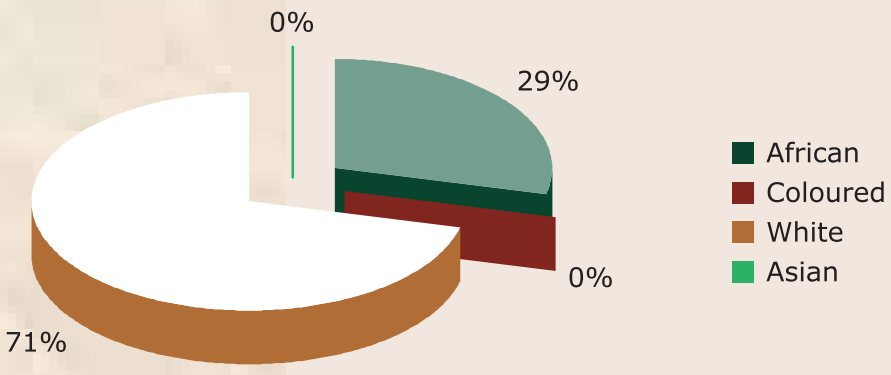


Figure 137 shows that Whites constitute 71% of the PhD enrolments in this CESM and African students constitute 29%. Neither Coloureds nor Asians enrolled at PhD level in Soil Science for the 2005 academic year.

Figure 138: Gender breakdown of PhD in Soil Science enrolments

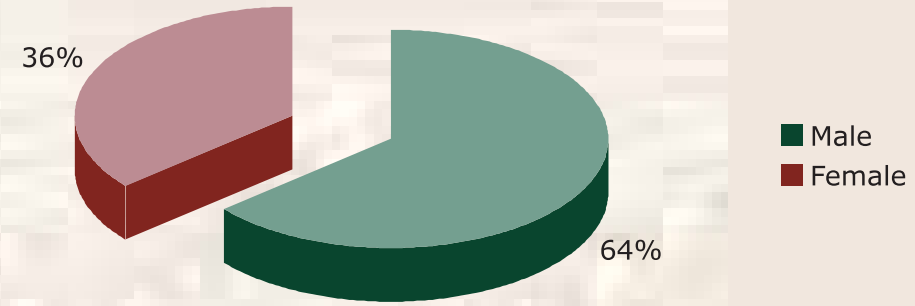


Figure 138 indicates that male enrolments account for 64% of the total enrolments at PhD level and females amount to 36%. White males account for 56% and African males constitute 44% of the male enrolments at PhD level in this CESM. Five (5) White females enrolled at PhD level in Soil Science in the 2005 academic year and other racial groups were non-existent.

4.3.3.14 Forestry enrolments at universities in 2005

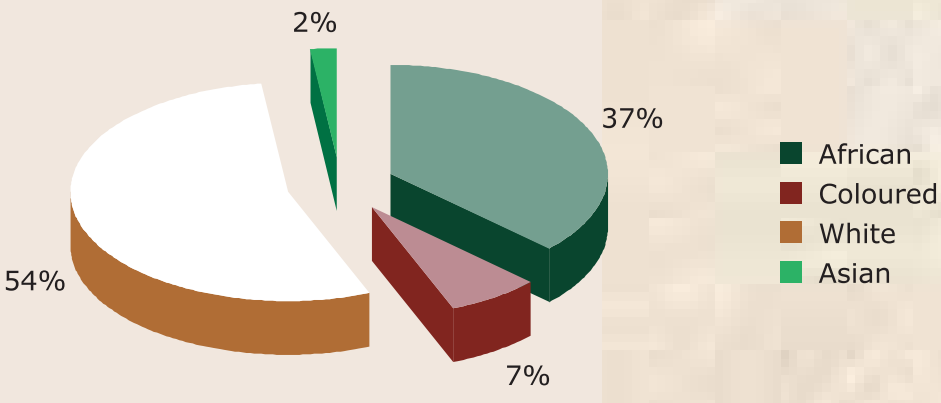
Programmes in this CESM are offered by the University of Stellenbosch and University of Venda. Eighty six (86) students enrolled in this CESM for the 2005 academic year at Universities. Table 70 shows a demographic breakdown of Forestry enrolments for the 2005 academic year by level of qualification.

Table 70: Demographic breakdown of Forestry enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	10	7	**17**	1	2	**3**	21	4	**25**	0	1	**1**	**46**
Masters	10	2	**12**	1	0	**1**	10	2	**12**	0	0	**0**	**25**
PhD	7	2	**9**	1	0	**1**	4	1	**5**	0	0	**0**	**15**
TOTAL	27	11	**38**	3	2	**5**	35	7	**42**	0	1	**1**	**86**

Undergraduate enrolments in Forestry constitute 54% of the enrolments in this CESM and it is followed by Masters enrolments with 29%. PhD enrolments account for 17% of the total enrolments in this CESM. Forty six (46) students enrolled at Undergraduate level in this CESM at universities for the 2005 academic year.

Figure 139: Racial breakdown of Undergraduate in Forestry enrolments



Whites and Africans account for 54% and 37% of the Undergraduate enrolments in Forestry respectively. Coloureds and Asians amount to 7% and 2% of the Undergraduate enrolments in Forestry.

Figure 140: Gender breakdown of Undergraduate in Forestry enrolments

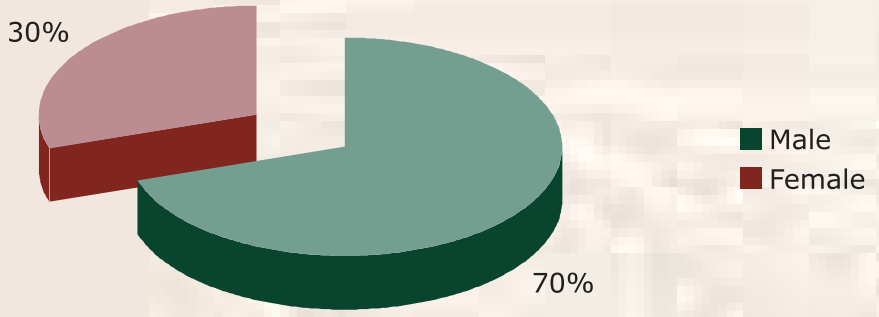
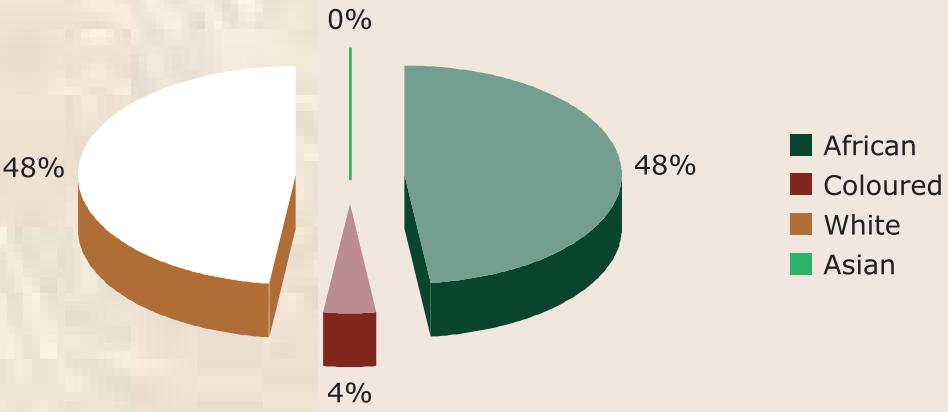


Figure 140 shows that male students dominate the Undergraduate enrolments in Forestry with 70% and female students constitute only 30%. White males dominated the male enrolments at Undergraduate level in this CESM with 66% followed by African males with 31% and Coloured males account for 3%. African females comprise 50% of the female enrolments at Undergraduate in this CESM followed by White females with 29% and Coloureds with 14%. Asian females recorded the lowest figures with 7% of the female enrolments at Undergraduate level in this CESM.

Twenty five (25) students enrolled in this CESM at Masters level for the 2005 academic year.

Figure 141: Racial breakdown of Masters in Forestry enrolments



Racial breakdown indicates that Whites and Africans constitute 48% each followed by Coloureds with 4% of the Masters enrolments in Forestry for the 2005 academic year. No Asian students enrolled at Masters level in this CESM.

Figure 142: Gender breakdown of Masters in Forestry enrolments

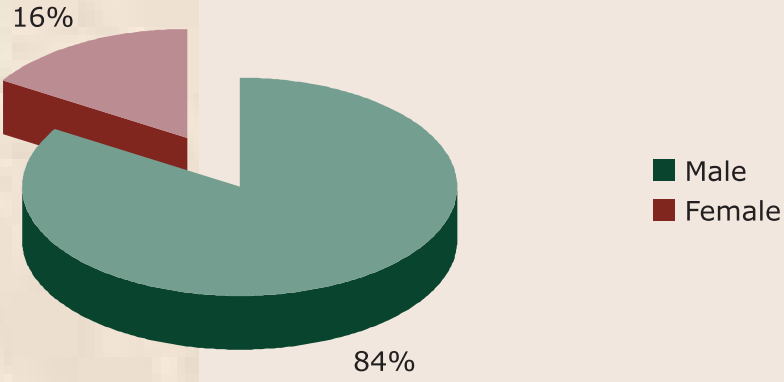
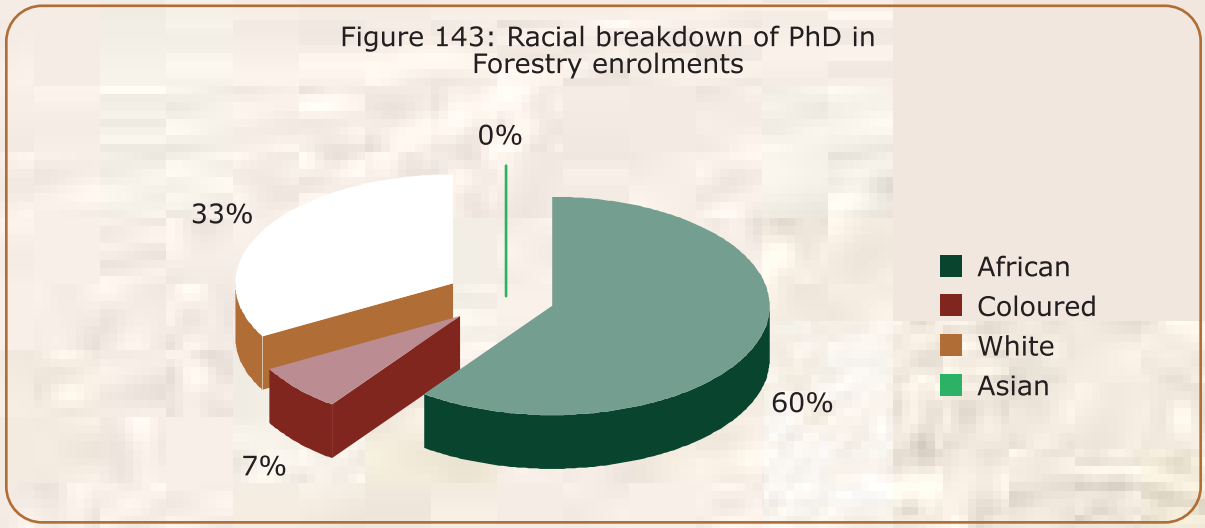


Figure 142 depicts that male students dominate Masters enrolments in this CESM with 84% and female students constitute

only 16%. White males contribute 48% followed by African males with 47% and Coloureds with 7%. African and White females share an equal representation at 50% of the female enrolments at Masters level in this CESM.

Fifteen (15) students enrolled at PhD level in Forestry at universities for the 2005 academic year.

Figure 143: Racial breakdown of PhD in Forestry enrolments



Racial breakdown of the PhD enrolments in Forestry indicates that African students account for 60% followed by White students with 33% and Coloureds students with 7%.

Figure 144: Gender breakdown of PhD in Forestry enrolments

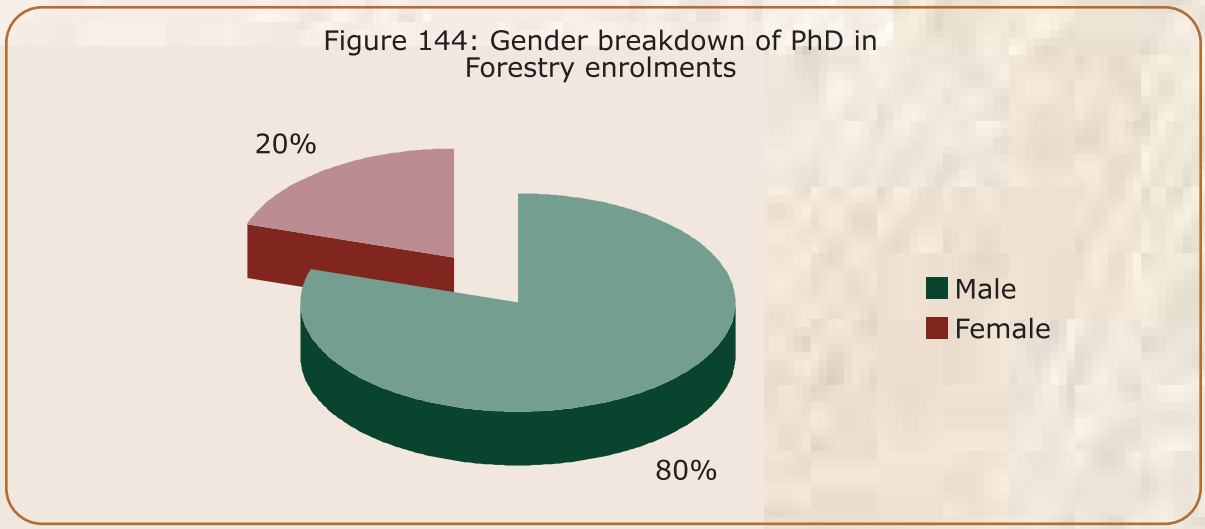


Figure 144 shows that males dominate with 80% and females constitute 20% of the PhD enrolments in this CESM. African males account for 58% followed by Whites with 33% and Coloureds with 8%. African female students amounted to 67% and White females contribute 33% of the female enrolments at PhD level in Forestry.

4.3.3.15 Renewable Natural Resources Enrolments at universities in 2005

One hundred and twenty four (124) students enrolled in this CESM in the 2005 academic year. This CESM includes programmes in Rural Resources Management, Natural Resources and Conservation Ecology.

Programmes in this CESM are offered by the University of Stellenbosch, University of Fort Hare, University of Free State, University of KwaZulu Natal and University of Pretoria. Table 71 shows a demographic breakdown of Renewable Natural Resources enrolments for the 2005 academic year by level of qualification.

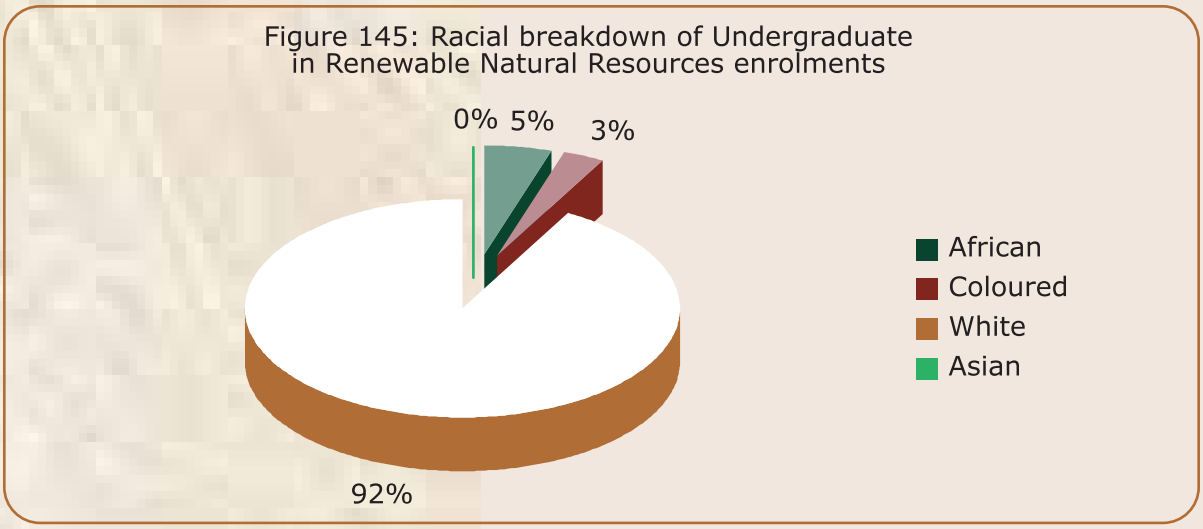
Table 71: Demographic breakdown of Renewable Natural Resources enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	2	3	**5**	1	2	**3**	42	46	**88**	0	0	**0**	**96**
Postgraduate Diploma	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
Masters	1	2	**3**	0	0	**0**	2	9	**11**	0	0	**0**	**14**
PhD	2	0	**2**	0	0	**0**	5	4	**9**	0	0	**0**	**11**
TOTAL	**7**	**6**	**13**	**1**	**2**	**3**	**49**	**59**	**108**	**0**	**0**	**0**	**124**

Undergraduate enrolments constitute 78% followed by Masters enrolments with 11% of the total enrolments in this CESM. PhD enrolments and Postgraduate diploma account for 9% and 2% respectively, of the total enrolments in Renewable Natural Resources.

Ninety six (96) students enrolled at Undergraduate level in Renewable Natural Resources for the 2005 academic year.

Figure 145: Racial breakdown of Undergraduate in Renewable Natural Resources enrolments



Whites amount for 92%; followed by Africans with 5% and Coloureds constituted 3% of the Undergraduate enrolments in Renewable Natural Resources. No Asians enrolled in this CESM for the 2005 academic year.

Figure 146: Gender breakdown of Undergraduate in Renewable Natural Resources enrolments

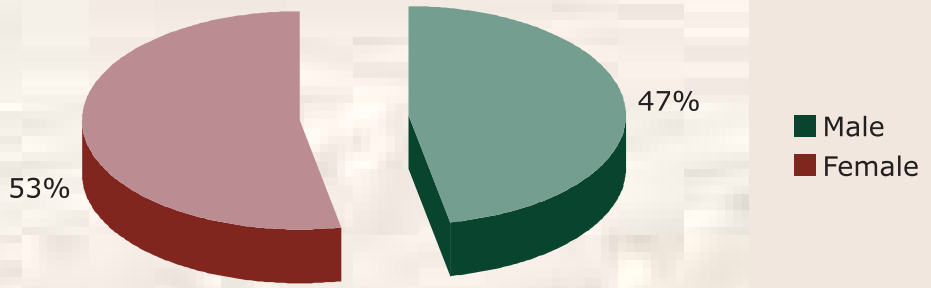


Figure 146 shows that females amount to 53% and males constitute 47% of the Undergraduate enrolments in this CESM. White females constituted a majority of 90%; African and Coloured females accounted for 6% and 4% of the female enrolments at Undergraduate level in this CESM. White males shown dominance with 92% followed by African males with 5% and Coloureds account for 3% of the male enrolments at Undergraduate in this CESM. Three (3) students enrolled at Postgraduate diploma in this CESM; 2 were African males and 1 was an African female. Fourteen (14) students enrolled at Masters level in Renewable Natural Resources for the 2005 academic year.

Figure 147: Racial breakdown of Masters in Renewable Natural Resources enrolments

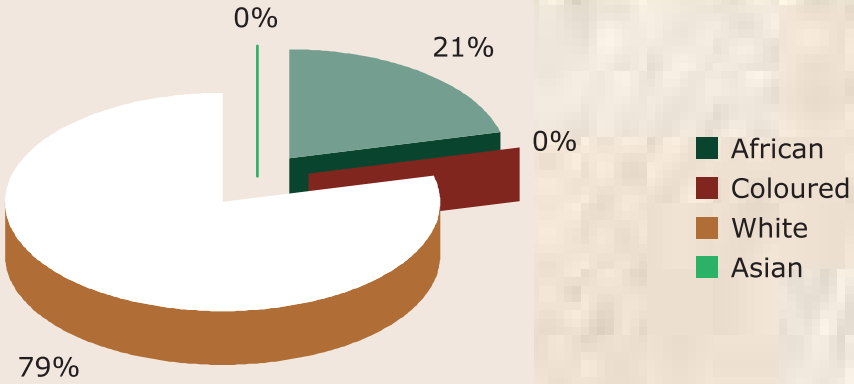
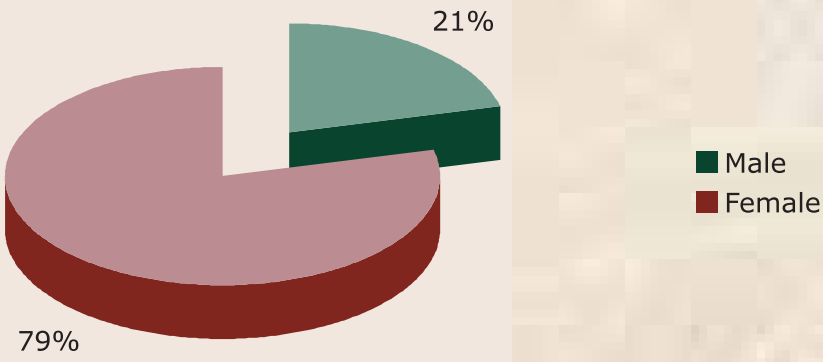


Figure 147 shows that Whites dominated with 79% and Africans constitute only 21% of the Masters enrolments in this CESM. Neither Coloureds nor Asians enrolled at Masters level in this CESM.

Figure 148: Gender breakdown of Masters in Renewable Natural Resources enrolments

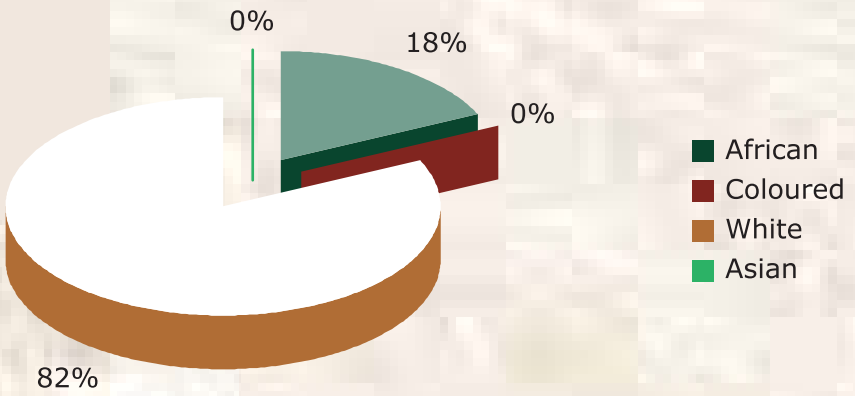


Gender breakdown shows that females were dominant with 79% followed by males with 21% of the Masters enrolments in this CESM. White females contribute 82% of the female enrolments at Masters level in this CESM and Africans account

for only 18%. White males contribute 67% of the male enrolments at Masters level in this CESM and Africans account for 33%.

Eleven (11) students enrolled at PhD level in this CESM in the 2005 academic year.

Figure 149: Racial breakdown of PhD in Renewable Natural Resources enrolments



Whites dominate the PhD enrolments at Renewable Natural Resources with 82% and Africans amount to 18%. No Coloureds and Asian students enrolled at PhD level in this CESM for the 2005 academic year.

Figure 150: Gender breakdown of PhD in Renewable Natural Resources enrolments

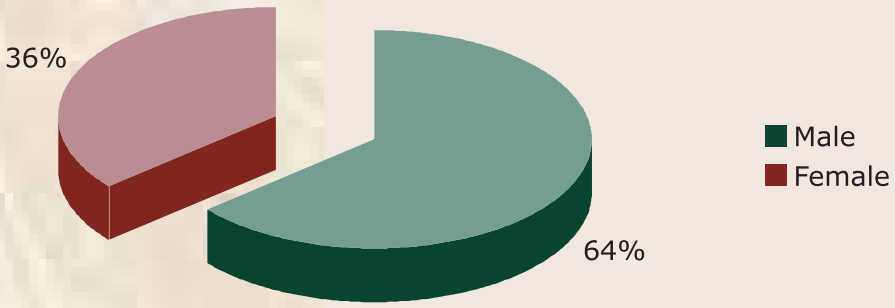


Figure 150 shows that males contribute 64% and females account for 36% of the PhD enrolments in this CESM for the 2005 academic year. White males amount to 71% followed by African males with 29% of the male enrolments at PhD level in this CESM. Four White females enrolled at PhD level in this CESM and other racial groups were non-existent.

4.3.3.16 Agriculture Management enrolments at universities in 2005

One thousand five hundred and fifty five (1 555) students enrolled in this CESM for the 2005 academic year at universities.

This CESM includes programmes in;

- Agricultural Administration, Mixed Farming Management, Disaster Management and Business Specific Farm Management-Viticulture.

Programmes in this CESM are offered by University of Free State, North West University, University of Limpopo, University of Stellenbosch, University of South Africa and University of KwaZulu Natal. Table 72 presents a demographic breakdown of Agriculture Management enrolments for the 2005 academic year by level of qualification.

Table 72: Demographic breakdown of Agriculture Management enrolments at universities in 2005													
LEVEL	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Undergraduate	537	301	**838**	6	4	**10**	405	151	**556**	1	0	**1**	**1405**
Honours	28	17	**45**	1	0	**1**	4	0	**4**	0	0	**0**	**50**
Masters	44	39	**83**	0	0	**0**	11	5	**16**	0	1	**1**	**100**
TOTAL	609	357	**966**	7	4	**11**	420	156	**576**	1	1	**2**	**1555**

Undergraduate enrolments constitute 91% of the total enrolments in this CESM; Masters accounte for 6% and Honours constitute 3%. One thousand four hundred and five (1405) students were enrolled at Undergraduate level in this CESM for the 2005 academic year at universities.

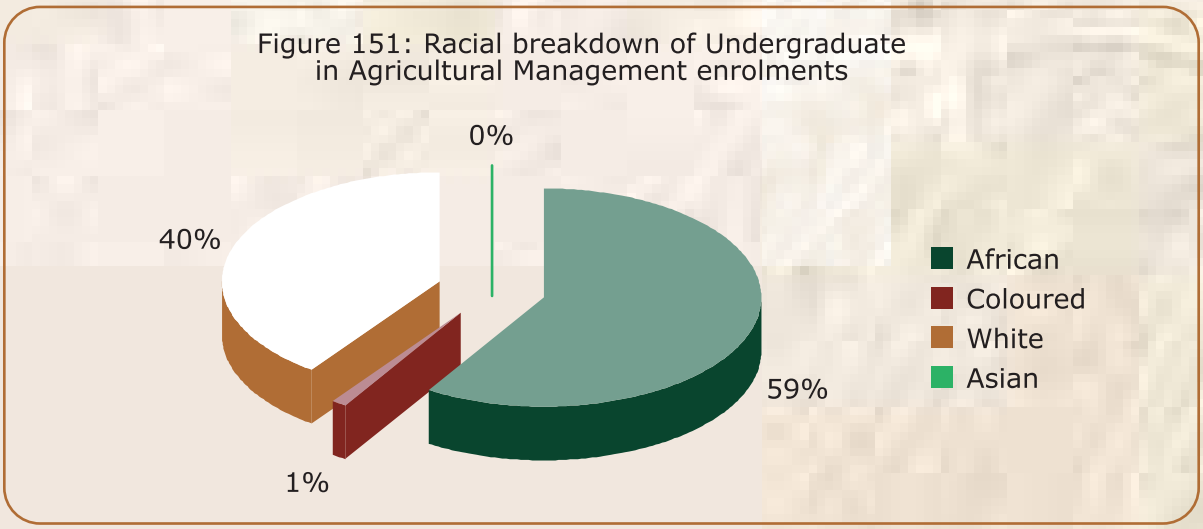


Figure 151 indicates that African students comprise 59% of Undergraduate enrolments in this CESM at universities followed by White students with 40% and Coloureds account for 1%.

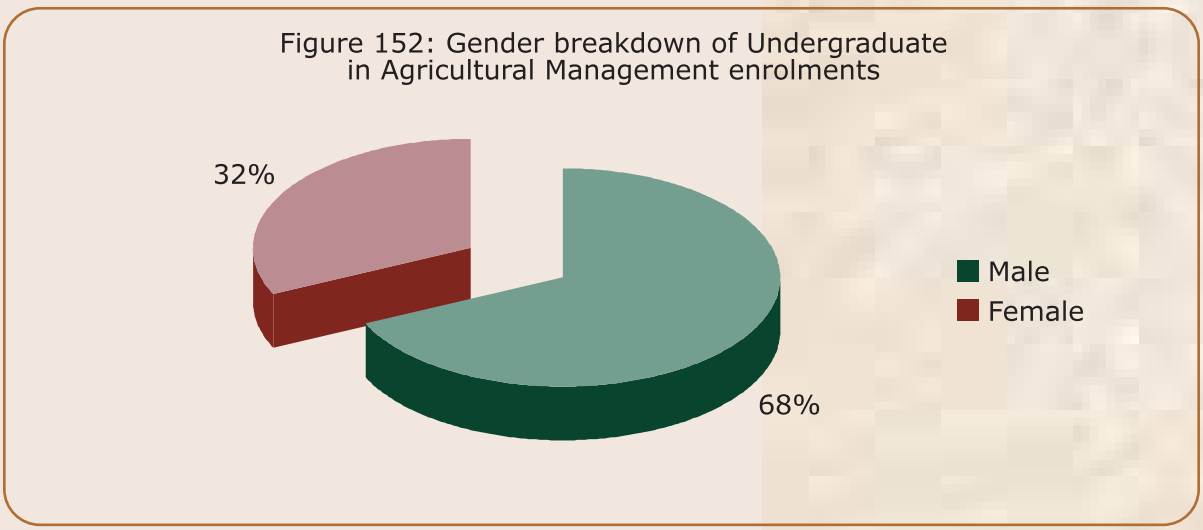


Figure 152 shows that male students accounted for 68% of the Undergraduate enrolments in this CESM and female students constitute 32%. African males account for 56% of the male enrolments in this CESM at Undergraduate level followed by White males with 43% and Coloured males with 1%. African females dominated the Undergraduate female enrolments in Agricultural Management with 66%; White females constitute 33% and Coloured females account for 1%.

Fifty (50) students enrolled at Honours level in this CESM at universities for the 2005 academic year.

Figure 153: Racial breakdown of Honours in Agricultural Management enrolments

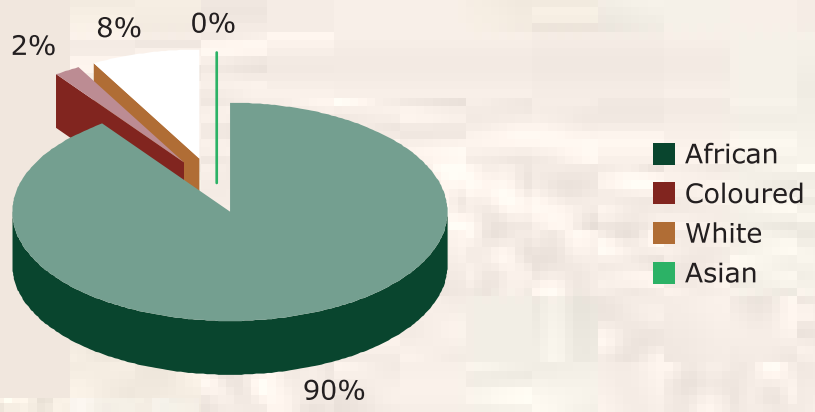


Figure 153 depicts that African students constitute 90% of the Honours enrolments in this CESM; White students amount to 8% and Coloured students constitute 2%.

Figure 154: Gender breakdown of Honours in Agricultural Management enrolments

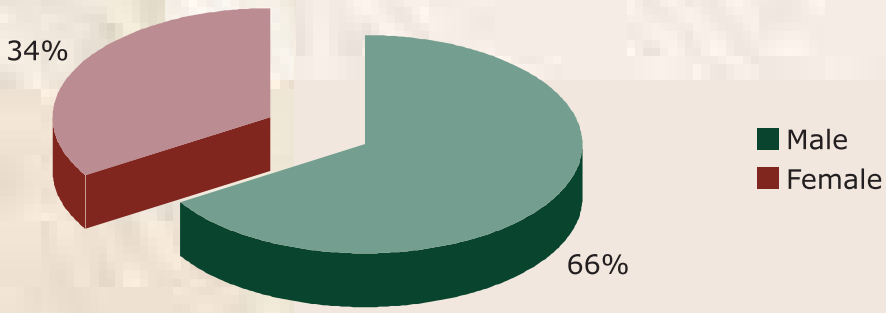


Figure 154 shows that male students constitute 66% of the Honours enrolments in Agricultural Management and females amount to 34%. African males dominated the male enrolments at Honours level in this CESM, with 85% followed by White males with 12% and Coloureds with 3%. Seventeen (17) African female students enrolled in this CESM at Honours level. There were no females enrolled from other racial groups.

One hundred (100) students enrolled at Masters level in this CESM for the 2005 academic year at universities.

Figure 155: Racial breakdown of Masters in Agricultural Management enrolments

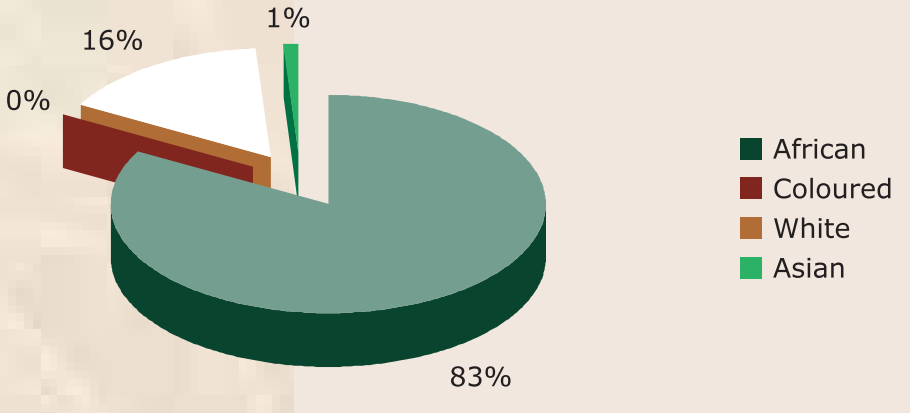


Figure 155 indicates that African students constitute 83% of Masters enrolments in this CESM followed by White students

with 16% and Coloured students accounted for 1% only. No Asian students enrolled at Masters level in this CESM at universities.

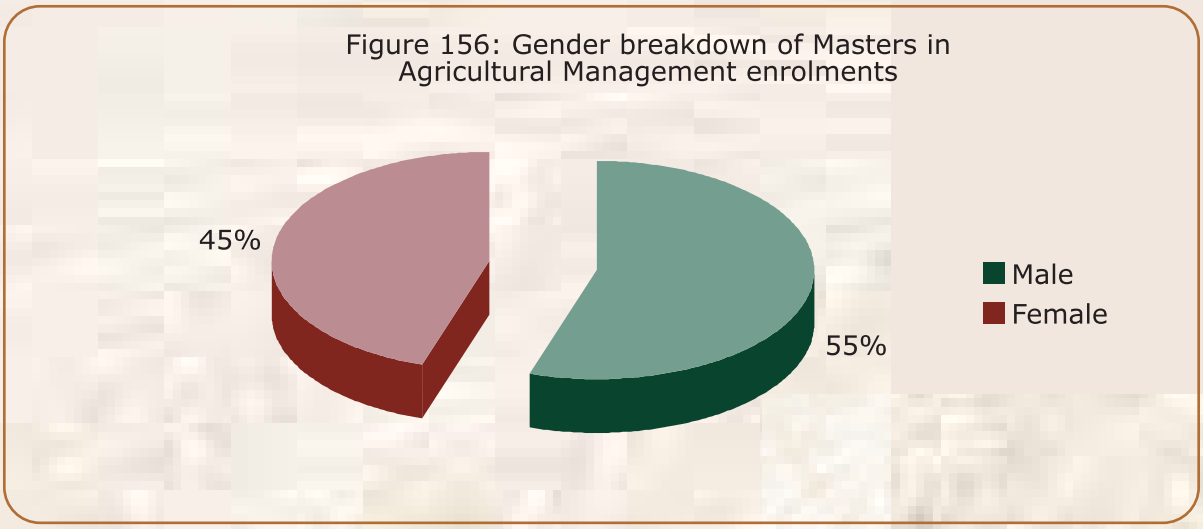


Figure 156 shows that male students account for 55% and female students constitute 45% of the Masters enrolments in this CESM. African males accounted for 80% of the male enrolments at Masters level in this CESM followed by White males with 20%. African females dominate females at Masters level in this CESM with 87% followed by Whites with 11% and Asians with 2%.

4.3.3.17 Other Agricultural and Renewable Resources enrolments at universities in 2005

One hundred and seventy seven (177) students enrolled in this CESM for the 2005 academic year at universities. This CESM includes programmes in Aquaculture, Sustainable Agriculture, Aquaculture and Animal Science, Aquaculture and Conservation Ecology.

Programmes in this CESM are offered by University Limpopo, University of Free State and University of Stellenbosch. Table 73 presents a demographic breakdown of Other Agricultural and Renewable Resources enrolments for the 2005 academic year by level of qualification.

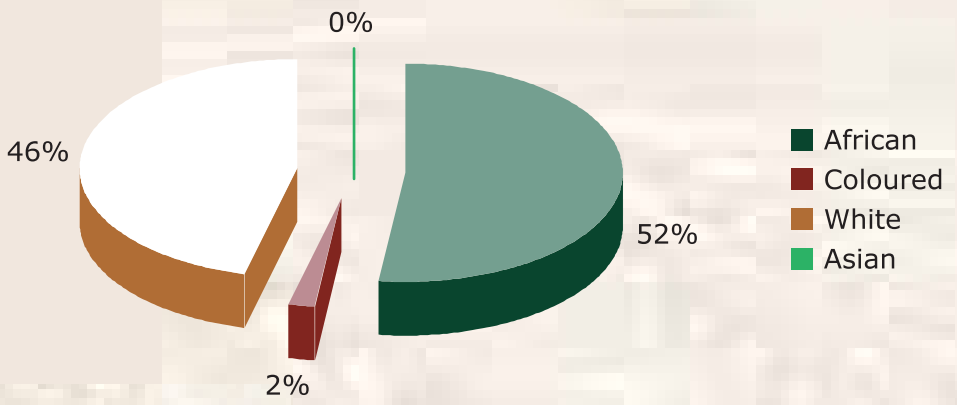
Table 73: Demographic breakdown of Other Agric. and Renewable Resources enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	0	0	**0**	0	0	**0**	8	1	**9**	0	0	**0**	**9**
Masters	65	21	**86**	3	1	**4**	68	10	**78**	0	0	**0**	**168**
TOTAL	65	21	**86**	3	1	**4**	76	11	**87**	0	0	**0**	**177**

Masters enrolments constitute 95% of the total enrolments in this CESM and Undergraduate account for only 5%. Nine (9) students enrolled at Undergraduate level in this CESM in the 2005 academic year, 8 were White males and 1 was a White female.

One hundred and sixty eight (168) students enrolled at Masters in the CESM at universities for the 2005 academic year.

Figure 157: Racial breakdown of Masters in Other Agric and renewable Resources enrolments



African students constitute 52% followed by White students with 46% and Coloured students constitute 2% of the Masters enrolments in this CESM.

Figure 158: Gender breakdown of Masters in Other Agric and Renewable Resources enrolments

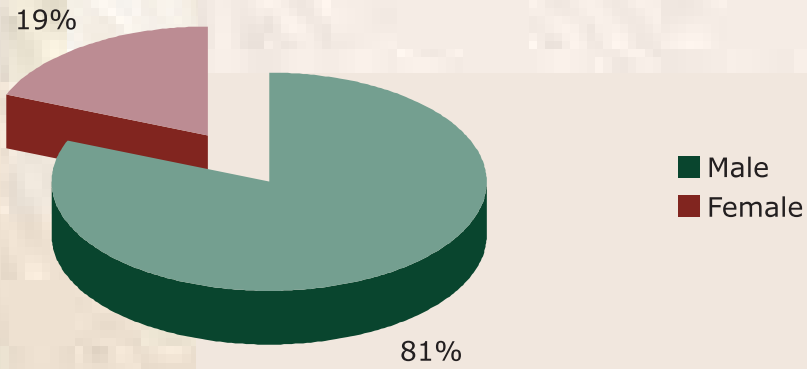


Figure 158 shows that male students dominate the Masters enrolments in this CESM for the 2005 academic year at universities by 81% and female students constitute 19%. White males account for 50% of the male enrolments at Masters level in this CESM; African males constitute 48% and Coloured males amount to 2%. African females account for 66% followed by Whites females with 31% and Coloureds with 3%.

4.3.3.18 Environmental Management enrolments at universities in 2005

Three hundred and thirty three (333) students enrolled in this CESM for the 2005 academic year at universities. This CESM comprises of programmes in Geography, Science and Geography, Environmental Science Studies.

University of South Africa, University of Limpopo and University of Fort Hare offer programmes in this CESM. Table 74 depicts a demographic breakdown of Environmental Management enrolments for the 2005 academic year by level of qualification.

Table 74: Demographic breakdown of Environmental Management enrolments at universities in 2005.														
LEVEL	**African**			**Coloured**			**White**			**Asian**			**TOTAL**	**%**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**		
Undergraduates	75	62	**137**	0	0	**0**	0	0	**0**	0	0	**0**	**137**	**41**
Honours	60	67	**127**	6	2	**8**	12	12	**24**	5	7	**12**	**171**	**51**
Masters	6	6	**12**	0	0	**0**	1	1	**2**	2	0	**2**	**16**	**5**
PhD	2	2	**4**	0	0	**0**	0	4	**4**	1	0	**1**	**9**	**3**
TOTAL	**143**	**137**	**280**	**6**	**2**	**8**	**13**	**17**	**30**	**8**	**7**	**15**	**333**	
%	43	41	**84**	2	0	**2**	4	5	**9**	3	2	**5**		**100**

Honours level in Environmental Management constitute 51% of the total enrolments in this CESM, followed by Undergraduate level with 41% and Masters level with 5%. PhD enrolments were the lowest at 3% of the total enrolments in this CESM. One hundred and thirty seven (137) African students enrolled at Undergraduate level in this CESM in the 2005 academic year, 75 students were African males and 62 were African females.

One hundred and seventy one (171) students enrolled at Honours level in this CESM for the 2005 academic year.

Figure 159: Racial breakdown of Honours in Environmental Management enrolments

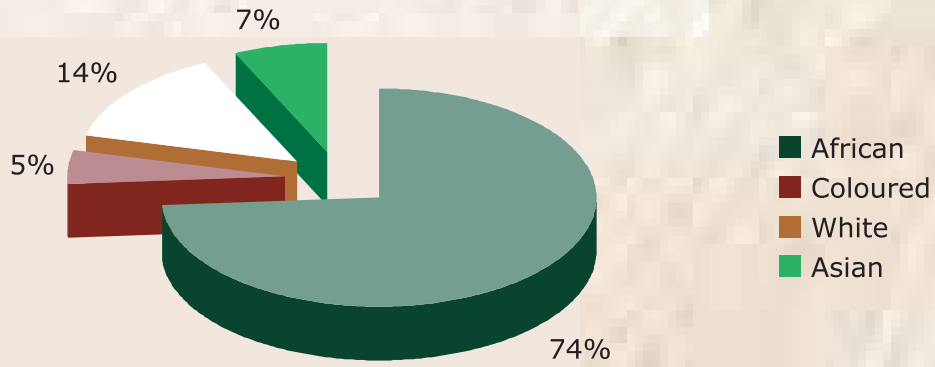


Figure 159 shows that African students dominate with 74% followed by Whites with 14% and Asians with 7%. Coloured students amount to 5% of the Honours enrolments in this CESM in the 2005 academic year.

Figure 160: Gender breakdown of Honours in Environmental Management enrolments

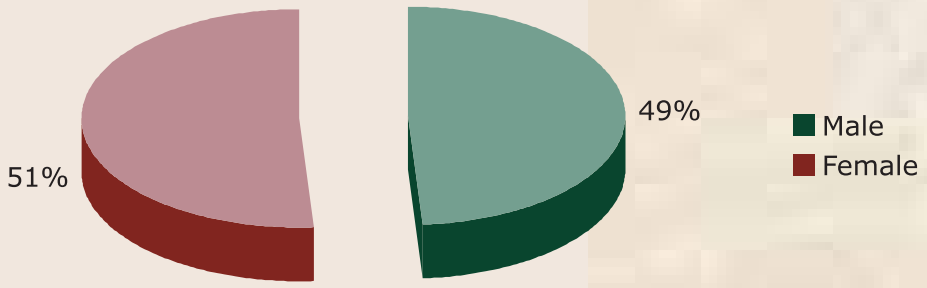


Figure 160 shows that female students account for 51% of the Honours enrolments in this CESM for 2005 academic year at universities and male students constitute 49%. African females account for 76% of the female enrolments at Honours level

in this CESM, followed by White females with 14% and Asian males with 8%. Coloured students constitute 2% of male enrolments at Honours level in this CESM.

Twelve (12) African students, 2 White students and 2 Asians enrolled at Masters level in this CESM in the 2005 academic year. No Coloured students enrolled at Masters level in this CESM for the 2005 academic year.

Nine (9) students enrolled at PhD in this CESM for 2005 academic year, 4 were African, 4 were Whites and 1 was Asian.

4.3.3.19 Wildlife enrolments at universities in 2005

Seventy five (75) students enrolled in this CESM for 2005 academic year at universities. The CESM includes programmes in Agricultural Wild Management. Programmes in Wildlife are offered by the University of Pretoria and University of Free State. Table 75 depicts a demographic breakdown of Wildlife enrolments for the 2005 academic year by level of qualification.

Table 75: Demographic breakdown of Wildlife enrolments at universities in 2005.

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	0	0	**0**	0	1	**1**	5	0	**5**	0	0	**0**	**6**	8
Honours	2	0	**2**	0	0	**0**	1	4	**5**	0	0	**0**	**7**	9
Masters	2	1	**3**	1	0	**1**	40	18	**58**	0	0	**0**	**62**	79
PhD	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**	4
TOTAL	4	1	**5**	1	1	**2**	46	22	**68**	0	0	**0**	**75**	
%	5	1	**6**	1	1	**3**	63	28	**91**	0	0	**0**		100

Masters level constitute 79% of the total enrolments in this CESM followed by Honours enrolments with 9% and Undergraduate enrolments with 8%. PhD enrolments were the lowest, amounting to 4% of the total enrolments in this CESM. Six (6) students enrolled at Undergraduate level in this CESM in the 2005 academic year, 5 were White males and 1 was Coloured female. Seven (7) students enrolled at Honours level in Wildlife in the 2005 academic; 4 were White females, 2 were African males and 1 was White male. At Masters level, 62 students enrolled in this CESM for the 2005 academic year.

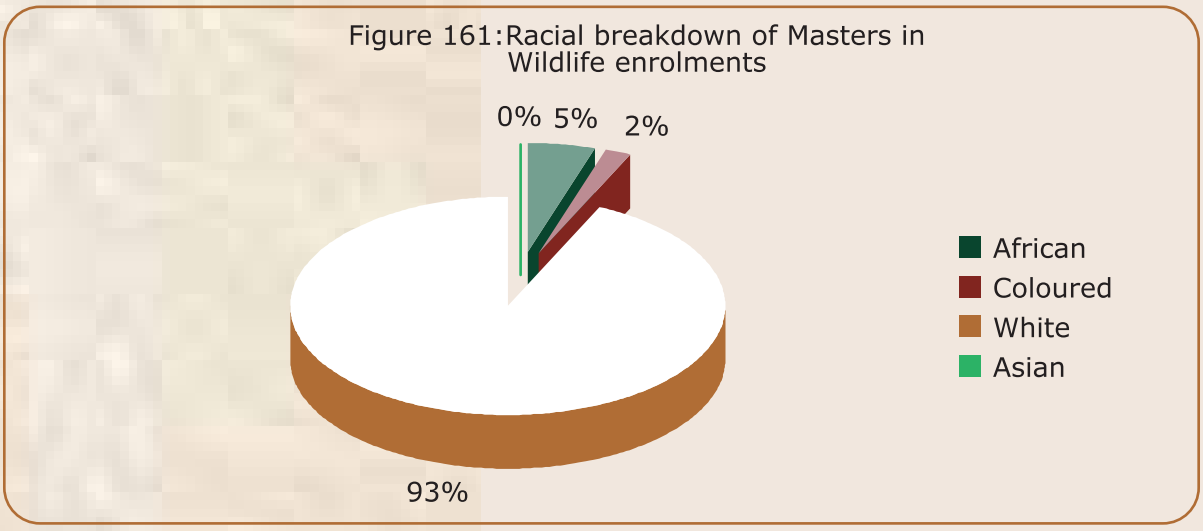


Figure 161 depicts that White students amount to 93% followed by African students with 5% and Coloured students with 2% of the Masters enrolments in this CESM for the 2005 academic year.

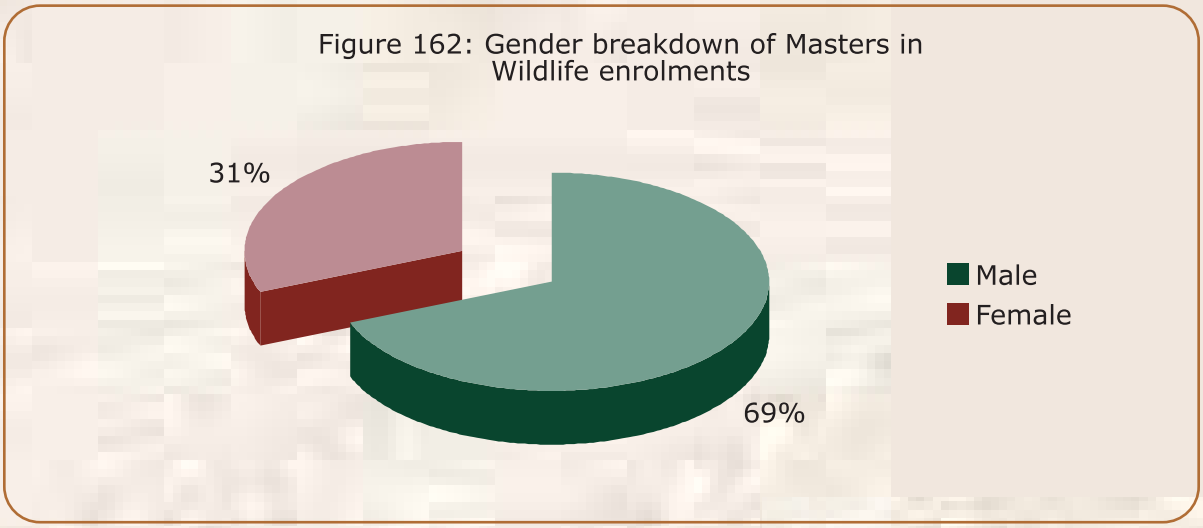


Figure 162 indicates that male students account for 69% of the Masters enrolments in this CESM and females constitute only 31%. White males dominate with 93% followed by African males with 5% and Coloured males 2%. No Asian males enrolled at Masters level in Wildlife. Eighteen (18) White females and one (1) African female enrolled at Masters level in this CESM.

4.3.3.20 Land Reclamation enrolments at universities in 2005

Forty five (45) students enrolled in this CESM at universities at Honours level for the 2005. This CESM includes programmes in Land Management. Programmes in this CESM are offered by the University of North West. All the students were Africans, 36 were males and 14 were females. Table 76 shows a demographic breakdown of Land Reclamation enrolments for the 2005 academic year by level of qualification.

Table 76: Demographic breakdown of Land Reclamation (Land Use) at universities in 2005

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	34	11	45	0	0	0	0	0	0	0	0	0	**45**	90
Honours	2	3	5	0	0	0	0	0	0	0	0	0	**5**	10
TOTAL	36	14	**50**	0	0	**0**	0	0	**0**	0	0	**0**	**50**	
%	72	28	**100**	0	0	**0**	0	0	**0**	0	0	**0**	**0**	100

The Undergraduate enrolments amount to 90% of the total enrolments in this CESM and Honours constituted 10%.

4.3.3.21 Agronomy enrolments at universities at 2004

One hundred and twenty eight (128) students enrolled in this CESM for the 2005 academic year at universities.

- This CESM includes programmes in Agronomy and Soil Science, Agronomy and Agriculture Economics, Agronomy and Agrometerology, Agronomy and Plant Breeding, Agronomy and Plant Pathology Agronomy and Animal Science, Agronomy and Food Science and Agronomy and Entomology.

Programmes in this CESM are offered by the University of Stellenbosch, University of Zululand, University of Limpopo, University of Pretoria and University of Free State. Table 77 presents a demographic breakdown of Agronomy enrolments for the 2005 academic year by level of qualification.

Table 77: Demographic breakdown of Agronomy (Inst.Agrar) enrolments at universities in 2005

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	38	29	**67**	1	0	**1**	24	5	**29**	0	0	**0**	**97**	**76**
Honours	3	0	**3**	0	0	**0**	1	0	**1**	0	0	**0**	**4**	**3**
Masters	5	4	**9**	0	0	**0**	5	2	**7**	0	0	**0**	**16**	**12**
PhD	6	0	**6**	0	0	**0**	2	2	**4**	1	0	**1**	**11**	**9**
Total	52	33	**85**	1	0	**1**	32	9	**41**	1	0	**1**	**128**	
%	41	26	**67**	0	0	**0**	25	7	**33**	0	0	**0**		**100**

The Undergraduate enrolments amount to 76% of the total enrolments in this CESM followed by Masters PhD and Honours with 12%; 9% and 3% respectively .

Ninety seven (97) students enrolled for the Undergraduate level in this CESM for the 2005 academic year.

Figure 163: Racial breakdown of Undergraduate in Agronomy enrolments

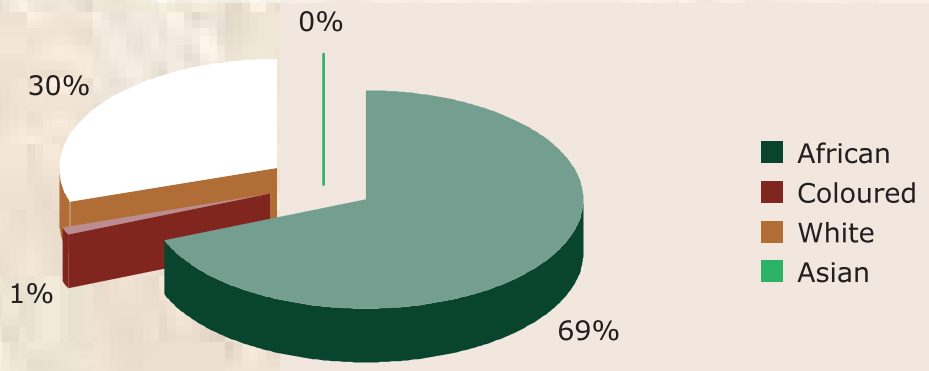


Figure 163 depicts that African students dominated the Undergraduate enrolments in this CESM with 69% followed by White students with 30% and Coloureds with 1%.

Figure 164: Gender breakdown of Undergraduate in Agronomy enrolments

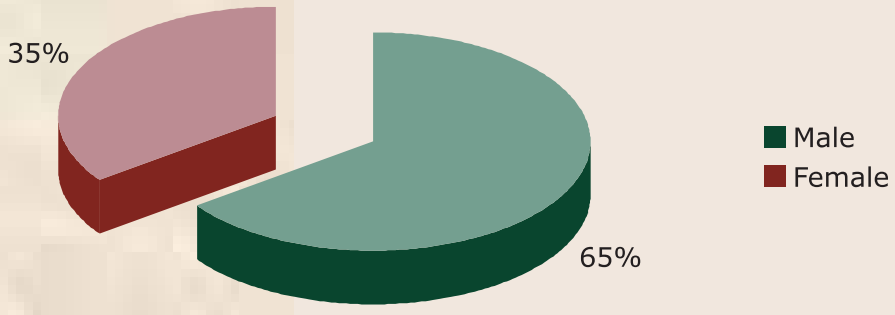


Figure 164 indicates that female students amount to 64% and male students constitute 36% of the Undergraduate enrolments in this CESM for the 2005 academic year. Four (4) students enrolled for Honours level, 3 were African male

students and 1 was a White male. No Coloured and Asian students enrolled in this CESM at Honours level for 2005 academic year.

Sixteen (16) students enrolled in this CESM for the 2005 academic year at universities. Nine (9) African students enrolled; 5 were male and 4 females. Seven (7) White students enrolled for Masters level; 5 were males and 2 were females. No Coloured and Asians enrolled at Masters level for the 2005 academic year in this CESM.

4.3.3.22 Consumer Science enrolments at universities in 2005

Six hundred and twenty six (626) students enrolled in this CESM for 2005 academic year at universities.

This CESM includes programmes in the following;

- Family Ecology and Consumer Science, Human Ecology (Community Agriculture, Human Ecology (Community Nutrition), Consumer Science Educations, Cons Sc: Clothing Retail Management, Cons Sc: Clothing Small Business Management, Cons Sc: Food Management (Retail Management), Cons Sc: Hospitality Management, Cons Sc: Interior Management (Inter. Retail Management),

- Cons Sc: Interior Management (Small Bus. Management, Cons Sc: Development, Ed (Home Economics), Cons Sc: Ed (Hotel-keeping & Catering, Cons Sc: Ed (Consumer Studies), Cons Sc: Ed (Hospitality Studies), Cons Sc: (Interior Merchandise Retail Management, Cons Sc: Food Management, Cons Sc: Merchandise Management, Cons Sc: Clothing Management, Cons Sc: General, and Rural Household Development

Programmes in this CESM are offered by University of South Africa, University of Venda and University of Pretoria. Table 78 depicts a demographic breakdown of Consumer Science enrolments in 2005 by level of qualification.

Table 78: Demographic breakdown of Consumer Science enrolments at universities in 2005.

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	95	91	**186**	3	1	**4**	17	357	**374**	1	3	**4**	**568**	91
Masters	3	35	**38**	0	0	**0**	2	10	**12**	0	0	**0**	**50**	8
PhD	0	1	**1**	0	0	**0**	0	7	**7**	0	0	**0**	**8**	1
TOTAL	98	127	**225**	3	1	**4**	19	374	**393**	1	3	**4**	**626**	
%	16	20	**36**	0.4	0	**0**	3	60	**63**	1	0	**0**		100

The Undergraduate enrolments constitute 91% of the total enrolments in this CESM followed by Masters with 8% and PhD with 1%. Five hundred and sixty eight (568) students enrolled at Undergraduate level in Consumer Science for the 2005 academic year.

Figure 165: Racial breakdown of Undergraduate in Consumer Science enrolments

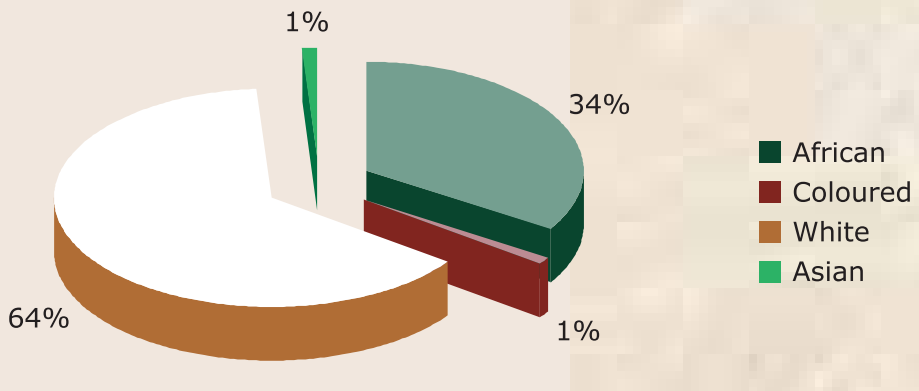


Figure 165 shows that White students constitute 66% followed by Africans with 32%. Coloureds and Asians together accounted for 2% of the enrolments at Undergraduate level in this CESM.

Figure 166: Gender breakdown of Undergraduate in Consumer Science enrolments

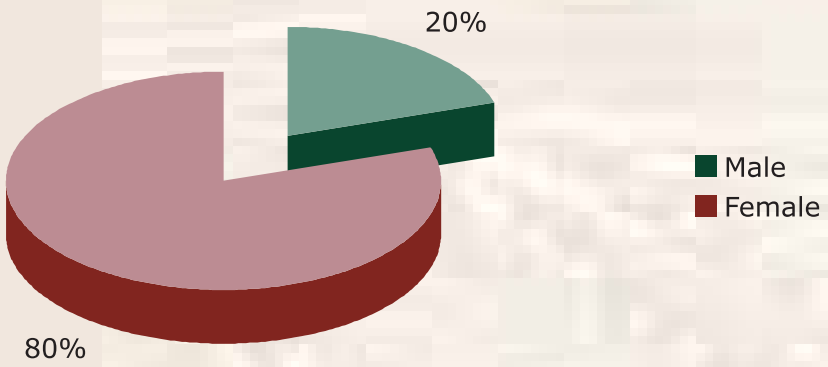


Figure 166 shows that female students constitute 80% and male students amount to 20% of the total enrolments at Undergraduate level in this CESM. African females dominate the female enrolments at Undergraduate level in this CESM with 79%; White females amounted to 20% followed by and Asian females with 1%. Coloured females were almost non-existent.

African males account for 81%, followed by White and Coloured males with 15% and 3% of the male enrolments at Undergraduate level in Consumer Science respectively. Asian males recorded the least figures at 1% of the male enrolments at Undergraduate level in this CESM. Fifty (50) students enrolled at Masters level in Consumer Science for the 2005 academic year at universities.

Figure 167: Racial breakdown of Masters in Consumer Science enrolments

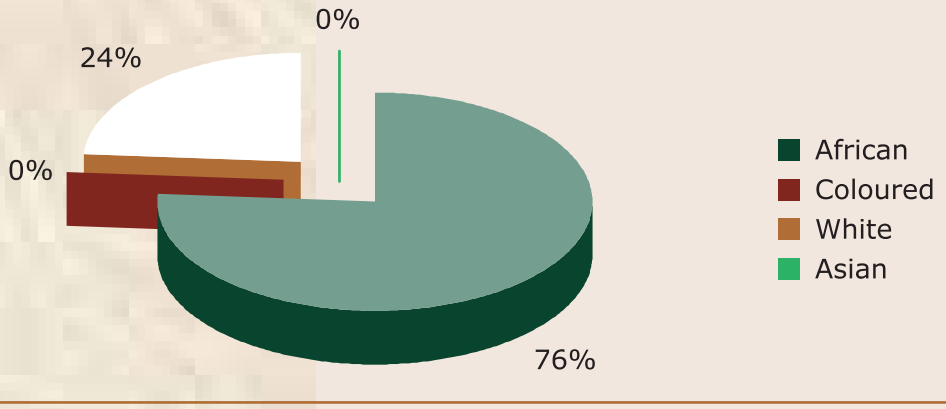


Figure 167 depicts that Whites constitute 76% and African students amount to 24% of the Masters enrolments in Consumer Science. Neither Coloureds nor Asians enrolled in this CESM at Masters level.

Figure 168: Gender breakdown of Masters in Consumer Science enrolments

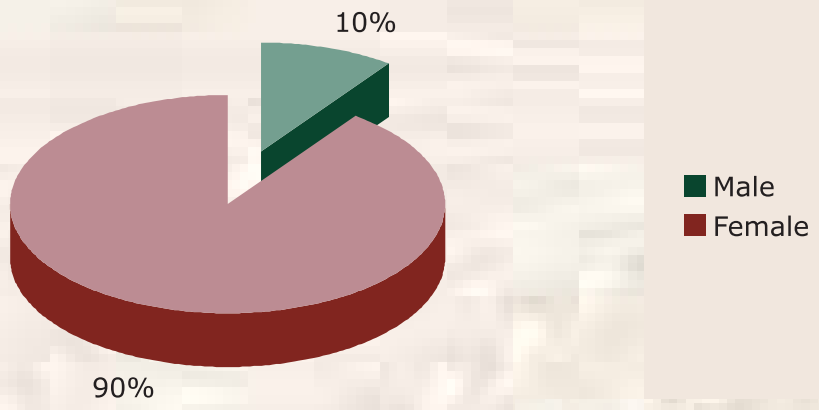


Figure 168 shows that females constitute 90% and males amount to 10% of the Masters enrolments in Consumer Science for the 2005 academic year. Thirty five (35) African females and 10 White females enrolled at Masters level in this CESM. Three (3) African males and 2 White males enrolled at Masters level in Consumer Science.

4.3.4. Inst. Agrar. Stream Programmes

Inst. Agrar. Stream Programmes are offered by the University of Pretoria only. They include Food Technology, Animal Production, Horticulture, Land Reclamation, Rural Development, Agricultural Economics, and Agronomy. Students enrolled or qualified in these programmes might be allowed to proceed to the PhD level or divert to the Science Stream in a similar field, depending on their academic performance.

4.3.4.1 Enrolments in Plant Science (Inst. Agrar. Stream)

Seventeen (17) students enrolled in this CESM for the 2005 academic year at universities. This CESM consist of programmes in Plant Production, Plant Production: Horticulture, Plant Production: Agronomy and Pasture Science. Table 79 shows a demographic breakdown of Plant Science (Inst.Agrar. Stream) enrolments in 2005, by level of qualification.

Table 79: Demographic breakdown of Plant Science (Inst.Agrar.Stream) at universities in 2005

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	4	1	**5**	0	0	**0**	3	2	**5**	1	0	**1**	**11**	
Honours	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**	
Masters	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**	
TOTAL	8	3	**11**	0	0	**0**	3	2	**5**	1	0	**1**	**17**	
%	47	18	**65**	0	0	**0**	18	11	**29**	6	0	**6**		100

4.3.4.2 Enrolments in Agricultural Food Technology (Inst. Agrar. Stream) at universities in 2004

Twenty six (26) students enrolled in this CESM for the 2005 academic year at universities. This CESM consist of programmes in B.Inst. Agrar, B.Inst. Agrar. Honours, M.Inst.Agrar. and (PhD in Food Processing and Food Production and Processing. Table 80 presents a demographic breakdown of Agric. Food Technology (Inst.Agrar. Stream) enrolments, for the 2005 academic year by level of qualification.

Table 80: Demographic breakdown of Agricultural Food Technology (Inst.Agrar.Stream) at universities in 2005

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	4	14	**18**	0	0	**0**	1	1	**2**	0	0	**0**	**20**	78
Honours	1	0	**1**	0	1	**1**	0	0	**0**	0	0		**2**	7
Masters	0	4	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**	15
TOTAL	5	18	**23**	0	1	**1**	1	1	**2**	0	0	**0**	**26**	
%	19	69	**88**	0	4	**4**	4	4	**8**		0	**0**		100

Twenty (20) students enrolled for Undergraduate level in the CESM for the 2005 academic year. Eighteen (18) students were Africans; 2 were Whites and no Coloured and Asian enrolled for wildlife for 2005. Two (2) students enrolled for Honours in the CESM, 1 was a African, 1 was Coloured and no Asians enrolled at Honours level in this CESM for 2005 academic year. Four (4) Africans females enrolled for Masters level in this CESM for the 2004 academic year.

4.3.4.3 Animal Science (Inst. Agrar. Stream) enrolments at universities in 2005

This CESM comprise of programmes in Animal Production and Animal Production Management. Fifteen (15) students enrolled in this CESM for the 2005 academic year. Table 81 presents a demographic breakdown of Animal Science (Inst. Agrar. Stream) enrolments for the 2005 academic year, by level of qualification.

Table 81: Demographic breakdown of Animal Science (Inst.Agrar.Stream) at universities in 2005.

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	1	1	**2**	0	0		1	1	**1**		0		**4**	**27**
Masters	9	0	**9**	1	0	**1**	0	0	**0**	1	0	**1**	**11**	**73**
TOTAL	10	1	**11**	1	0	**1**	1	1	**1**	1	0	**1**	**15**	
%	67	6	**73**	6	0	**6**	6	6	**12**	6		**6**		**100**

Four (4) students enrolled at Undergraduate level in this CESM at universities for the 2005, of which 2 were African students and 2 were coloured students. The enrolments constituted 2 males and 2 females. Eleven (11) students enrolled for Masters level, 9 were African males; 1 was a Coloured male and 1 was an Asian male.

4.3.4.4. Horticulture (Inst. Agrar. Stream) enrolments at universities in 2005

This CESM includes B.Inst.Agrar, B.Inst.Agrar Honours, and M.Inst.Agrar in Horticulture. Five (5) students enrolled in this CESM at universities for the 2005 academic year. Table 82 shows a demographic breakdown of the 2005 Horticulture (Inst.Agrar. Stream) enrolments, by level of qualification.

Table 82: Demographic breakdown of Horticulture (Ins. Agrar Stream) at universities 2005.													
LEVEL	African			Coloured			White			Asian			TOTAL
	M	F	T	M	F	T	M	F	T	M	F	T	
Masters	2	3	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
TOTAL	2	3	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**

All five (5) students enrolled in this CESM for the 2005 academic year were Masters candidates; 3 were African females and 2 were African males.

4.3.4.5. Land Reclamation (Inst.Agrar. Stream) Enrolments at Universities in 2004

Twelve (12) students enrolled in this CESM for the 2005 academic year at universities. This CESM includes programmes in Land Development and Land Use Planning. Table 83 presents a demographic breakdown of Land Reclamation (Inst.Agrar. Stream) enrolments, in the 2005 academic year by level of qualification.

Table 83: Demographic breakdown of Land Rec (Land Use Inst. Agrar.Stream) at universities in 2005														
LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**	**42**
Honours	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	**8**
Masters	2	1	**3**	0	0	**0**	3	0	**3**	0	0	**0**	**6**	**50**
TOTAL	6	3	**9**	0	0	**0**	3	0	**3**	0	0	**0**	**12**	

Five (5) African students enrolled at Undergraduate level in this CESM; 3 were males and 2 were females. One (1) African male enrolled at Honours level in the CESM for the 2005 academic year. Six (6) students enrolled at Masters level in this CESM for the 2005 academic year at universities. Two (2) were African males; 1 was an African female and 3 were White males.

4.3.4.6. Rural Development (Inst.Agrar. Stream) Enrolments at Universities in 2005

This CESM encompasses programmes in Rural Development Management and Rural Development Planning. Fourteen (14) students enrolled in this CESM for the 2005 academic year at universities. Table 84 depicts a demographic breakdown of Rural Development (Inst.Agrar.Stream) enrolments, in the 2005 academic year by level of qualification.

Table 84: Demographic breakdown of Rural Dev (Ins. Agrar.Stream) enrolments at Universities														
LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	2	0	**2**	0	0	**0**	0	1	**1**	0	0	**0**	**3**	**21**
Honours	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	**21**
Masters	4	1	**5**	0	0	**0**	0	1	**1**	0	0	**0**	**6**	**43**
PhD	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**	**14**
TOTAL	10	1	**11**	0	0	**0**	0	3	**3**	0	0	**0**	**14**	
%	72	7	**78**	0	0	**0**	0	21	**21**	0	0	**0**		**100**

Only 2 African male students and one Coloured female enrolled at Undergraduate level in this CESM for the 2005 academic year at universities. At Honours level 3 African males enrolled. Six (6) students enrolled at Masters level; 5 were African

students and 1 was a White student. At PhD level 2 students enrolled; 1 was an African male and 1 was a White female.

4.3.4.7 Agriculture Economics (Inst.Agrar. Stream) enrolments at universities in 2005

This CESM comprises programmes in Agricultural Economics: Animal Production. Twenty six (26) students enrolled in this CESM for the 2005 academic year at universities. One (1) African female enrolled at Undergraduate level.

Six (6) African students enrolled at Honours level in this CESM; 4 were females and 2 were males. Nineteen (19) students enrolled at Masters level in this CESM; 13 were African male students, 4 African females, 1 was Coloured female and 1 Asian male. Table 85 shows a demographic breakdown of Agric. Economics (Inst.Agrar.Stream) enrolments for the 2005 academic year by level of qualification.

Table 85: Demographic breakdown of Agricultural Economics (Inst.Agrar.Stream) at universities in 2005.

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	**4**
Honours	2	4	**6**	0	0	**0**	0	0	**0**	0	0	**0**	**6**	**23**
Masters	13	4	**17**	0	1	**1**	0	0	**0**	1		**1**	**19**	**73**
TOTAL	**15**	**9**	**24**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**26**	
%	**58**	**34**	**92**	**0**	**4**	**4**	**0**	**0**	**0**	**4**	**0**	**4**		**100**

3.3.4.8 Agronomy (Inst.Agrar.Stream) enrolments at universities in 2005.

Four (4) students enrolled in this CESM for 2005 academic year at universities. This CESM includes programmes in Agronomy/ Horticulture. Table 86 presents a demographic breakdown of Agronomy (Inst.Agrar.Stream) at the universities in 2005.

Table 86: Demographic breakdown of Agronomy (Inst.Agrar.Stream) at the universities in 2005.

LEVEL	African			Coloured			White			Asian			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	**25**
Masters	2	0	**2**	0	0	**0**	0	1	**1**	0	0	**0**	**3**	**75**
TOTAL	2	1	**3**	0	0	**0**	0	1	**1**	0	0	**0**	**4**	
%	50	25	**75**	0	0	**0**	0	25	**25**	0	0	**0**		**100**

One (1) African female student enrolled at Undergraduate level in this CESM for the 2005 academic year at universities. Three (3) students enrolled at Masters level in Agronomy (Inst.Agrar Stream); 2 were African males and 1 was a White female.

4.3.4.9 Agricultural Extension (Inst. Agrar. Stream) at universities in 2005

Fourteen (14) students enrolled in this CESM for 2005 academic year at universities. Table 87 depicts a demographic breakdown of Agricultural Extension (Inst.Agrar.Stream) at the universities in 2005.

Table 87: Demographic breakdown of Agricultural Extension (Inst.Agrar.Stream) at universities in 2005

LEVEL	African			Coloured			White			Asians			TOTAL	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Honours	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**	
Masters	7	1	**8**	0	0	**0**	0	1	**1**	0	0	**0**	**9**	
TOTAL	10	3	**13**	0	0	**0**	0	1	**1**	0	0	**0**	**14**	
%	72	21	**93**	0	0	**0**	0	7	**7**	0	0	**0**		100

4.4 AET Graduates at Universities in 2005

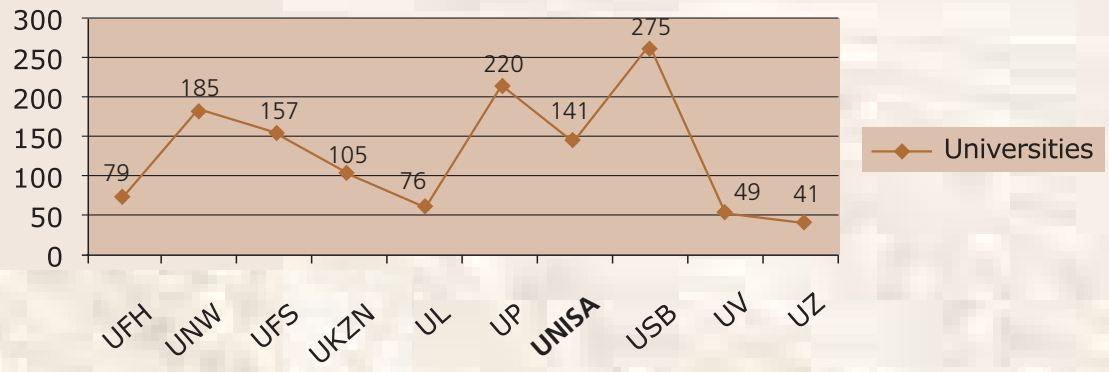
Table 88 indicates that University of Stellenbosch produced 20% of the total graduates during the 2005 academic year followed by the University of Pretoria with 16%. The University of North West, University of Free State and University of South Africa account for 14%, 12% and 11% of the total graduates at universities during the 2005 academic year. All other universities each qualified less than 10% of the graduate figure.

Table 88: AET graduate figures at universities in 2005

Name of the university	Number of AET graduates	Percentage (%)
Fort Hare University	**79**	**6**
University of North West	**185**	**14**
University of Free State	**157**	**12**
University of KwaZulu-Natal	**105**	**8**
University of Limpopo	**76**	**6**
University of Pretoria	**220**	**16**
University of South Africa	**141**	**11**
University of Stellenbosch	**275**	**20**
University of Venda	**49**	**4**
University of Zululand	**41**	**3**
Total	**1328**	**100**

Table 88 and figure 169 show that Universities of Stellenbosch, Pretoria, North West, Pretoria and Free State produced more graduates during the 2005 academic year. Graduates from the 4 universities constitute 63% of the total AET graduates at universities in 2005.

Figure 169: Graduates at universities



4.4.1 Demographic breakdown of AET graduates at universities in 2005

Table 89 illustrates a demographic breakdown of graduate figures in AET programmes during the 2005 academic year at universities.

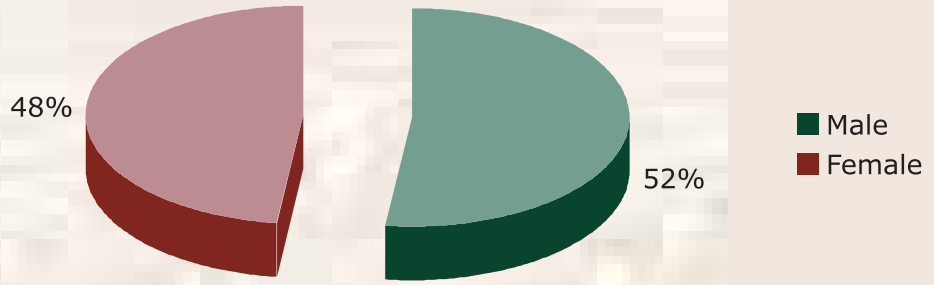
Table 89: Demographic breakdown of AET graduates at universities in 2005.

Name of the university	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Fort Hare University	47	32	**79**	0	0	**0**	0	0	**0**	0	0	**0**	**79**
North West University	81	104	**185**	0	0	**0**	0	0	**0**	0	0	**0**	**185**
University of Free State	44	16	**60**	2	0	**2**	74	20	**94**	1	0	**1**	**157**
University of KwaZulu-Natal	22	22	**44**	0	2	**2**	15	38	**53**	0	6	**6**	**105**
University of Limpopo	36	40	**76**	0	0	**0**	0	0	**0**	0	0	**0**	**76**
University of Pretoria	40	31	**71**	0	0	**0**	40	105	**145**	0	4	**4**	**220**
University of South Africa	45	42	**87**	2	0	**2**	21	23	**44**	5	3	**8**	**141**
University of Stellenbosch	16	15	**31**	3	6	**9**	141	94	**235**	0	0	**0**	**275**
University of Venda	27	22	**49**	0	0	**0**	0	0	**0**	0	0	**0**	**49**
University of Zululand	25	16	**41**	0	0	**0**	0	0	**0**	0	0	**0**	**41**
TOTAL	383	340	**723**	7	8	**15**	291	280	**571**	6	13	**19**	**1328**

African and White graduates constitute the most significant figures overall. African graduates account for 55% and White graduates constitute 43% of the total universities graduates during the 2005 academic year. Coloured and Asian graduates collectively constitute 2%. Male graduates dominated the universities graduates with 52% and female graduates constitute only 48% of the total graduates during the 2005 academic year at universities.

African male graduates dominated the male graduates with 56% and White male graduates comprised 42% of the total male graduates during the 2005 academic year. Coloured and Asian male graduates account for only 1% each.

Figure 170: Gender breakdown of AET graduates at universities



There were 687 male graduates and 641 female graduates produced by South African universities during the 2005 academic year. Figure 170 depicts that male graduates contribute a larger percentage of the total graduates at 52%, while female graduates constitute 48%.

Figure 171: Racial breakdown of AET graduates at universities

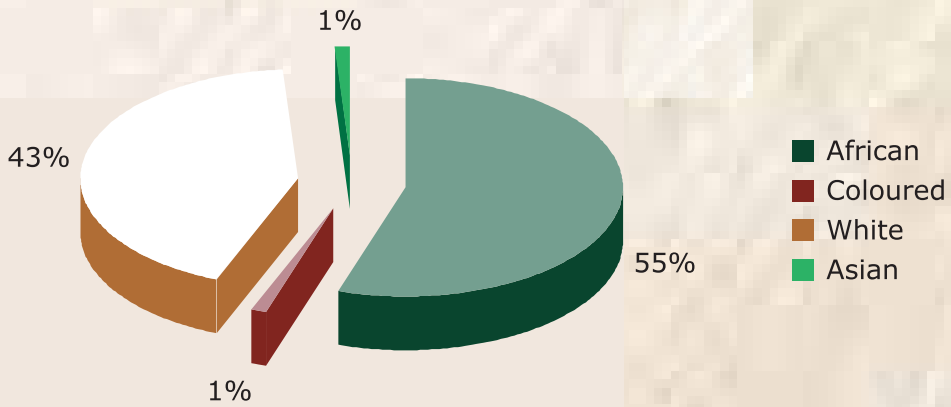


Figure 171 depicts that African graduates dominate with 55% and White graduates constitute 43%. Coloured and Asian graduates account for 1% each of the total AET graduates produced during the 2005 academic year.

Figure 172: Racial breakdown of female AET graduates at universities

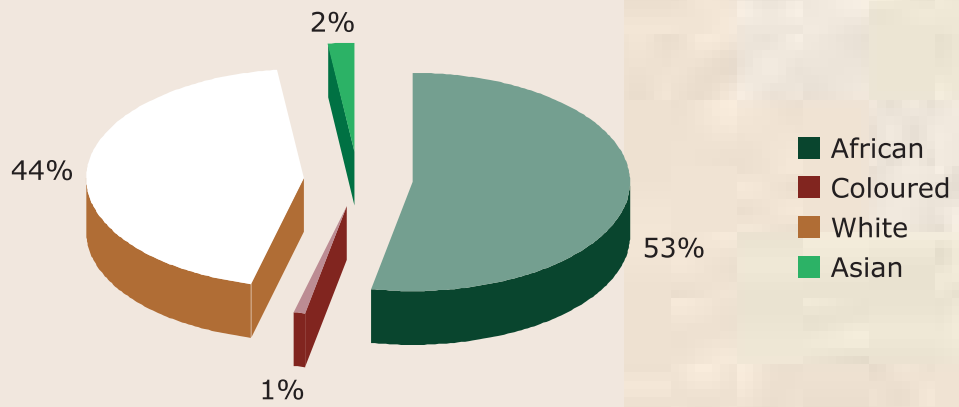


Figure 172 depicts that African female graduates dominate the female graduate population at 53%; White female graduates constitute 44% and Asian females account for 2%. Coloured constitute 1% of the total AET female graduates during the 2005 academic year.

Figure 173: Racial breakdown of male AET graduates at universities

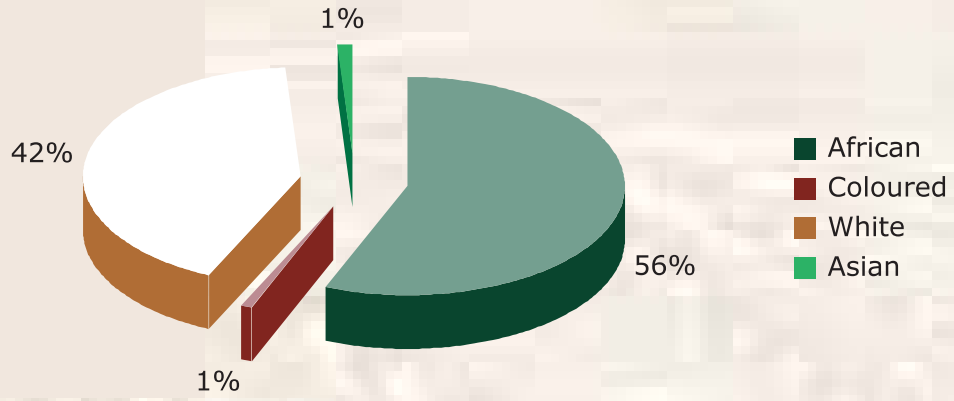


Figure 173 illustrates the breakdown according to race of AET male graduates produced by universities during the 2005 academic year. African males dominate with 56% followed by Whites with 42% of the overall male graduates. Coloured and Asian male graduates together constitute only 2% of the overall male graduates at universities during the 2005 academic year.

4.4.2 AET Graduates at universities by CESM in 2005

Table 90 presents AET graduates at universities by level of qualification per CESM and demographic breakdown of graduates by CESM.

Table 90: Agricultural graduates in universities in 2005 by CESM and academic level.

CESM	Undergraduate	Postgraduate Diploma	Honours	Masters	PhD	TOTAL	%
Agricultural Economics (Science Stream)	21	1	13	14	2	51	4
Agricultural Economics (Art Stream)	14	0	6	3	0	23	2
Agricultural Economics (BCom Stream	0	0	1	1	0	2	0
Agricultural Economics (AgriBusiness)	15	0	9	0	0	24	2
Agricultural Science (Art Stream)	32	0	3	12	1	48	5
Agricultural Science (Science Stream)	148	0	13	60	37	258	23
Agric. Extension (Inst. Agrar. Stream)	0	0	2	1	0	3	0
Agric. Extension	27	15	5	3	0	50	4
Agric. Food Technology	62	18	7	10	4	101	8
Animal Science	224	2	17	20	2	265	20
Horticulture	24	0	2	11	5	42	3
Plant Science	18	0	8	12	5	43	3
Plant Science (Inst.Agrar Stream)	1	0	2	2	0	5	0
Rural Development	0	0	8	0	0	8	1
Soil Science	6	0	2	2	2	12	1
Forestry	7	0	0	9	4	20	2
Renewable Natural Resources	14	0	0	2	0	16	1
Agric. Management	119	0	21	12	0	152	7
Other Agric. and Renewable Resources	0	0	0	18	0	18	1
Agric. Food Tech (Inst. Agrar. Stream)	1	0	0	0	0	1	0

Table 90: Agricultural graduates in universities in 2005 by CESM and academic level.							
CESM	**Undergraduate**	**Postgraduate Diploma**	**Honours**	**Masters**	**PhD**	**TOTAL**	**%**
Animal Sc (Insta. Agrar. Stream)	**4**	**0**	**0**	**1**	**0**	**5**	**0**
Horticulture (Inst. Agrar. Stream)	**0**	**0**	**0**	**1**	**0**	**1**	**0**
Land Rec (Land Use Inst. Agrar. Stream)	**0**	**0**	**1**	**0**	**0**	**1**	**0**
Agric Econ (Inst. Agrar. Stream)	**1**	**0**	**1**	**2**	**0**	**4**	**0**
Environmental Management	**20**	**0**	**20**	**1**	**0**	**41**	**3**
Land Reclamation (Land Use)	**8**	**0**	**1**	**0**	**0**	**9**	**1**
Agronomy	**13**	**0**	**2**	**1**	**0**	**16**	**1**
Agronomy (Inst. Agrar. Stream)	**1**	**0**	**0**	**0**	**0**	**1**	**0**
Wildlife	**18**	**0**	**8**	**13**	**0**	**39**	**3**
Consumer Science	**65**	**0**	**0**	**4**	**0**	**69**	**5**
TOTAL	**863**	**36**	**152**	**215**	**62**	**1328**	**100**
%	**65**	**3**	**11**	**16**	**5**		

Tabe 90 indicates that Agricultural Science (Science Stream), Animal Science and Agricultural Food Technology produced 23%, 20% and 8% respectively. Other CESM constitute less than 8% of the total AET graduates produced at universities during the 2005 academic year.

4.4.3 Breakdown of AET Graduates at universities by CESM in 2005

Graduates at Junior Degree Programmes by CESM at universities in 2005

Table 91 outlines the graduates for the Undergraduate stream at universities in 2005.

Table 91: Graduates in Junior Degree programmes by CESM at universities in 2005													
CESM Category (Undergraduate)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agricultural Economics (Science Stream)	9	6	**15**	0	0	**0**	6	0	**6**	0	0	**0**	**21**
Agricultural Economics (Art Stream)	8	6	**14**	0	0	**0**	0	0	**0**	0	0	**0**	**14**
Agricultural Eco. (AgriBusiness)	1	0	**1**	0	0	**0**	13	1	**14**	0	0	**0**	**15**
Agricultural Science (Art Stream)	20	8	**28**	0	0	**0**	4	0	**4**	0	0	**0**	**32**
Agricultural Science (Science Stream)	30	23	**53**	1	4	**5**	53	37	**90**	0	0	**0**	**148**
Agric. Extension	14	13	**27**	0	0	**0**	0	0	**0**	0	0	**0**	**27**
Agric. Food Technology	0	16	**16**	0	1	**1**	4	37	**41**	0	4	**4**	**62**
Animal Science	68	86	**154**	1	0	**1**	35	33	**68**	0	1	**1**	**224**
Horticulture	3	3	**6**	2	0	**2**	6	7	**13**	2	1	**3**	**24**
Plant Science	3	5	**8**	0	0	**0**	5	5	**10**	0	0	**0**	**18**
Soil Science	0	0	**0**	0	0	**0**	4	2	**6**	0	0	**0**	**6**
Forestry	1	1	**2**	0	0	**0**	4	1	**5**	0	0	**0**	**7**
Renewable Natural Resources	1	0	**1**	0	0	**0**	5	8	**13**	0	0	**0**	**14**

Table 91: Graduates in Junior Degree programmes by CESM at universities in 2005													
CESM Category (Undergraduate)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agric. Management	55	32	**87**	0	0	**0**	27	4	**31**	1	0	**1**	**119**
Environmental Management	0	20	**20**	0	0	**0**	0	0	**0**	0	0	**0**	**20**
Land Reclamation	8	0	**8**	0	0	**0**	0	0	**0**	0	0	**0**	**8**
Agronomy	3	2	**5**	0	0	**0**	5	3	**8**	0	0	**0**	**13**
Wildlife	1	1	**2**	0	0	**0**	8	8	**16**	0	0	**0**	**18**
Consumer Science	0	14	**14**	0	0	**0**	3	48	**51**	0	0	**0**	**65**
Plant Science (Inst.Agrar Stream)	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**
Agric. Food Tech (Inst. Agrar. Stream)	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Animal Science (Inst. Agrar Stream)	1	1	**2**	0	0	**0**	1	1	**2**	0	0	**0**	**4**
Agric. Economics (Inst. Agrar. Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agronomy (Inst.Agrar. Stream)	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	227	238	**465**	4	5	**9**	184	196	**380**	3	6	**9**	**863**

Table 91 shows that Animal Science, Agricultural Science (Science Stream), Agricultural Management and Consumer Science constitute 26%, 17%, 14% and 8% respectively. Other categories produced less than 8% each of the total AET graduates during the 2005 academic year. African graduates and White graduates constitute 54% and 44% of the total graduates at Junior Degree level respectively. Coloured and Asians collectively account for 2% of the graduates at junior degree level.

Postgraduate Diploma Graduates by CESM at universities in 2005

Table 92 outlines the Postgraduate Diploma graduates at universities in 2005

Table 92: Postgraduate Diploma graduates by CESM at universities in 2005													
CESM Category (Postgraduate Diploma)	**African**			**Coloured**			**White**			**Asian**			**Total**
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	
Agricultural Economics (Science Stream)	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agricultural Extension	7	8	**15**	0	0	**0**	0	0	**0**	0	0	**0**	**15**
Agricultural Food Technology	0	4	**4**	0	1	**1**	0	11	**11**	0	2	**2**	**18**
Animal Science	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**
TOTAL	7	13	**20**	0	1	**1**	2	11	**13**	0	2	**2**	**36**

Agricultural Food Technology constitutes 49% followed by Agricultural Extension with 42% of the total graduates at Postgraduate Diploma level. Animal Science and Agricultural Economics (Science Stream) collectively, produced 9% of the total graduates at Postgraduate Diploma level.

Honours Graduates by CESM at universities in 2005

Table 93 outlines the Honours graduates at universities in 2005 per CESM.

Table 93: Graduates in Honours degree by CESM at universities in 2005

CESM Category (Honours)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	4	4	**8**	0	0	**0**	4	1	**5**	0	0	**0**	**13**
Agricultural Economics (Art Stream)	4	2	**6**	0	0	**0**	0	0	**0**	0	0	**0**	**6**
Agricultural Economics (BCom Stream)	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Agricultural Eco. (AgriBusiness)	5	4	**9**	0	0	**0**	0	0	**0**	0	0	**0**	**9**
Agricultural Science (Art Stream)	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
Agricultural Science (Science Stream)	5	2	**7**	0	0	**0**	6	0	**6**	0	0	**0**	**13**
Agric. Extension	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**
Agric. Food Technology	1	1	**2**	0	0	**0**	1	4	**5**	0	0	**0**	**7**
Animal Science	4	9	**13**	0	0	**0**	3	1	**4**	0	0	**0**	**17**
Horticulture	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**
Plant Science	4	0	**4**	0	0	**0**	3	1	**4**	0	0	**0**	**8**
Soil Science	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Rural Development	4	4	**8**	0	0	**0**	0	0	**0**	0	0	**0**	**8**
Agric. Management	11	6	**17**	0	0	**0**	4	0	**4**	0	0	**0**	**21**
Environmental Management	4	10	**14**	0	0	**0**	1	1	**2**	2	2	**4**	**20**
Land Reclamation	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agronomy	1		**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**
Wildlife	2	0	**2**	0	0	**0**	2	4	**6**	0	0	**0**	**8**
Agricultural Extension (Inst.Agrar Stream)	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Plant Science (Inst.Agrar Stream)	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Land Reclamation (Inst.Agrar. Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agric. Economics (Inst. Agrar. Stream)	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Total	61	47	**108**	0	0	**0**	28	12	**40**	2	2	**4**	**152**

Table 93 depicts that Agricultural Management constitute 14% of the Honours graduates, followed by Environmental Management, Animal Science and Agricultural Economics with 13%, 11% and 9% respectively. Other CESM recorded the lowest number of graduates with less than 9% of the total number of Honours graduates.

African graduates dominate Honours graduates with 71% and White graduates account for 26%. Asian graduates constitute 3% of the total Honours graduates for the 2005 academic year. No Honours were awarded to Coloureds in AET programmes at universities during the 2005 academic year.

Masters Graduates by CESM at universities in 2005

Table 94 outlines the graduates for the Masters Programmes at universities during the 2005 academic year.

Table 94: Graduates in Masters degree by CESM at universities in 2005

CESM Category (Masters)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	7	4	**11**	0	0	**0**	3	0	**3**	0	0	**0**	**14**
Agricultural Economics (Art Stream)	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
Agricultural Economics (MCom Stream)	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**
Agricultural Science (Art Stream)	2	3	**5**	0	0	**0**	5	2	**7**	0	0	**0**	**12**
Agricultural Science (Science Stream)	18	7	**25**	1	0	**1**	15	17	**32**	1	1	**2**	**60**
Agric. Extension	1	2	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**
Agric. Food Technology	1	1	**2**	0	0	**0**	0	7	**7**	0	1	**1**	**10**
Animal Science	2	5	**7**	0	0	**0**	7	6	**13**	0	0	**0**	**20**
Horticulture	2	1	**3**	0	0	**0**	4	4	**8**	0	0	**0**	**11**
Plant Science	4	3	**7**	0	0	**0**	3	2	**5**	0	0	**0**	**12**
Soil Science	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Forestry	3	1	**4**	0	0	**0**	5	0	**5**	0	0	**0**	**9**
Renewable Natural Resources	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**
Agric. Management	6	3	**9**	0	0	**0**	1	2	**3**	0	0	**0**	**12**
Other Agric. and Renewable Resources	8	0	**8**	0	0	**0**	8	2	**10**	0	0	**0**	**18**
Environmental Management	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Agronomy	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Wildlife	1	0	**1**	0	0	**0**	7	5	**12**	0	0	**0**	**13**
Consumer Science	0	2	**2**	0	0	**0**	0	2	**2**	0	0	**0**	**4**
Agric. Extension (Inst. Agrar. Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Plant Science (Inst.Agrar Stream)	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Animal Science (Inst. Agrar Stream)	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Agric. Economics (Inst. Agrar. Stream)	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Horticulture (Inst.Agrar. Stream)	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Total	65	36	**101**	1	0	**1**	59	51	**110**	1	2	**3**	**215**

Table 94 indicates that Agricultural Science (Science Stream) dominated Masters graduates with 28%. Animal Science, Other Agricultural Renewable Resources and Agricultural Economics constitute 9%, 8% and 7% of the total Masters graduates for the 2005 academic year respectively.

White graduates constitute the highest number of Masters with 52%, followed by African graduates with 47% of the total number of Masters graduates during the 2005 academic year. Asians and Coloureds constitute a very low number of the total Masters graduates produced during the 2005 academic year.

PhD Graduates by CESM at universities in 2005

Table 95 depicts PhD graduates at universities during in 2005.

Table 95: Graduates in PhD degree by CESM at universities in 2005

CESM Category (PhD)	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Agricultural Economics (Science Stream)	0	0	**0**	1	0	**1**	0	0	**0**	0	1	**1**	**2**
Agricultural Science (Art Stream)	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**
Agricultural Science (Science Stream)	16	2	**18**	1	1	**2**	11	6	**17**	0	0	**0**	**37**
Agric. Food Technology	2	1	**3**	0	0	**0**	0	1	**1**	0	0	**0**	**4**
Animal Science	0	1	**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**
Horticulture	2	1	**3**	0	0	**0**	1	1	**2**	0	0	**0**	**5**
Plant Science	1	0	**1**	0	1	**1**	1	2	**3**	0	0	**0**	**5**
Soil Science	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**
Forestry	2	1	**3**	0	0	**0**	1	0	**1**	0	0	**0**	**4**
Total	23	6	**29**	2	2	**4**	16	12	**28**	0	1	**1**	**62**

The data in table 95 depicts that Agricultural Science (Science. Stream) dominate the PhD graduates with 80% of the PhD graduates for the 2005 academic year. All other CESM constitute just 20% of the total graduates at PhD level. African, White and Coloured graduates account for 47%, 45% and 6% of the total number of PhD graduates during the 2005 academic year respectively. Asian graduates constitute 2% of the total PhD graduates.

4.4.3.1 Agricultural Economics (Science Stream) graduates at universities in 2005

Eighty four (84) graduates qualified at universities during the 2005 academic year. Table 96 shows a demographic breakdown of Agricultural Economics graduates during the 2005 academic year by level of qualification.

Table 96: Demographic breakdown of Agricultural Economics (Science Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	9	6	**15**	0	0	**0**	6	0	**6**	0	0	**0**	**21**	42
Postgraduate diploma	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**	2
Honours	4	4	**8**	0	0	**0**	4	1	**5**	0	0	**0**	**13**	25
Masters	7	4	**11**	0	0	**0**	3	0	**3**	0	0	**0**	**14**	27
PhD	0	0	**0**	1	0	**1**	0	0	**0**	0	1	**1**	**2**	4
TOTAL	20	15	**35**	1	0	**1**	13	1	**14**	0	1	**1**	**51**	100

The Undergraduates in this CESM comprise 42% of Agricultural Economics (Science Stream) graduates followed by Masters and Honours graduates with 27% and 25% respectively. Postgraduate Diploma and PhD graduates together constitute 6% of the total graduates in Agricultural Economics (Science Stream) in the 2005 academic year.

Twenty one (21) graduates qualified at Undergraduate level at universities during the 2005 academic year. These graduates consist of 9 African males, 6 females and 6 White males. One (1) African female graduate qualified at Postgraduate Diploma during the 2005 academic year at universities.

Thirteen (13) graduates qualified at Honours level in this CESM. These were 4 were African males, 4 African females, 4 White males and 1 White female. At Masters level 14 graduates qualified, 7 were African males, 4 were African females and 3 were White males. Out of 2 graduates qualified at PhD level in Agricultural Economics (Science Stream) 1 was a Coloured male and 1 Asian female.

4.4.3.2 Agricultural Economics (Art Stream) Graduates at universities in 2005

Agricultural Economics (Art Stream) qualified 23 graduates during the 2005 academic year at universities. All the graduates who qualified in this CESM were African. Table 97 shows a demographic breakdown of Agricultural Economics (Art Stream) during the 2005 academic year by level of qualification.

Table 97: Demographic breakdown of Agricultural Economics (Art Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	8	6	**14**	0	0	**0**	0	0	**0**	0	0	**0**	**14**	61
Honours	4	2	**6**	0	0	**0**	0	0	**0**	0	0	**0**	**6**	26
Masters	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	13
TOTAL	14	9	**23**	0	0	**0**	0	0	**0**	0	0	**0**	**23**	100

The Undergraduate level account for 61% of the Agricultural Economics graduates followed by Honours with 26% and Masters with 13%. At Undergraduate level, 8 African males and 6 females qualified during the 2005 academic year. Four (4) African males and 2 African females qualified at Honours level. Two (2) African males and 1 African female qualified at Masters level during the 2005 academic year.

4.4.3.3 Agricultural Economics (AgriBusiness) graduates at universities in 2005

Twenty four (24) graduates qualified in Agricultural Economics (AgriBusiness) during the 2005 academic year in universities. Table 98 presents a demographic breakdown of Agricultural Economics (AgriBusiness) graduates during the 2005 academic year.

Table 98: Demographic breakdown of Agricultural Economics (AgriBusiness) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	1	0	**1**	0	0	**0**	13	1	**14**	0	0	**0**	**15**	62
Honours	5	4	**9**	0	0	**0**	0	0	**0**	0	0	**0**	**9**	38
TOTAL	6	4	**10**	0	0	**0**	13	1	**14**	0	0	**0**	**24**	100

The Undergraduate level constitutes 62% and Honours account for 38% of the total graduates in this CESM during the 2005 academic year at universities. Thirteen (13) of the Junior Degree graduates were White males, 1 White female and 1 African male. Out of 9 graduates qualified at Honours level, 5 were African males and 4 were African females.

4.4.3.4 Agricultural Science (Art Stream) graduates at universities in 2005

Forty eight (48) graduates qualified in this CESM at universities during the 2005 academic year. No Coloured and Asian graduates qualified in this CESM at universities during the 2005 academic year. Table 99 depicts a demographic breakdown of Agricultural Science (Art. Stream) graduates during the 2005 academic year by level of qualification.

Table 99: Demographic breakdown of Agricultural Science (Art. Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	20	8	**28**	0	0	**0**	4	0	**4**	0	0	**0**	**32**	67
Honours	2	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	6
Masters	2	3	**5**	0	0	**0**	5	2	**7**	0	0	**0**	**12**	25
PhD	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**	2
TOTAL	24	12	**36**	0	0	**0**	9	3	**12**	0	0	**0**	**48**	100

Junior Degree graduates account for 67% followed by Masters graduates with 25% and Honours graduates with 6% of the total graduates in this CESM. PhD graduates constitute the lowest number graduates with 2% of the total graduates in this CESM.

Thirty two (32) graduates qualified at Undergraduate level in Agricultural Science (Art Stream) during the 2005 academic year.

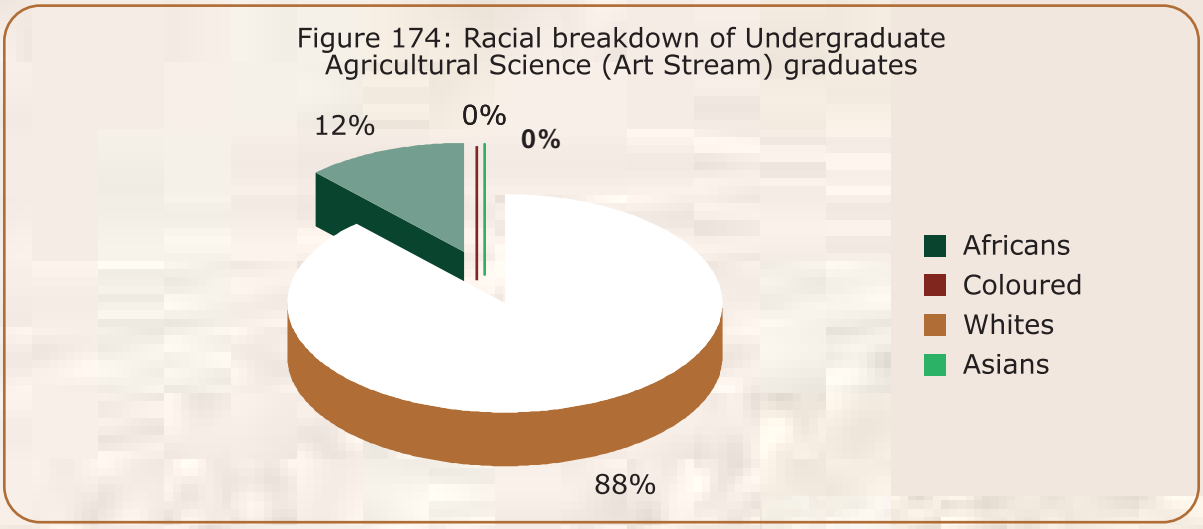


Figure 174 depicts that White graduates account for 88% and Africans constitute 12% only of the total graduates at Undergraduate level in Agricultural Science (Art Stream). Twenty (20) were African males, 8 were African females and 4 were White males. Three (3) graduates qualified at Honours level in this CESM in the 2005 academic year. Two (2) of these graduates were African males and 1 was an African female.

Twelve (12) graduates qualified at Masters level in this CESM in the 2005 academic year. Five (5) were White males and 3 were African females. African males account 42 graduates and White females constitute 2. One (1) White female PhD graduate qualified in this CESM at Undergraduate level.

4.4.3.5 Agricultural Science (Science Stream) graduates at universities in 2005

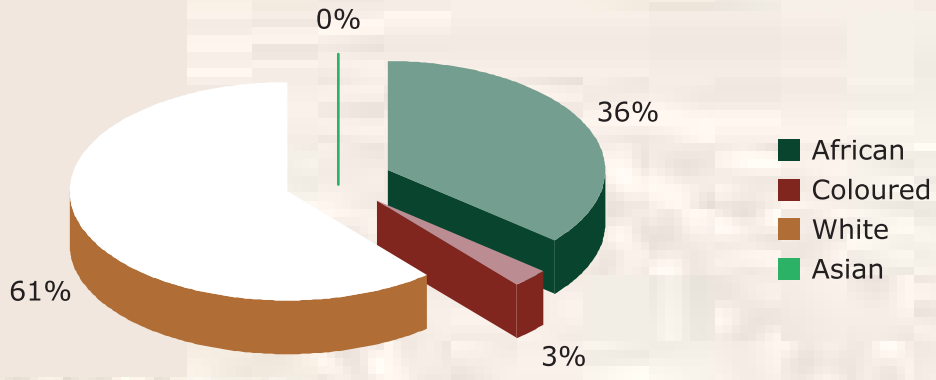
Two hundred and forty nine (249) graduates in this CESM qualified at universities during the 2005 academic year. Table 100 presents a demographic breakdown of Agricultural Science (Science Stream) graduates during the 2005 academic year by level of qualification.

Table 100: Demographic breakdown of Agricultural Science (Science Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	30	23	**53**	1	4	**5**	53	37	**90**	0	0	**0**	**148**	58
Honours	5	2	**7**	0	0	**6**	0	6	**0**	0	0	**0**	**13**	5
Masters	18	7	**25**	1	0	**1**	15	17	**32**	1	1	**2**	**60**	23
PhD	16	2	**18**	1	1	**2**	11	6	**17**	0	0	**0**	**37**	14
TOTAL	69	34	**103**	3	5	**8**	79	66	**145**	1	1	**2**	**258**	100

The Undergraduate level in this CESM produced 58% of the total graduates in this CESM followed by Masters with 23% and PhD with 14%. Honours graduates constitute the least graduates with 5% of the total enrolments in this CESM in the 2005 academic year. One hundred and forty eight (148) graduates qualified at Undergraduate level in this CESM in the 2005 academic year.

Figure 175: Racial breakdown of Undergraduate in Agricultural Science (Science Stream) graduates



A figure 175 shows that Whites dominated graduates at Undergraduate Degree level in this CESM with 61% followed by Africans and Coloureds with 36% and 3% respectively. No Asian graduates qualified in this CESM at Undergraduate level during the 2005 academic year.

Figure 176: Gender breakdown of Undergraduate in Agricultural Science (Science Stream) graduates

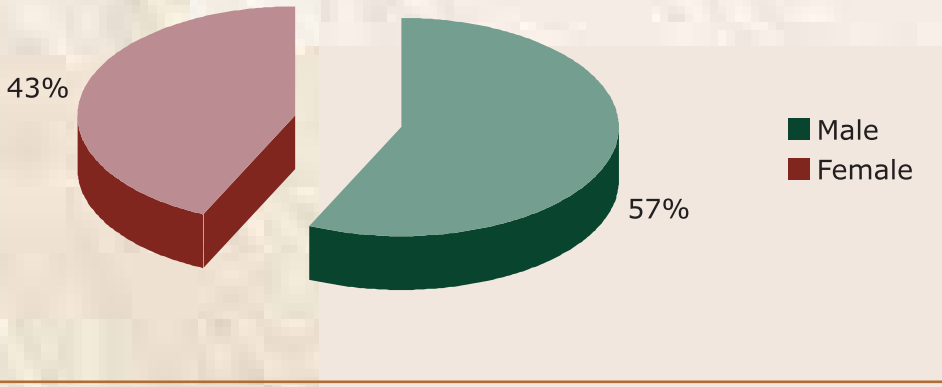


Figure 176 depicts that male graduates constitute 57% and female graduates account for 43% of graduates in this CESM at undergraduate level. White and African males constitute 63% and 36% respectively of the male graduates in this CESM at undergraduate level. Coloured males constitute 1% of the male graduates at Undergraduate in this CESM during the 2005 academic year.

Thirteen (13) graduates were qualified at Honours level in this CESM in 2005 at universities. Six (6) graduates were White males; 5 were African males and 2 were African females. Sixty (60) graduates qualified at Masters level in this CESM for the 2005 academic year at universities.

Figure 177: Racial breakdown of Masters in Agricultural Science (Science Stream) graduates

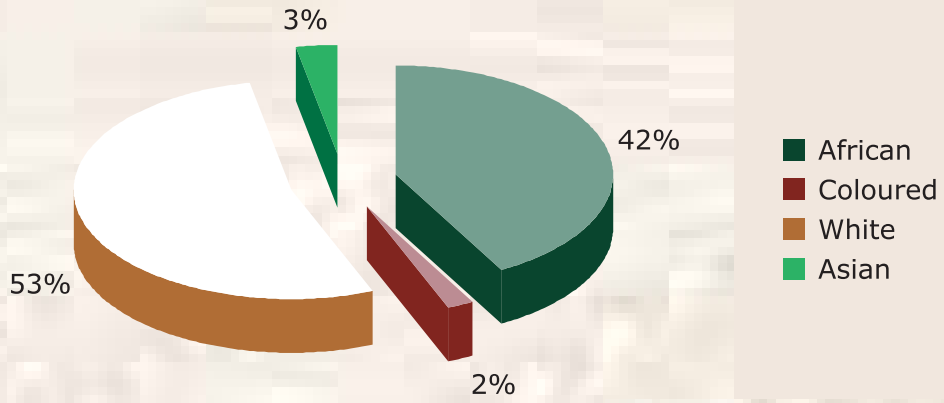


Figure 177 shows that Whites dominated with 53%, followed by Africans with 42% of the Masters graduates. Asians and Coloureds together constitute 5% of the Masters graduates in Agricultural Science (Science Stream).

Figure 178: Gender breakdown of Masters in Agriculture Science (Science Stream) graduates

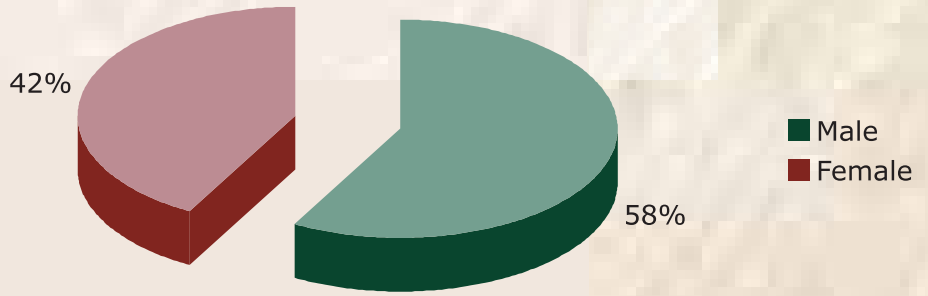


Figure 178 shows that males account for 58% and females constitute 42% of the graduates in this CESM at universities. African males and White males account for 51% and 43% of the male graduates in Agricultural Science (Science Stream), during the 2005 academic year. Coloured and Asian male graduates account for 3% each of the male graduates in this CESM at Masters level. Thirty seven (37) graduates qualified at PhD level in this CESM during the 2005 academic year.

Figure 179: Racial breakdown of PhD in Agriculture Science (Science Stream) graduates

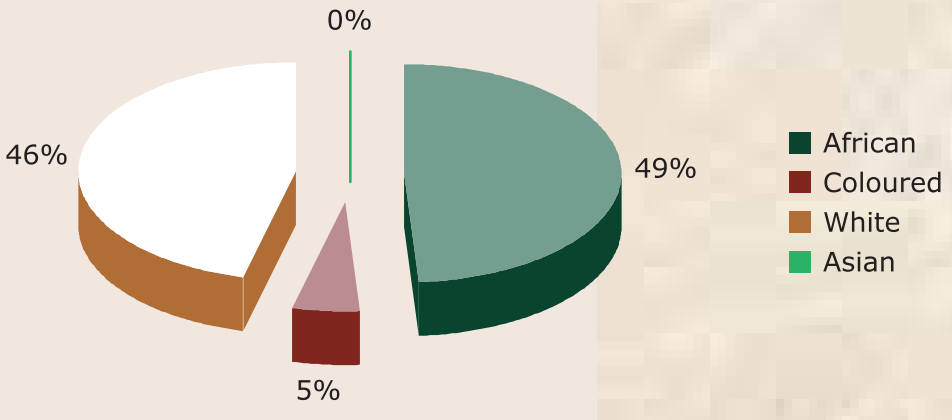
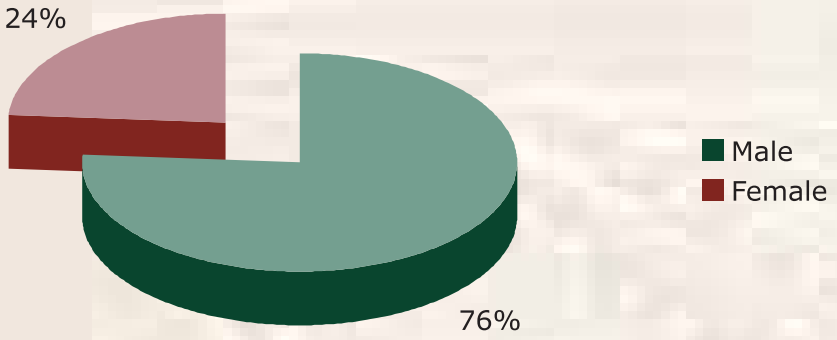


Figure 179 shows that African and White graduates who qualified in this CESM at PhD level, constitute 49% and 46% respectively. Coloureds account for 5% of the PhD graduates in Agricultural Science (Science Stream) and no Asian graduates were produced in this CESM at PhD level.

Figure 180: Gender breakdown of PhD in Agricultural Science (Science Stream) graduates



Male graduates dominated with 76% and females constitute only 24% of the PhD graduates in this CESM in 2005. African and White males account for 57% and 39% of the male graduates at PhD in this CESM respectively. Coloureds constitute only 4% of the male graduates at PhD level in this CESM.

4.4.3.6 Agricultural Extension graduates at universities in 2005

Fifty (50) graduates were awarded with Agricultural Extension qualifications at universities during the 2005 academic year. The graduates that qualified in Agricultural Extension were all Africans. Table 101 depicts a demographic breakdown of Agricultural Extension graduates during the 2005 academic year by level of qualification.

Table 101: Demographic breakdown of Agricultural Extension graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	14	13	**27**	0	0	**0**	0	0	**0**	0	0	**0**	**27**	54
Postgraduate diploma	7	8	**15**	0	0	**0**	0	0	**0**	0	0	**0**	**15**	30
Honours	3	2	**5**	0	0	**0**	0	0	**0**	0	0	**0**	**5**	10
Masters	1	2	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**	6
TOTAL	25	25	**50**	0	0	**0**	0	0	**0**	0	0	**0**	**50**	100

Fifty four percent (54%) of graduates in this CESM were trained at Undergraduate level followed by Postgraduate level with 30% and Honours with 10%. Masters graduates were the lowest in this CESM with 6% of the total graduates during the 2005 academic year.

Twenty seven (27) graduates qualified at Undergraduate level in this CESM during the 2005 academic year, 14 were African males and 13 were African females. Out of 15 graduates qualified at Postgraduate Diploma, 8 were African females and 7 were males. At Honours level, 3 African males and 2 females were trained at universities. Out of 3 graduates qualified at Masters level, 2 were African females and 1 was an African male.

4.4.3.7 Agricultural Food Technology Graduates at universities in 2005

One hundred and one (101) graduates qualified in this CESM during the 2005 academic year at universities. Table 102 depicts a demographic breakdown of Agricultural Food Technology graduates during the 2005 academic year academic year by level of qualification.

Table 102: Demographic breakdown of Agricultural Food Technology graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	0	16	**16**	0	1	**1**	4	37	**41**	0	4	**4**	**62**	61
Postgraduate diploma	0	4	**4**	0	1	**1**	0	11	**11**	0	2	**2**	**18**	18
Honours	1	1	**2**	0	0	**0**	1	4	**5**	0	0	**0**	**7**	7
Masters	1	1	**2**	0	0	**0**	0	7	**7**	0	1	**1**	**10**	10
PhD	2	1	**3**	0	0	**0**	0	1	**1**	0	0	**0**	**4**	4
TOTAL	4	23	**27**	0	2	**2**	5	60	**65**	0	7	**7**	**101**	100

Table 87 shows that 61% of the graduates in this CESM qualified at Undergraduate level followed by Postgraduate Diploma graduates with 18%. Masters, Honours and PhD produced the least graduates with 10%, 7% and 4% of the graduates in this CESM respectively. Sixty two (62) graduates qualified at Undergraduate level in Agricultural Food Technology in 2005.

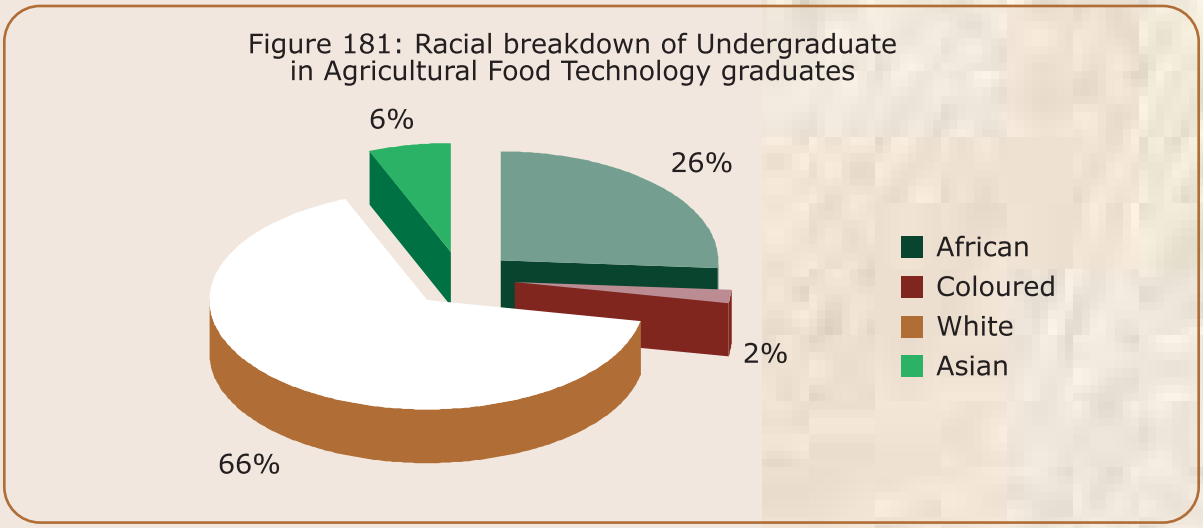


Figure 181 shows that White students dominated the Agricultural Food Technology at Undergraduate level with 66% followed by Africans with 26% and Asians with 6%. Coloured graduates constitute only 2% of the graduates at Junior Degree level in this CESM in 2005. Females largely dominated the junior graduates in this CESM; 58 female graduates qualified and 4 males. Eighteen (18) graduates qualified at Postgraduate Diploma in this CESM in the 2005 academic year.

Figure 182: Racial breakdown of Postgraduate Diploma in Agricultural Food Technology graduates

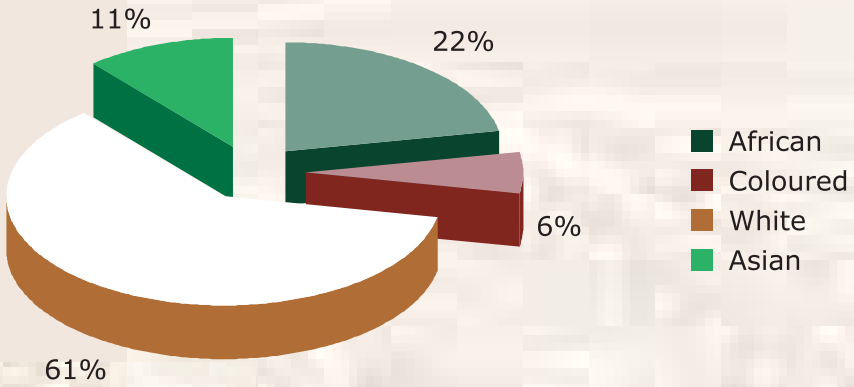


Figure 182 shows that Whites dominated with 61% followed by Africans and Asians with 22% and 11% of the total graduates in this CESM at Postgraduate Diploma level. Coloured graduates who qualified at Postgraduate Diploma in Agricultural Food Technology constitute 6%. All the graduates who qualified in this CESM at Postgraduate Diploma were females.

Out of 7 graduates who qualified at Honours level in this CESM 4 were White females, 1 African male, 1 African female and 1 White male. Ten (10) graduates qualified at Masters level, 7 were White females, 1 was an African female, 1 an African male and 1 Asian female. Two (2) African males, 1 African female and 1 White female qualified at PhD level in Agricultural Food Technology.

4.4.3.8 Animal Science graduates at universities in 2005

Two hundred and sixty five (265) graduates qualified in Animal Science at universities during the 2005 academic year. Table 103 depicts a demographic breakdown of Animal Science graduates during the 2005 academic year academic year by level of qualification.

Table 103: Demographic breakdown of Animal Science graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	68	86	**154**	1	0	**1**	35	33	**68**	0	1	**1**	**224**	84
Post graduates diploma	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**	1
Honours	4	9	**13**	0	0	**0**	3	1	**4**	0	0	**0**	**17**	6
Masters	2	5	**7**	0	0	**0**	7	6	**13**	0	0	**0**	**20**	8
PhD	0	1	**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**	1
TOTAL	74	101	**175**	1	0	**1**	48	40	**88**	0	1	**1**	**265**	100

Undergraduate level graduates amount to 84% followed by Masters with 8% and Honours with 6% of the total graduates in this CESM. Postgraduate Diploma and PhD constitute 1% each, of the total graduates in Animal Science.

Two hundred and twenty four (224) graduates qualified at Undergraduate level in this CESM.

Figure 183: Racial breakdown of Undergraduate in Animal Science graduates

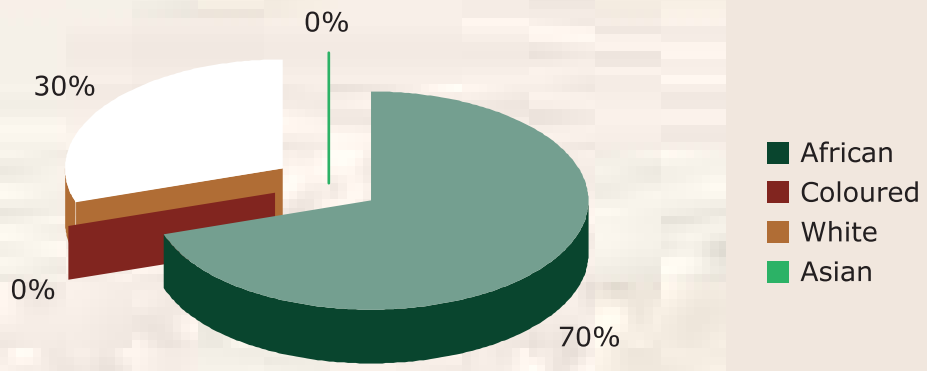


Figure 183 depicts that African graduates constitute 70% and White females account for 30% of the Undergraduate level in Animal Science. Coloured and Asian graduates were very insignificant.

Figure 184: Gender breakdown of Undergraduate in Animal Science graduates

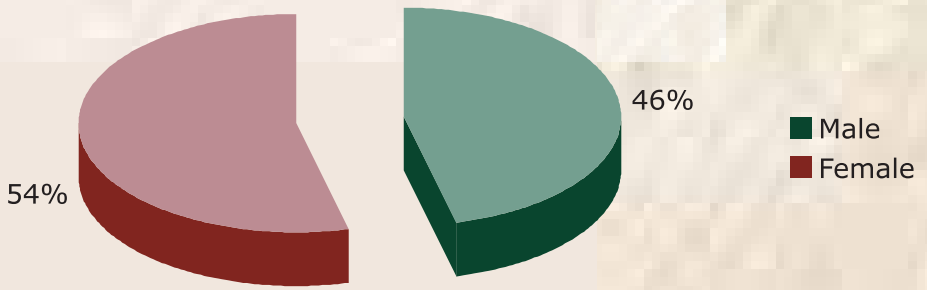


Figure 184 shows that females dominated the graduates at Junior Degree level in Animal Science with 54% and males constitute only 46%. African females and White females constitute 71% and 28% of the total graduates in Animal Science at Undergraduate level in 2005. Asian females were very insignificant and Coloured females were non-existent.

Two (2) White males qualified at Postgraduate Diploma in this CESM during the 2005 academic year. Out of 17 graduates qualified at Honours level, 9 were African females, 4 were African males, 3 were White males and was a White female.

Twenty (20) graduates qualified at Masters level of which 7 were White males, 6 were White females, 5 were African females and 1 was an African male. One (1) African female graduate and 1 White male graduate qualified in this CESM at PhD level.

4.4.3.9 Horticulture Graduates at universities in 2005

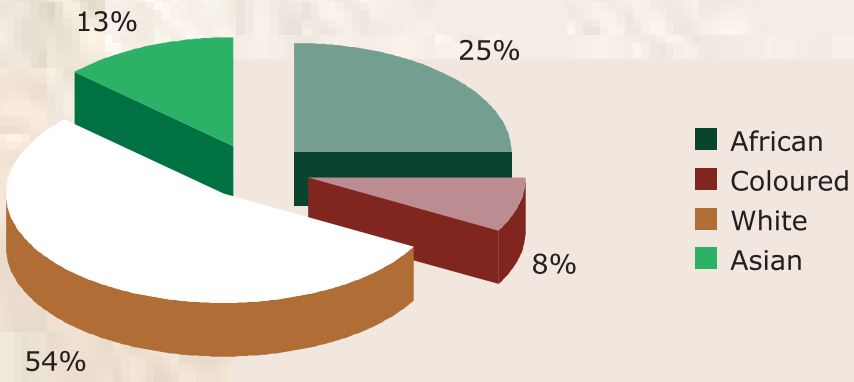
Forty two (42) graduates qualified in Horticulture during the 2005 academic year. Table 104 presents a demographic breakdown of Horticulture graduates during the 2005 academic year.

Table 104: Demographic breakdown of Horticulture graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	3	3	**6**	2	0	**2**	6	7	**13**	2	1	**3**	**24**	57
Honours	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**	5
Masters	2	1	**3**	0	0	**0**	4	4	**8**	0	0	**0**	**11**	26
PhD	2	1	**3**	0	0	**0**	1	1	**2**	0	0	**0**	**5**	12
TOTAL	7	5	**12**	2	0	**2**	13	12	**25**	2	1	**3**	**42**	100

Fifty seven percent (57%) of the Horticulture graduates were produced at Undergraduate level followed by Masters and PhD with 26% and 12% respectively. Honours constitute 5% of the Horticulture graduates during the 2005 academic year. Twenty four (24) graduates qualified in Horticulture during the 2005 academic year at universities.

Figure 185: Racial breakdown of Undergraduate Horticulture graduates



Whites dominated the Horticulture Junior graduates with 54% followed by Africans and Asians with 25% and 13%. Coloured graduates constitute 8% of the Undergraduate level in Horticulture during the 2005 academic year.

Figure 186: Gender breakdown Undergraduate Horticulture graduates

Figure 186 shows that males constitute 56% and females account for 44% of the Junior Degree graduates in Horticulture during the 2005 academic year. White males constitute 47% followed by Africans with 23% of the Junior Degree male graduates in Horticulture during the 2005 academic year. Coloureds and Asians account for 15% each of the male graduates in Horticulture at Undergraduate level.

4.4.3.10 Plant Science graduates at universities in 2005

Forty (43) graduates qualified at universities in this CESM during the 2005 academic year. Table 105 shows a demographic breakdown of Plant Science graduates during the 2005 academic year academic year level of qualification.

Table 105: Demographic breakdown of Plant Science graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	3	5	**8**	0	0	**0**	5	5	**10**	0	0	**0**	**18**	41
Honours	4	0	**4**	0	0	**0**	3	1	**4**	0	0	**0**	**8**	19
Masters	4	3	**7**	0	0	**0**	3	2	**5**	0	0	**0**	**12**	28
PhD	1	0	**1**	0	1	**1**	1	2	**3**	0	0	**0**	**5**	12
TOTAL	12	8	**20**	0	1	**1**	12	10	**22**	0	0	**0**	**43**	100

The Undergraduate level and Masters level constitute 41% and 28% of graduates in this CESM. The Honours and PhD level account for 19% and 12% of this CESM graduates.

Out of 18 graduates who qualified at Undergraduate level in this CESM, 5 were African females, 5 were White females, 5 were White males and 3 were African males. No other graduates qualified in this CESM at Undergraduate level from other racial groups. Four (4) African male graduates, 3 White males and 1 White female qualified at Honours level in this CESM. Out of 12 graduates qualified at Masters level in Plant Science 4 were African males, 3 were African females, 3 were White males and 2 were White females. Five (5) graduates qualified at PhD level in Plant Science, 2 were White females, 1 African male, 1 Coloured female and 1 White male.

4.4.3.11 Soil Science graduates at universities in 2005

Twelve (12) graduates qualified in this CESM during the 2005 academic year at universities. Table 106 presents a demographic breakdown of Soil Science graduates during the 2005 academic year by level of qualification.

Table 106: Demographic breakdown of Soil Science graduates at universities

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	0	0	**0**	0	0	**0**	4	2	**6**	0	0	**0**	**6**	49
Honours	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**	17
Masters	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**	17
PhD	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**	17
TOTAL	4	0	**4**	0	0	**0**	5	3	**8**	0	0	**0**	**12**	100

49% of graduates in this CESM qualified at undergraduate level followed by Honours, Masters and PhD graduates with 17% each of the Soil Science graduates. Out of 6 graduates who qualified at Undergraduate level, 4 were White males and 2 were White females. Two (2) African males graduated at Honours level in Soil Science at universities during the 2005 academic year. At Masters level in this CESM who also qualified, 2 African males graduated during the 2005 academic year at universities. At PhD Level 2 Whites i.e. 1 female and 1 male graduated in the 2005 academic year.

4.4.3.12 Forestry graduates at universities in 2005

Twenty (20) graduates qualified at universities in this CESM during the 2005 academic year. Table 107 shows a demographic breakdown of Forestry graduates during the 2005 academic year by level of qualification.

Table 107: Demographic breakdown of Forestry graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	1	1	**2**	0	0	**0**	4	1	**5**	0	0	**0**	**7**	35
Masters	3	1	**4**	0	0	**0**	5	0	**5**	0	0	**0**	**9**	45
PhD	2	1	**3**	0	0	**0**	1	0	**1**	0	0	**0**	**4**	20
TOTAL	6	3	**9**	0	0	**0**	10	1	**11**	0	0	**0**	**20**	100

The majority of the graduates in this CESM qualified at Junior Degree and Masters level with 45% and 35% of the Forestry graduates respectively. The PhD graduates constitute 20% of the Forestry graduates at universities during the 2005 academic year.

Seven (7) graduates qualified at Undergraduates level in this CESM, 4 were White males, 1 was an Africa 9 graduates qualified at Masters level in Forestry, 5 were White males, 3 were African males and 1 was an African female. At PhD level, 2 African males, 1 African male and 1 White male graduated during the 2005 academic year in Forestry.

4.4.3.13 Renewable Natural Resources graduates at universities in 2005

Sixteen (16) graduates qualified in this CESM at universities during the 2005 academic year. Table 108 shows a demographic breakdown of Renewable Natural Resources at universities in 2005.

Table 108: Demographic breakdown of Renewable Natural Resources graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	1	0	**1**	0	0	**0**	5	8	**13**	0	0	**0**	**14**	87
Masters	1	0	**1**	0	0	**0**	0	1	**1**	0	0	**0**	**2**	13
TOTAL	2	0	**2**	0	0	**0**	5	9	**14**	0	0	**0**	**16**	100

The Junior Degree graduates who qualified in this CESM constitute 87% and Masters account for 13% only. Out of 14 graduates who qualified at Undergraduate level, 8 were White females, 5 were White males and 1 was an African male. One (1) African male and 1 White female qualified at Masters level in this CESM.

4.4.3.14 Agricultural Management Graduates at universities in 2005

One hundred and fifty two (152) graduates qualified in this CESM during the 2005 academic year. Table 109 presents a demographic breakdown of Agricultural Management graduates during the 2005 academic year by level of qualification.

Table 109: Demographic breakdown of Agricultural Management graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	55	32	**87**	0	0	**0**	27	4	**31**	1	0	**1**	**119**	78
Honours	11	6	**17**	0	0	**0**	4	0	**4**	0	0	**0**	**21**	14
Masters	6	3	**9**	0	0	**0**	1	2	**3**	0	0	**0**	**12**	8
TOTAL	72	41	**113**	0	0	**0**	32	6	**38**	1	0	**1**	**152**	100

Graduates at junior degree constitute 78% of graduates in the CESM, while Honours graduates constitute 14% of graduates, and Masters graduates constitute 8% of graduates in the CESM.

One hundred and nineteen (119) graduates qualified at undergraduate level, in Agricultural Management in 2005.

Figure 187: Racial breakdown of Undergraduate in Agricultural Management graduates

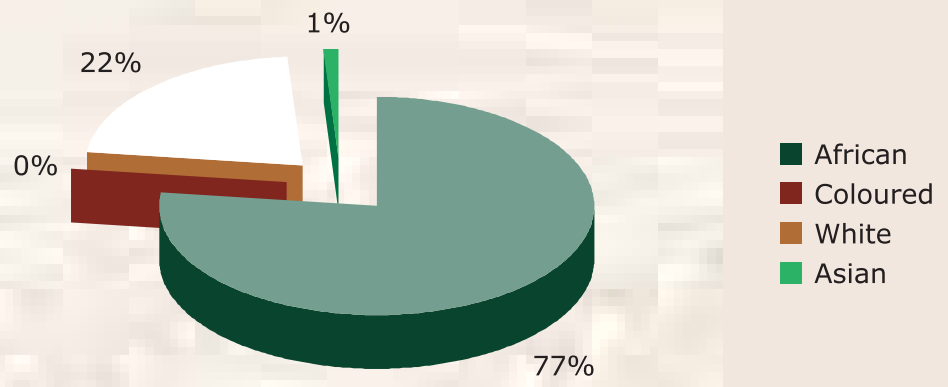
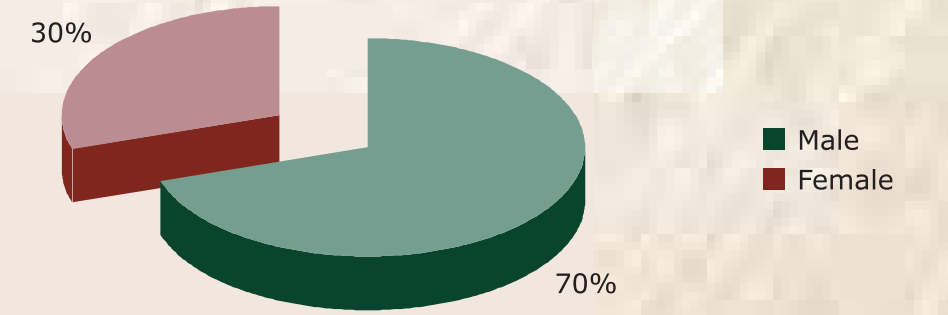


Figure 187 shows that African graduates who qualified at Undergraduate level in this CESM account for 73%, followed by White graduates with 26% and Asians with 1%. No Coloured graduates qualified in this CESM at Undergraduate level.

Figure 188: Gender breakdown of Undergraduate in Agricultural Management graduates



Male graduates in this CESM at undergraduate level account for 70% and females constitute only 30%. African and White males account for 66% and 33% of the male graduates in this CESM at Undergraduate level respectively.

Out of 21 graduates who qualified at Honours level in the CESM in 2005, 11 were African males, 6 were African females and 4 were White males. At Masters level, 12 graduates who qualified, of which 6 were African males, 3 were African females, 2 were White females and 1 was a White male.

4.4.3.15 Environmental Management graduates at universities in 2005

Forty one (41) graduates qualified in this CESM at undergraduate level at universities in 2005 academic year. Table 110 presents a demographic breakdown of Environmental Management graduates at universities in 2005.

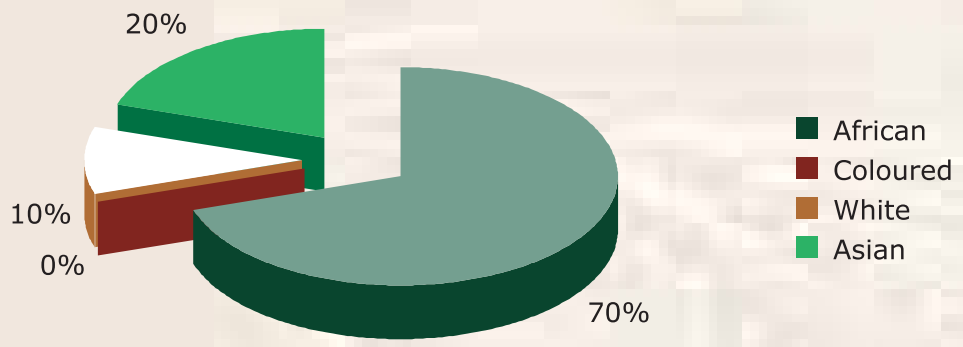
Table 110: Demographic breakdown of Environmental Management graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	0	20	**20**	0	0	**0**	0	0	**0**	0	0	**0**	**20**	49
Honours	4	10	**14**	0	0	**0**	1	1	**2**	2	2	**4**	**20**	49
Masters	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**	2
TOTAL	4	30	**34**	0	0	**0**	2	1	**3**	2	2	**4**	**41**	100

Graduates at Junior degree and Honours level account for 49% each of the total graduates in this CESM. Masters graduates account for 2% only. Twenty (20) graduates qualified at Undergraduate and all were African females.

Twenty (20) graduates qualified at Honours level in this CESM in the 2005 academic year at universities.

Figure 189: Racial breakdown of Honours in Environmental Management graduates



Africans account for 70% of the graduates in this CESM followed by Asians and Whites with 20% and 10% of the Honours graduates in this CESM respectively. Coloureds were non-existent in this CESM. One (1) White male and 1 female also qualified at Honours level in this CESM. One (1) White male graduate qualified at Masters level in this CESM at universities.

4.4.3.16 Land Reclamation graduates at universities in 2005

Nine (9) graduates qualified in this CESM at universities during the 2005 academic year. Table 111 presents a demographic breakdown of Land Reclamation graduates at universities in 2005.

Table 111: Demographic breakdown of Land Reclamation graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	8	0	**8**	0	0	**0**	0	0	**0**	0	0	**0**	**8**
Honours	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	9	0	**9**	0	0	**0**	0	0	**0**	0	0	**0**	**9**

Eight (8) African males graduated at Junior Degree level in this CESM at universities in 2005. One (1) African male graduated at Honours level in Land Reclamation in 2005 at universities.

4.4.3.17 Agronomy graduates at universities in 2005

Sixteen (16) graduates qualified in Agronomy at universities during the 2005 academic year. Table 112 depicts a demographic breakdown of Agronomy graduates at universities during the 2005 academic year.

Table 112: Demographic breakdown of Agronomy graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	3	2	**5**	0	0	**0**	5	3	**8**	0	0	**0**	**13**
Honours	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	**2**
Masters	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	5	2	**7**	0	0	**0**	6	3	**9**	0	0	**0**	**16**

Out of 13 graduates who qualified at Undergraduate level in Agronomy, Whites account for 62% and Africans constitute 38% only. No Coloured and Asian graduates were awarded with Junior degree in this CESM during the 2005 academic year. Males dominate with 62% and females account for 38% of the Junior degree graduates.

4.4.3.18 Wildlife graduates at universities in 2005

Thirty nine (39) graduates qualified in this CESM during the 2005 academic year at universities. Table 113 presents a demographic breakdown of Wildlife graduates in 2005 at universities.

Table 113: Demographic breakdown of Wildlife graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduate	1	1	**2**	0	0	**0**	8	8	**16**	0	0	**0**	**18**	46
Honours	2	0	**2**	0	0	**0**	2	4	**6**	0	0	**0**	**8**	21
Masters	1	0	**1**	0	0	**0**	7	5	**12**	0	0	**0**	**13**	33
TOTAL	4	1	**5**	0	0	**0**	17	17	**34**	0	0	**0**	**39**	100

The Undergraduate level dominated this CESM with 46% followed by Honours with 33% and Honours constitute only 21% of the total graduates in Wildlife. Whites account for 89% and Africans constitute 11% of the Junior degree graduates in this CESM. Four (4) White females, 2 White males and 2 African males graduated at Honours level in this CESM. Out of 13 graduates who qualified at Masters level in this CESM, Whites account for 92% Africans constitute 8% of the Masters level graduates.

4.4.3.19 Consumer Science graduates at universities in 2005

Sixty nine (69) graduates qualified in this CESM during the 2005 academic year. Table 114 presents a demographic breakdown of Consumer Science graduates during the 2005 academic year by level of CESM.

Table 114: Demographic breakdown of Consumer Science graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total	%
	M	F	T	M	F	T	M	F	T	M	F	T		
Undergraduates	0	14	**14**	0	0	**0**	3	48	**51**	0	0	**0**	**65**	94
Masters	0	2	**2**	0	0	**0**	0	2	**2**	0	0	**0**	**4**	6
TOTAL	0	16	**16**	0	0	**0**	3	50	**53**	0	0	**0**	**69**	100

The Junior Degree graduates in this CESM dominated with 94% and Masters only constitute 6% of the total graduates in this CESM during the 2005 academic year. White females dominated the Undergraduate level at 48; African females account for 14 graduates and White males constitute 3. Out of 4 Masters graduates produced at Masters level, 2 were African females and 2 were White females.

4.4.3.20 Plant Science (Inst.Agrar Stream) graduates at universities in 2005

Only (5) graduates were qualified in this CESM during the 2005 academic year at universities. Table 115 presents a demographic breakdown of Plant Science (Inst.Agrar Stream) graduates at universities during the 2005 academic year.

Table 115: Demographic breakdown of Plant Science (Inst.Agrar Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**
Honours	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Masters	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
TOTAL	3	1	**4**	0	0	**0**	0	1	**1**	0	0	**0**	**5**

One (1) White female graduated at Junior Degree level in this CESM and 2 African males graduated in this CESM at Honours level during the 2005 academic year. One (1) African male and 1 African female graduated in this CESM at Masters level in the 2005 academic year.

4.4.3.21 Agricultural Food Technology (Inst.Agrar. Stream) graduates at universities in 2005

One (1) White male graduated in Agricultural Food Technology at Undergraduate level during the 2005 academic year at universities.

4.4.3.22 Animal Science (Inst.Agrar. Stream) graduates at universities in 2005

Five (5) graduates qualified in this CESM at universities during the 2005 academic year. Table 116 presents a demographic breakdown of Animal Science (Inst.Agrar. Stream) graduates during the 2005 academic year by level of qualification.

Table 116: Demographic breakdown of Animal Science (Inst.Agrar. Stream) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduate	1	1	**2**	0	0	0	1	1	**2**	0	0	**0**	**4**
Masters	1	0	**1**	0	0	0	0	0	**0**	0	0	**0**	**1**
TOTAL	2	1	**3**	0	0	**0**	2	0	**2**	0	0	**0**	**5**

Four (4) graduates in Animal Science (Inst.Agrar Stream) were produced at Junior Degree level and graduate figures were shared equally among Whites and Africans. Only 1 person graduated at Masters level in the CESM.

4.4.3.23 Agricultural Economics (Inst.Agrar. Stream) graduates at universities in 2005

Four (4) graduates qualified in this CESM in the 2005 academic year at universities. Table 117 depicts a demographic breakdown of Agricultural Economics (Inst.Agrar. Stream) graduates during the 2005 academic year by level of qualification.

Table 117: Demographic breakdown of Agricultural Economics (Inst.Agrar Stream) graduates by level of qualification

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Undergraduates	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Honours	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
Masters	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
TOTAL	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	**4**

One (1) African male graduated at Junior Degree level in this CESM during the 2005 academic year. At Honours level, 1 African female graduated and 1 African male and 1 African female graduated at Masters level.

4.4.3.24 Agronomy (Inst. Agrar.) Graduates at Universities in 2005

One (1) African female graduated in this CESM at Undergraduate level in the 2005 academic year at universities.

4.4.3.25 Agricultural Economics (BCom Stream) graduates at universities in 2005

Two (2) graduates qualified in this CESM at universities during the 2005 academic year. Table 118 shows a demographic breakdown of Agricultural Economics (BCom Stream) graduates during the 2005 academic year by level of qualification.

Table 118: Demographic breakdown of Agricultural Economics (BCom Steam) graduates at universities in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Honours	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
Masters	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**	**1**
TOTAL	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**

As indicated in table 118, only 2 Whites graduated in Agricultural Economics (B Com Stream) at universities in 2005.

4.4.3.26 Rural Development graduates at universities in 2005

Eight (8) African graduates qualified at Honours level in this CESM in the 2005 academic year, 4 graduates were males and 4 were females.

4.4.3.27 Agricultural Extension (Inst.Agrar. Stream) graduates at universities in 2005

Three (3) graduates qualified in this CESM during the 2005 academic year at universities. Table 119 depicts a demographic breakdown of Agricultural Extension (Inst.Agrar Stream) graduates during the 2005 academic year by level of qualification.

Table 119: Demographic breakdown of Agricultural Extension (Inst.Agrar. Stream) graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Honours	1	1	**2**	0	0	**0**	0	0	**0**	0	0	**0**	**2**
Masters	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**1**
TOTAL	1	1	**3**	0	0	**0**	0	0	**0**	0	0	**0**	**3**

One (1) African male and 1 African female graduated at Honours level in this CESM during the 2005 academic year at universities. At Masters level in this CESM, 1 African male graduated.

4.4.3.28 Land Reclamation graduates at universities in 2005

One (1) African male graduated in this CESM at Honours level during the 2005 academic at universities.

4.4.3.29 Other Agricultural and Renewable Resources graduates at universities in 2005

Eighteen (18) graduates were awarded with Masters Degree in this CESM at universities during the 2005 academic year. Whites account for 56% and Africans constitute 44% of the Masters graduates in this CESM. Males dominate the Masters level graduates in this CESM with 89% and females constitute only 11%.

Table 120 presents a demographic breakdown of Other Agricultural and Renewable Resources graduates during the 2005 academic year by level of qualification.

Table 120: Demographic breakdown of Other Agricultural and Renewable Resources graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Masters	8	0	**8**	0	0	**0**	8	2	**10**	0	0	**0**	**18**
TOTAL	8	0	**8**	0	0	**0**	8	2	**10**	0	0	**0**	**18**

4.4.3.30 Horticulture (Inst.Agrar Stream) Graduates at Universities in 2005

One (1) African female graduate qualified in this programme at universities during the 2005 academic year.

4.5 CONCLUSION

Enrolments generally increased in the 2005 academic year compared to the 2004 academic year, only 5 404 students were registered in 2004 whilst 8 302 students enrolled in 2005. This could be attributed to the fact that number of universities in the study increased from 8 to 10 universities. As it has been the case in the 2004, enrolments far outweigh graduate figures in the Universities. Universities enrolled 8 302 students in agricultural programmes in 2005 and only 1328 which is only 16% of the total number of enrolments.

Agricultural Science, Agricultural Management and Animal Science recorded the highest enrolments with 1947, 1555, and 1312. For Animal Science this outweighs the enrolments for the 2004 academic year, where only 996 students enrolled. A significant decrease from 2289 down to 1947 is evident in Agricultural Science whilst a sharp increase is observable in Agricultural Management with 68% higher than the 2004 enrolments.

In 2004 the lowest enrolments were in Land Reclamation with 16 students and in the 2005 Agricultural Economics (BCom Stream) only 11 students enrolled. Expectedly so, graduates qualified in Agricultural Science were the highest at 306 followed by Animal Science with 265. The number of graduates in Agricultural Management was very low at 152, when taking into contemplation the fact that enrolments amount to 1555. Agricultural Food Technology (Inst.Agrar Stream), Horticulture (Inst.Agrar Stream), Land Reclamation (Inst.Agrar Stream) and Agronomy (Inst.Agrar Stream) had the lowest graduates with 1 person each.

Compared to the 50 enrolments registered in the Inst.Agrar programmes in 2004, 133 students enrolled in Inst.Agrar programmes in 2005 academic year. As was the case in the 2004 academic year, this trend is attributed to the fact that Inst. Agrar programmes are offered by University of Pretoria only in South Africa.

University of Stellenbosch still, as it has been the trend in 2004, has a bigger share of enrolments and graduates in all the universities despite the fact that many agricultural programmes are offered by University of Pretoria. University of Venda, University of Zululand and University of Fort Hare have the lowest enrolment and graduates figures. This can be attributed to the lowest number of programmes offered by these institutions.

Africans continued to enroll in big numbers at all levels in all the programmes, with the exception of Scarce Skills categories where their enrolments are very low. African graduates were higher than that of Whites in all agricultural programmes with the exception of Scarce Skills.

As was the trend in 2004, generally Africans dominate in most of the agricultural programmes in universities in terms of enrolments and graduates figures; however there are programmes, which are predominantly, White. For instance, Whites dominate in few programmes such as Agricultural Economics (AgriBusiness), Agricultural Science (Science Stream) and Agricultural Food Technology, while Africans dominate in Animal Science, Agricultural Extension, and Agricultural Science (Art. Stream). Generally Coloured and Indians are less represented in all the programmes offered by universities.

In 2004, males dominated the enrolments and graduates in almost all the programmes except in the case of Agricultural Food Technology where females outweigh the number of male enrolments. The trend continues in the 2005 academic year in such that at some other study levels males are not represented at all e.g. at Postgraduate diploma graduates. African males and White males together still constitute fifty 58% of the total enrolments and in the case of graduates they slightly decrease from 54% in 2004 to 51% of the total graduate figures in all the programmes at universities in 2005, with the exception of Scarce Skills categories. With regards to graduate outputs, females dominate mainly 2 programmes and these are Agricultural Food Technology and Animal Science.

A trend continues at a university that is the number of enrolments and graduates at Undergraduate level is very high compared to the enrolments and graduates figures at postgraduate level and this is a cause for concern. For the 2004 Masters at Undergraduate level, which constitutes 66% of the total enrolments, follows highest enrolment figures with 20%. PhD and Honours recorded lowest enrolments figures with 8% and 6% of the total number of enrolments in Universities respectively.

Less has changed in the 2005 where Junior Degree level still records the highest enrolments figures with 74% followed by Masters enrolments with 15%. Postgraduate Diploma at Honours and PhD with 5% each follows the lowest enrolments figures with 1% of the total enrolments at universities. With regards to graduates in 2005, a big share goes to Junior Degree graduates with 65% followed by Masters with 16% and Honours with 11% of the total graduates. The PhD and Postgraduate Diploma graduates account for 5% and 3% of the total graduates at universities. This is more or less similar to the 2004 situation where Junior Degree graduates dominate with 54%, followed by Masters with 23%, while Honours and PhD graduates recorded 18% and 5% of the total graduate outputs respectively.

It is still a general trend in the Universities that White students dominate in the programmes in Agricultural Food Technology, Agricultural Science (Science Stream), Forestry, Horticulture and Wildlife. On the other hand Africans dominate significantly in programmes in Agricultural Science (Art. Stream), Agricultural Extension, Animal Science, Plant Science, Soil Science, Agricultural Management, Agricultural Food Technology (Inst.Agrar stream) and Rural Development (Inst.Agrar).

Since there has not been much changes in terms of the enrolments and graduate outputs it is still valid to highlight that the programmes in universities need to be evaluated in terms of their relevance in addressing the needs of the sector, with more emphasis on programmes with high enrolments and graduates to ensure that there is no overproduction of skills in some of the programmes which leads to unemployed agricultural graduates and a negative imbalance on supply and demand of on agricultural skills in the labour market . It will also be essential, that the sector together with Universities review the content of the curriculum to ensure that it prepares students for the world of work.

Chapter 5

Enrolment and graduates outputs for scarce skills in agriculture



Chapter 5

ENROLMENTS AND GRADUATES OUTPUT FOR SCARCE SKILLS IN AGRICULTURE

5.1 Introduction

Chapter 5 presents data on enrolment and graduate outputs in Veterinary Nursing, Veterinary Science (BVSc), Agricultural Engineering, Viticulture, Pomology, and Oenology. Veterinary Science (BVSc), Agricultural Engineering, Viticulture, Pomology, and Oenology are regarded as Scarce Skills in agriculture; hence they are discussed separately from other CESM. The university could, not supply data on graduate and enrolment outputs for Veterinary Nursing and BVSc at postgraduate level; because the University indicated that their policy does not allow them to provide DoA with the information.

The Postgraduate figures for Agricultural Engineering could not be supplied by University of KwaZulu-Natal, since the institution could not separate figures for Agricultural Engineering postgraduate enrolments and graduate outputs from postgraduates of other engineering disciplines.

5.2 Enrolments and Graduate Outputs for Diploma Veterinary Nursing in 2005

5.2.1 Enrolments in Diploma Veterinary Nursing in 2005

The Diploma in Veterinary Nursing is offered by the University of Pretoria only. Table 121 depicts a demographic breakdown of Diploma Veterinary Nursing enrolments during the 2005 academic year.

Table 121: Demographic breakdown of diploma Veterinary Nursing enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma Veterinary Nursing	2	1	**3**	0	0	**0**	1	83	**84**	0	1	**1**	**88**
TOTAL	2	1	**3**	0	0	**0**	1	83	**84**	0	1	**1**	**88**

Eighty eight (88) students were enrolled at Diploma level in Veterinary Nursing during the 2005 academic year at the University of Pretoria.

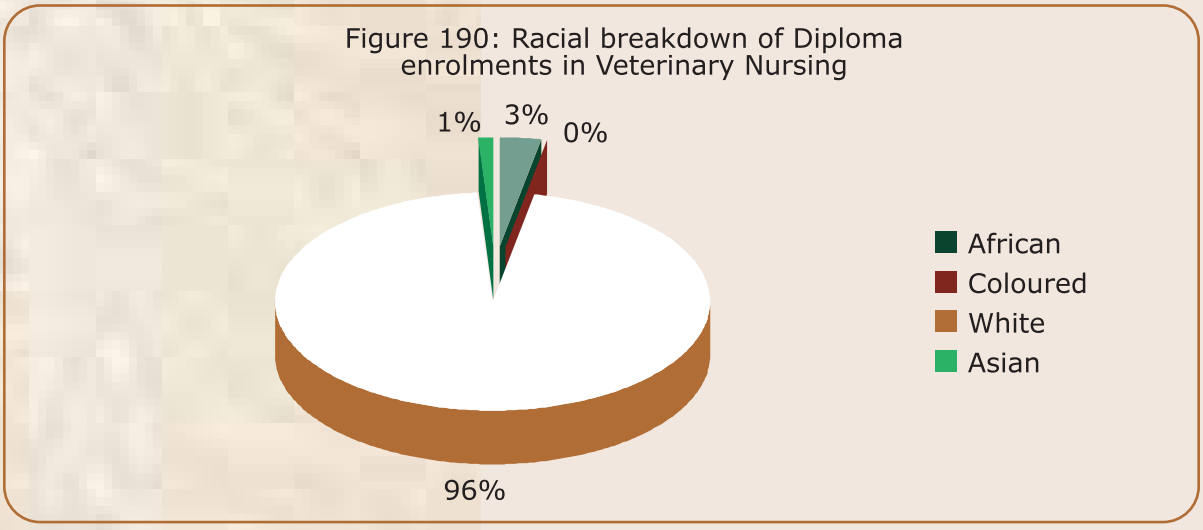
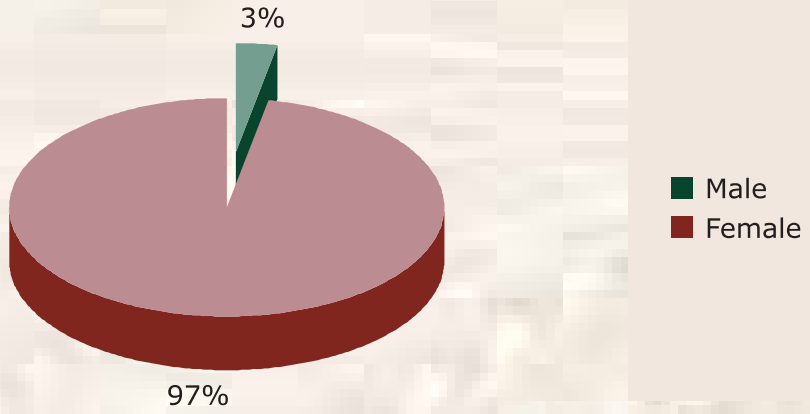


Figure 190 and 191 depicts that to a larger extent Diploma Veterinary Nursing enrolments is dominated by White females constituting 96% of the total enrolments followed by Africans with only 3%.

Figure 191: Gender breakdown of Diploma enrolments in Veterinary Nursing



5.2.2 Diploma Graduates Output in Veterinary Nursing in 2005

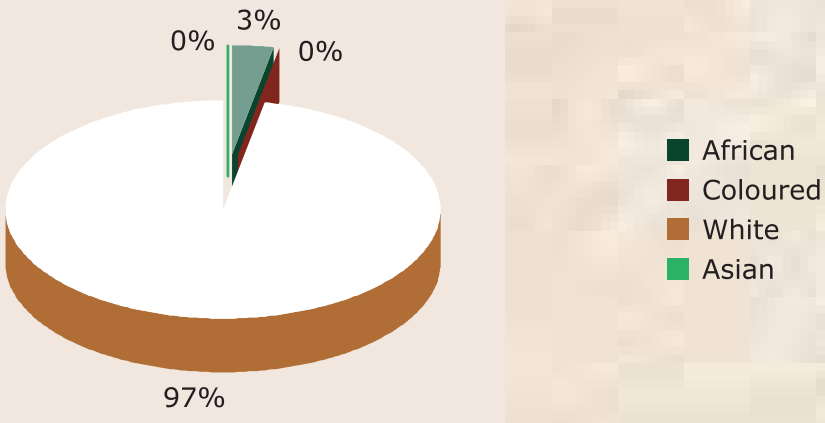
The Diploma Veterinary Nursing graduates during the 2005 academic year in the University of Pretoria. Table 122 presents a demographic breakdown of Diploma Veterinary Nursing graduates during the 2005 academic year.

Table 122: Demographic breakdown of Diploma Veterinary Nursing graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma Veterinary Nursing	1	0	**1**	0	0	**0**	0	38	38	0	0	**0**	**39**
TOTAL	1	0	**1**	0	0	**0**	0	38	**38**	0	0	**0**	**39**

White females dominate the Diploma in Veterinary Nursing graduates with 97% of the total graduates as indicated in figure 135.

Figure 192: Racial breakdown of Diploma graduates in Veterinary Nursing



5.3 Enrolments and graduate outputs for BSc Veterinary Biology and Veterinary Science (BVSc) Degree in 2005

5.3.1 Enrolments in BSc Veterinary Biology in 2005

The University of Pretoria offers BSc Veterinary Biology and it is a 3 year programme that precedes the Veterinary Science (BVSc) Degree. Students who complete this programme can enroll for the four year Veterinary Science (BVSc) provided they pass a stringent selection phase and only 120 students shall make it to Veterinary Science (BVSc). One hundred and twenty three (123) students enrolled for this programme during the 2005 academic year. Table 123 presents demographic breakdown of Veterinary Science (BVSc) degree in 2005.

Table 123: Demographic breakdown of BSc Veterinary Biology enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
BSc Veterinary Biology	6	4	**10**	1	0	**1**	44	65	**109**	0	3	**3**	**123**
TOTAL	6	4	**10**	1	0	**1**	44	65	**109**	0	3	**3**	**123**

White students immensely dominated this programme with 89% percent followed by African students with only 8% of the total number of students enrolled in this programme. Asians and Coloured students accounted for 2% and 1% of the total number of enrolments in BSc Veterinary Biology.

5.3.2 Enrolments in Veterinary Science (BVSc) Degree in 2005

The BVSc Degree is offered by the University of Pretoria only, from Undergraduate to Postgraduate levels. This programme has been declared by the Department of Agriculture as one of the Scarce Skills in the Agricultural sector. Eighty five (85) students enrolled for the Veterinary Science (BVSc) Degree during the 2005 academic year. Table 124 depicts a demographic breakdown of Veterinary Science (BVSc) Degree enrolments during the 2005 academic year.

Table 124: Demographic breakdown of Veterinary Science (BVSc) degree enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
B.V. Sc. Degree	5	1	**6**	1	0	**1**	28	48	**76**	2	0	**2**	**85**
TOTAL	5	1	**6**	1	0	**1**	28	48	**76**	2	0	**2**	**85**

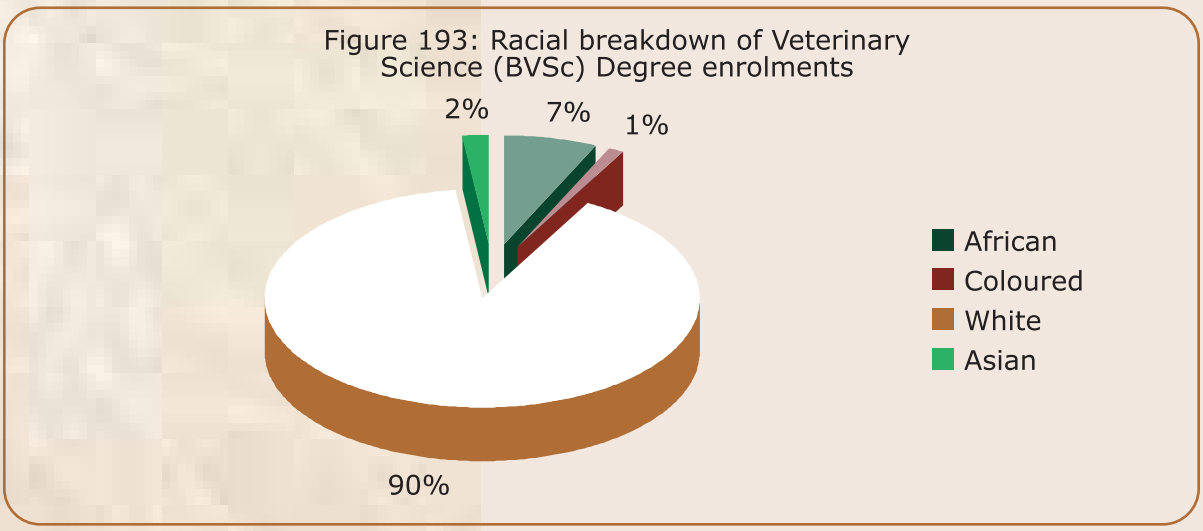
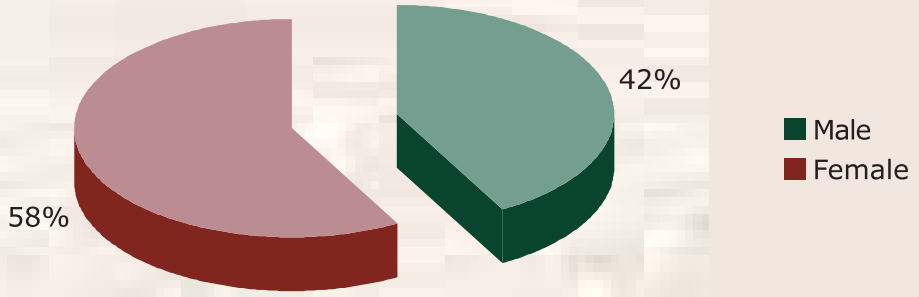


Figure 193 outlines the breakdown of BVSc Degree according to enrollments in the 2005 academic year. White students accounted for 90% of these Degree enrolments in this programme followed by African students and Asian students with 7% and 2% respectively. Coloured students comprised 1% of the (BVSc) enrolments in the 2005 academic year.

Figure 194: Gender breakdown of Veterinary Science (BVSc) Degree enrolments



Gender breakdown in figure 194 depicts that female students constituted 58% of the programme and male students accounted for 42%. Forty eight (48) White female students enrolled for Veterinary Science BVSc and only 1 African female enrolled for the programme.

White males accounted for 80% of the male enrolments in this degree programme. African males and Asian males constituted 14% and 6% respectively of the Veterinary Science BVSc enrolments. No Coloured males enrolled for the BVSc Degree male enrolments.

5.3.3 Graduates output in Veterinary Science BVSc Degree in 2005

Eighty seven (87) BVSc graduates were produced in 2005. Table 125 presents a demographic breakdown of BVSc graduates during the 2005 academic year.

Table 125: Demographic breakdown of Veterinary Science (BVSc) degree graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Degree	0	0	**0**	1	0	**1**	25	57	**82**	1	3	**4**	**87**
TOTAL	**0**	**0**	**0**	**1**	**0**	**1**	**25**	**57**	**82**	**1**	**3**	**4**	**87**

Figure 195: Racial breakdown of BVSc Veterinary Science Degree graduates

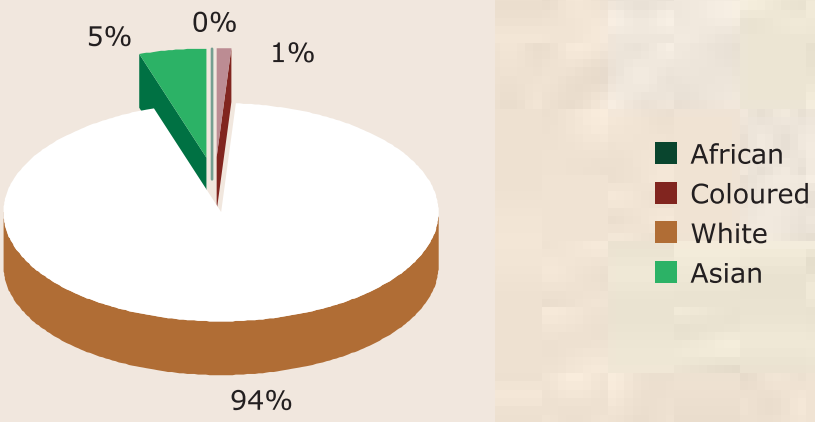


Figure 195 depicts that White graduates constituted 94% of the racial groups collectively constituted 6% of all the (BVSc) graduates.

Figure 196: Gender breakdown of BVSc Veterinary Science Degree graduates

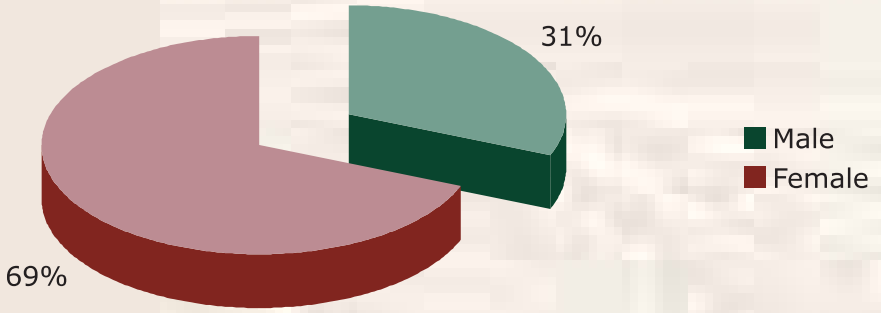


Figure 196 indicates that female graduates dominated the BVSc graduates with 69% and male graduates accounted for 31% of the programme. White females constituted 95% and other racial groups collectively constituted 5% of the female BVSc graduates.

5.4 Enrolment and graduate outputs for BSc Agricultural Engineering in 2005

5.4.1 Enrolment in BSc Agricultural Engineering in 2005

BSc Agricultural Engineering is offered by the University of KwaZulu-Natal. Sixty eight (68) students enrolled for BSc Agricultural Engineering Degree during the 2005 academic year. Table 126 presents a demographic breakdown of BSc Agricultural Engineering enrolments during the 2005 academic year.

Table 126: Demographic breakdown of BSc Agricultural Engineering Degree enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
BSc Agricultural Engineering Degree	31	10	**41**	0	0	**0**	19	2	**21**	3	3	**6**	68
TOTAL	31	10	**41**	0	0	**0**	19	2	**21**	3	3	**6**	68

Figure 197: Racial breakdown of BSc Agricultural Engineering Degree enrolments

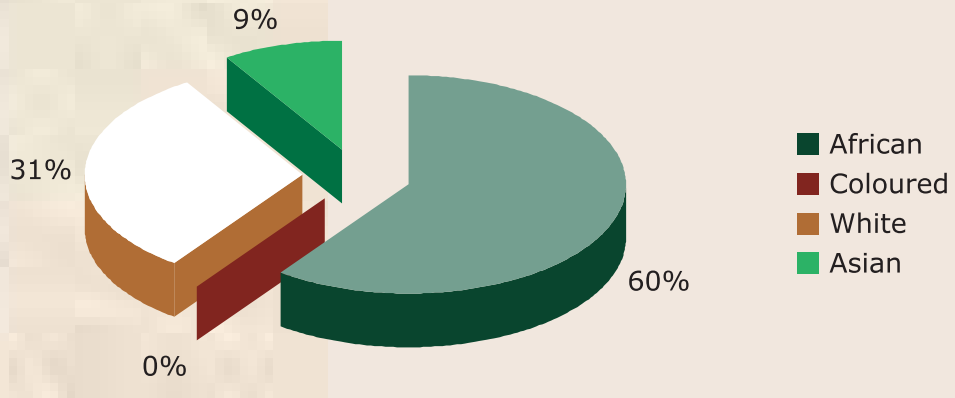


Figure 197 depicts that African students dominated the total enrolments in this programme with 60% followed by White students with 31%. Asian students constituted 9% of the total enrolment in this programme and no Coloured students were enrolled in this programme during the 2005 academic year.

Figure 198: Gender breakdown of BSc Agricultural Engineering Degree enrolments

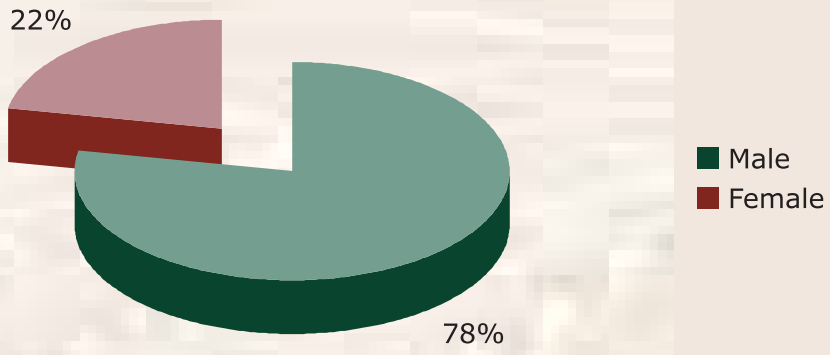


Figure 198 shows that male students dominated total enrolments in this programme with 78% and female students constituted only 22%. White males and African males accounted for 58% and 36% of the male enrolments in this programme respectively. Asian males comprised 6% of the BSc Agricultural Engineering Degree male enrolments.

5.4.2 Graduate outputs in BSc Agricultural Engineering Degree in 2005

The BSc Agricultural Engineering Degree qualified 11 graduates during the 2005 academic year. Table 127 shows a demographic breakdown of Agricultural Engineering graduates during the 2005 academic year.

Table 127: Demographic breakdown of Agricultural Engineering graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Degree	3	1	**4**	0	0	**0**	4	2	**6**	1	0	**1**	**11**
TOTAL	3	1	**4**	0	0	**0**	4	2	**6**	1	0	**1**	**11**

Figure 199: Racial breakdown of BSc Agricultural Engineering Degree graduates

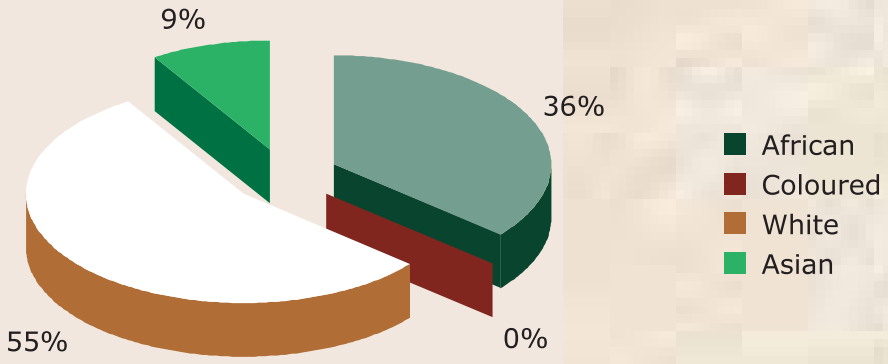


Figure 199 shows that White graduates comprised 55% of the total graduates in this programme followed by African graduates with 36% and Asian graduates constituted 9%.

Figure 200: Gender breakdown of BSc Agricultural Engineering Degree graduates

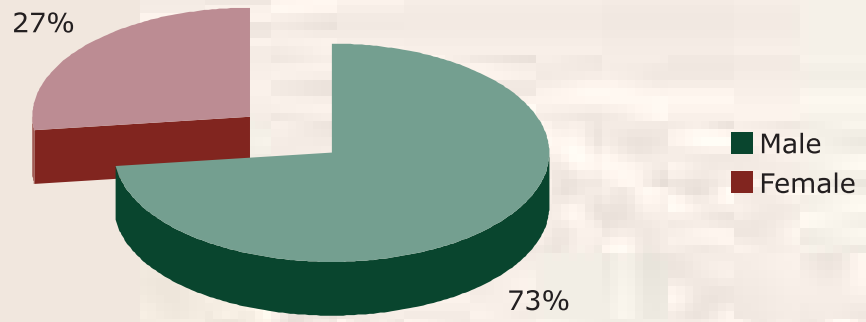


Figure 200 indicates that male graduates dominated the BSc Agricultural Engineering Degree with 73% and female graduates constituted only 27% of the graduates in this programme. White males dominated the male graduates with 50% followed by African males with 37% and Asian males comprised 13% of the male graduates in this programme

5.5 Enrolments and graduate outputs in Viticulture in 2005

5.5.1 Enrolments in Viticulture in 2005

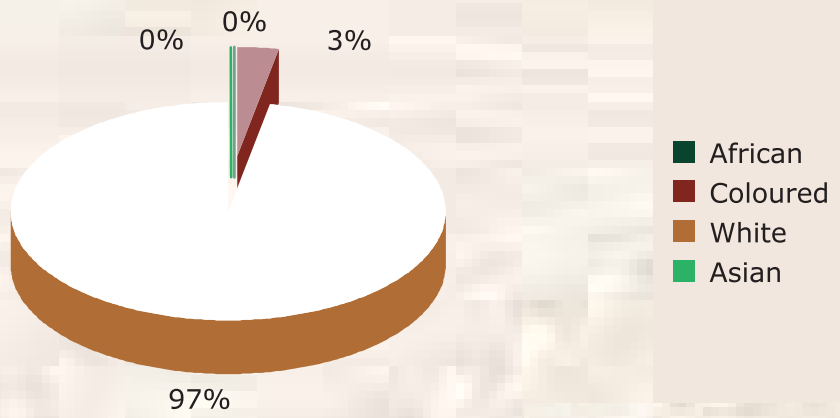
The two institutions in South Africa offering programmes in Viticulture are Elsenberg College of Agriculture and University of Stellenbosch only. Viticulture consists of the art and science stream. The science stream is offered by the University of Stellenbosch and the Art. Stream is offered by Elsenburg College of Agriculture. The B Agric programme at Elsenburg was introduced in 2004 and the first group of graduates will only be produced in 2006 academic year. University of Stellenbosch offers this programme from Degree to a PhD level. Three hundred and six (306) students enrolled for Viticulture during the 2005 academic year. Table 128 depicts a demographic breakdown of Viticulture enrolments in the 2005 academic year.

Table 128: Demographic breakdown of Viticulture enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	0	0	**0**	1	0	**1**	30	4	**34**	0	0	**0**	**35**
Degree	4	6	**10**	10	6	**16**	143	89	**232**	0	0	**0**	**258**
Honours	0	1	**1**	0	0	**0**	4	0	**4**	0	0	**0**	**5**
Masters	0	0	**0**	0	0	**0**	4	2	**6**	0	0	**0**	**6**
PhD	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**
TOTAL	4	7	**11**	11	6	**17**	182	96	**278**	0	0	**0**	**306**

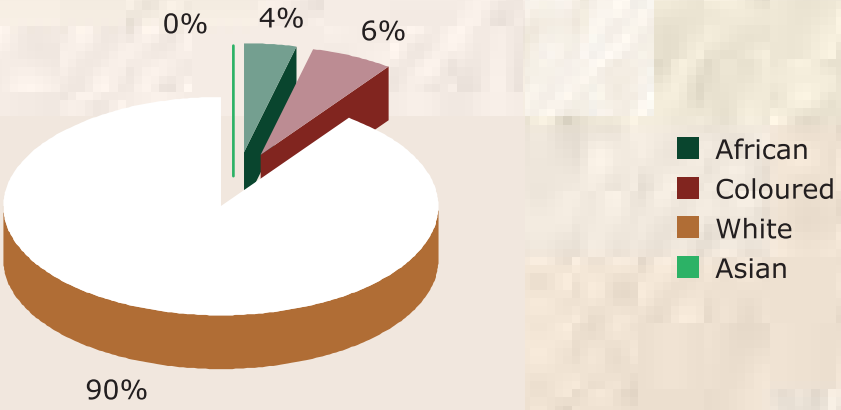
Two hundred and fifty eight (258) students enrolled at Degree level in Viticulture, which constituted 84% of the total Viticulture enrolments. Diploma enrollments in Viticulture constituted 11% of the Viticulture enrolments during the 2005 academic year. The Masters and Honours level constituted 2% of the Viticulture enrolments each. PhD amounted to 1% of these programme enrolments during the 2005 academic year.

Figure 201: Racial breakdown of Diploma Viticulture enrolments



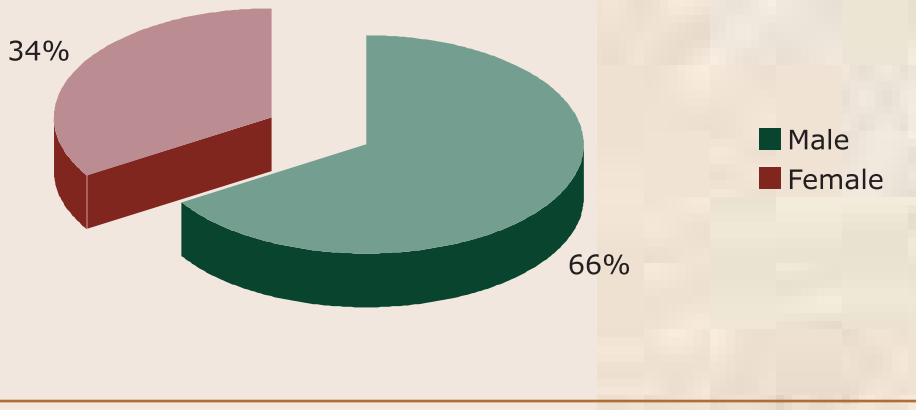
Largely, as depicted in figure 201, Whites dominate the Diploma Programme in Viticulture and they constitute 97% of the total enrolments. White males dominate with 86% of the total enrolments.

Figure 202: Racial breakdown of degree Viticulture enrolments



White students dominate the degree in Viticulture with 90% of the total degree enrolments in the 2005 academic year. Coloured and African students constituted 6% and 4% respectively. No Asian students were registered in the 2005 academic year levels in all the programmes in Viticulture.

Figure 203: Gender breakdown of Degree Viticulture enrolments



Male students dominated the Degree enrolments in Viticulture in the 2005 academic year with 61% and female students enrolments amounted only to 39%. White males largely dominate male students with 91% of the male enrolments in Viticulture at degree level. Coloured and African males constituted 6% and 3% respectively.

Only 5 students registered for Honours in Viticulture in the 2005 academic year; 1 was African female and 4 were White males. 6 White students enrolled at Masters level of which 4 were males and 2 were females. At PhD level only 1 White male and 1 White female were registered in the 2005 academic year in Viticulture at PhD level.

5.5.2 Graduate 0utputs in Viticulture in 2005

Fifty (58) graduates qualified in Viticulture in the 2005 academic year. Table 129 presents a demographic breakdown of Viticulture graduates at Stellenbosch in the 2005 academic year.

Table 129: Demographic breakdown of Viticulture graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	0	0	**0**	1	0	**1**	6	1	**7**	0	0	**0**	**8**
Degree	0	1	**1**	1	2	**3**	29	15	**44**	0	0	**0**	**48**
Masters	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	**2**
TOTAL	0	1	**1**	2	2	**4**	36	17	**53**	0	0	**0**	**58**

Eight (8) graduates qualified at diploma level in Viticulture. Seven (7) of them were Whites and one was Coloured. Forty eight (48) graduates qualified at degree level in Viticulture in the 2005 academic year. The degree graduates in Viticulture consist of 44 Whites, 3 Coloureds and 1 African female.

The Masters level qualified 1 White female graduate and 1 White male graduate in Viticulture for the 2005 academic year.

5.6 Enrolments and graduate outputs for Pomology in 2005

6.6.1 Enrolments in Pomology in 2005

Pomology is only offered by Elsenburg College of Agriculture. Table 130 presents a demographic breakdown of Diploma in Pomology enrolments in the 2005 academic year.

Table 130: Demographic breakdown of Pomology enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	**2**
Degree	0	1	**1**	4	0	**4**	6	1	**7**	0	0	**0**	**12**
TOTAL	0	1	**1**	4	0	**4**	8	1	**9**	0	0	**0**	**14**

Only 2 White males were enrolled at Diploma level in Pomology during the 2005 academic year at Elsenburg College of Agriculture. Twelve (12) students enrolled at Degree level in Pomology during the 2005 academic year. Seven (7) were Whites, 4 Coloureds and 1 African student.

5.6.2 Graduates output in Diploma Pomology in 2005

Three (3) White male graduates who qualified, graduated with Diploma in Pomology during the 2005 academic year. Table 131 indicates a demographic breakdown of Diploma in Pomology graduates in the 2005 academic year.

Table 131: Demographic breakdown of Pomology diploma graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Diploma	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**
TOTAL	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**

5.7 Enrolments and graduate outputs for Oenology in 2005

5.7.1 Enrolments in Oenology in 2005

Oenology is offered by the University of Stellenbosch only. Forty three (43) students enrolled in Oenology in the 2005 academic year at University of Stellenbosch. Table 132 presents a demographic breakdown of Oenology in the 2005 academic year.

Table 132: Demographic breakdown of Oenology enrolments in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Degree	1	0	**1**	0	1	**1**	15	16	**31**	0	0	**0**	**33**
Masters	0	1	**1**	0	0	**0**	4	2	**6**	0	0	**0**	**7**
PhD	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	**3**
TOTAL	1	1	**2**	0	1	**1**	22	18	**40**	0	0	**0**	**43**

Out of 33 students who registered for the Oenology Degree in 2005, 31 are White, 1 is African and 1 is Coloured. At Master level 6 White females and 1 African female were enrolled. Only 3 white males registered for a PhD in Oenology in 2005.

5.7.2 Graduate outputs in Oenology in 2005

Twelve (12) graduates were awarded qualifications in Oenology in the 2005 academic year; 11 of these were White and 1 was a Coloured female. Table 133 presents a demographic breakdown of Oenology in the 2005 academic year.

Table 133: Demographic breakdown of Oenology graduates in 2005

LEVEL	African			Coloured			White			Asian			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Degree	0	0	**0**	0	1	**1**	1	6	**7**	0	0	**0**	**8**
Masters	0	0	**0**	0	0	**0**	2	1	**3**	0	0	**0**	**3**
PhD	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	**1**
TOTAL	0	0	**0**	0	1	**1**	4	7	**11**	0	0	**0**	**12**

Seven (7) male graduates and 2 female graduates qualified at a Degree level in Oenology in the 2005 academic year. At Masters level 2 White male graduates and 1 White female graduate qualified. Only 1 white male was awarded PhD in Oenology in 2005.

5.8 CONCLUSION

Generally, White males dominate both the enrolments and graduate figures in the Scarce Skills programmes in agriculture, with the exception of Veterinary Science (BVSc), Veterinary Nursing and Veterinary Biology, which are mainly dominated by White females. Out of 296 students enrolled in these programmes for the 2005 academic year, 66% were White females. Likewise, White females who graduated in Veterinary Nursing and Veterinary Science (BVSc) constituted 77%. In 2004 Veterinary Nursing and Veterinary Science (BVSc) were still largely dominated by White females with 138 of 188 students. The supply of graduates in these programmes continues to be imbalanced.

Seven hundred and twenty seven (727) students enrolled in the Scarce Skills categories, Whites still accounted for the highest enrolment figure compared to other racial groups with 85% of all the enrolments in Scarce Skills. Two hundred and ten (210) graduates who were qualified by universities during the 2005 academic year, 92% were White with other racial groups constituting the remaining 8%. In the 2004 academic year, 563 students enrolled in Scarce Skills programmes, White students constitute to 85%. One hundred and eighty nine (189) graduates qualified in Scarce Skills programmes in the 2004 academic year; an increase of 21 graduates is observable. White graduates accounted for 56% of all Scarce Skills graduates produced in the 2004 academic year.

The highest enrolment figures were registered in Viticulture and it has enrolled 306 students in 2005 with an increase of 26 students from the 280 enrolled in 2004 academic year. The Degree in Viticulture is the highest in terms of enrolments compared to other degree programmes, with a total of 258 students. In 2004, 235 students enrolled in Viticulture degree and that was the highest enrolment in Viticulture. The lowest number of enrolments at undergraduate level is in Pomology with only 14 students enrolling in the programme 2005 academic year and only 2 students enrolled in Pomology in the 2004 academic year.

At Postgraduate level, 23 students enrolled in the Scarce Skills categories, 21 were White and were dominated by males. There is a very insignificant increase compared to the 22 students enrolled in the 2004 academic year.

One would expect that Africans would dominate in all the programmes including Scarce Skills categories, as they are the majority in terms of the country's demographics. Contrary to that insignificant graduate and enrolment figures which are almost equal to that of Asians and Coloured who constitute a very low percentage in terms of the demographics of the country were recorded.

Very low numbers of Africans in all the Scarce Skills categories might be attributed to several factors, which might include among others, the lack of interest by Africans in the agricultural Scarce Skills programmes and or admission requirements for pursuing studies in the Scarce Skills categories, which the majority of Africans might not meet. The contribution of the universities offering Scarce Skills programmes with regards to their efforts in attracting African students in these programmes could also be a contributing factor.

Out of 123 students enrolled for BSc Veterinary Biology in the 2005 academic year, only 83 students managed to make it to level 4 of this programme which is Veterinary Science (BVSc), and the majority of those progressing to the BVSc are Whites. Factors contributing to most Africans not progressing to the BVSc level need to be investigated, and come up with interventions to address the problem.

There are still very low numbers of graduates in Agricultural Engineering across all racial groups. Many African females register for Agricultural Engineering compared to other racial groups, but the graduate output is little lower than that of White males. From the trends it indicates that although enrollments figures for Africans are increasing every year from 2003, the graduate figures decline every year. In both cases of BVSc and BSc Agricultural engineering although there is an increase in the number of African enrollments, the number of Africans graduating in the two programmes is very insignificant and the figures continue to drop every year. However, it is evident from the data collected in 2003, 2004 and 2005 that in the case of BSc: Agricultural Engineering, the number of African graduates is almost equal to that of White graduates.

This situation has a negative impact on employment equity in the sector, and it is therefore essential that interventions aimed at marketing Scarce Skills in agriculture be focused on schools, which are predominantly African, Coloured and Asian. It is also essential that all the factors influencing this situation be investigated in order to make evidence-based decision making which will eliminate the skewed participation of Blacks and ensure equity in the agricultural sector.

Chapter 6

Analysis and recommendations



CHAPTER 6

ANALYSIS AND RECOMMENDATIONS

6.1. Analysis of agricultural graduate outputs and enrolments during the 2005 academic year

The total number of agricultural enrolments during 2005 in the Colleges of Agriculture, Universities of Technology and universities is 1 739, 3 035 and 8 302 respectively. These figures amount to a total of 13 076 students enrolled for AET programmes in the Higher Education Band during 2005, ranging from Higher Certificate (NQF level 5), offered by agricultural colleges, to PhD programmes (NQF level 8). The total number of agricultural graduates qualified at agricultural colleges, universities of technology and universities is 638, 685 and 1 328 respectively and this results in an overall figure of 2 651 graduates produced in agricultural programmes during the 2005 academic year by public Higher education institutions offering agricultural programmes.

The trends observed in the "2004 Report on Agricultural graduate outputs and enrolments" (DoA, 2004) are still evident in 2005. The general trend in the data collected in 2005 is that Whites and Africans dominated enrolments and graduate figures in all the agricultural programmes, except in the case of Scarce Skills programmes, which are dominated by Whites. This might be attributed to the fact that these 2 racial groups constitute the majority of the population in terms of the demographics of the country. However, the findings indicate that some programmes are dominated by Whites and others are dominated by Africans. Generally the number agricultural enrolments and graduates for Coloureds and Indians are very insignificant and in some cases these two racial groups do not feature at all. African and White males dominated most of the agricultural programmes.

The number of enrolments in the Colleges of Agriculture increased from 1461 in 2004 to 1739 in 2005. On the other hand graduate figures decreased from 668 in 2004 to 638 in 2005. As it was the case in the 2004 academic year, Whites and Africans dominated enrolments in the colleges of agriculture. However, in comparison to 2004 college enrolments, there is a slight decrease in the number of African enrolments and a slight increase in the number of White enrolments in 2005. African enrolments decreased from 888 in 2004 to 872 in 2005, while White enrolments increased from 528 in 2004 to 749 in 2005.

There is a noticeable increase in both the number of Coloured enrolments and graduates in the Colleges of Agriculture in 2005 in comparison to 2004. Coloured enrolments increased from 43 in 2004 to 113 in 2005, while Coloured graduate figures increased from 29 in 2004 to 72 in 2005. This is a positive sign that some of the interventions to recruit Coloureds in the agriculture sector are making an impact. On the other hand Asians are still largely underrepresented in all the colleges of agriculture.

The general trend from the 2004 and 2005 figures, males dominate both the enrolments and graduate figures. However, compared to the 2004 figures, there is a 10% decrease in male enrolments and a 7% increase in female enrolments in the 2005 academic year.

Cedara, Elsenburg, Grootfontein, Lowveld and Potchefstroom attracted students from more than one racial group while other colleges continued to enroll students from one racial group. Madzivhandila had introduced learnerships in the process of phasing out the old curricula.

In the 2005 academic year, in addition to the Diploma and Higher Certificate Programmes offered by the Colleges of Agriculture, almost all the agricultural colleges have introduced many short courses at General Education and Training (GET) and Further Education and Training (FET) levels compared to the 2004 academic year. The short courses offered by the colleges are more demand driven and are aimed at addressing the needs of the farming community and LRAD beneficiaries in their respective locations. Some of the short courses are accredited and others are not. The non-accredited programmes are offered in the form of short courses which is more of information sharing rather than competency based and as such the participants receive certificates of attendance only.

Most of the beneficiaries and participants in the short courses are Africans, and very few participants are from the other racial groups. Some colleges have reported that they did not keep statistics of the trainees who participated on these programmes, and others have statistics but no demographic breakdown of the participants in the short courses. From the information gathered, a record of 6175 students enrolled on short courses in the 2005 academic year and this figure might be far greater considering that some of the colleges do not keep statistics of the number of participants in short courses. It is therefore crucial that all the colleges should keep a database of the beneficiaries and participants in these programmes in order to be able to evaluate the impact of the programmes to the socio economic situation of the beneficiaries at a later stage.

The findings indicated that Universities of Technology enrolled most of the students in Animal Science, Agricultural Management and Renewable Natural Resources programmes during the 2005 academic year. Generally African students followed by White students dominate agricultural programmes at the Universities of Technology. However, some programmes are predominantly White while others are predominantly African. Coloured and Indian students, as is the case in the Colleges of Agriculture, constituted very insignificant figures in all the programmes for both enrolments and graduates output. Gender analysis throughout the Universities of Technology indicates high enrolment figures amongst male students. The same trend applies also to the graduate outputs at the Universities of Technology.

The majority of graduates at Universities of Technology were recorded in Agricultural Management, Animal Science and Renewable Natural Resources programmes. TUT, CPUT and CUT had high graduate figures during the 2005 academic year. African students and White students generally dominate graduation figures at both Universities of Technology and Universities, with male students constituting the majority of graduates and Enrolments.

Universities enrolled the majority of the students in Agricultural Science (Science Stream), Animal Science, Agricultural Science (Art Stream) and Agricultural Management. Distribution of enrolments among universities shows that Stellenbosch, North West, Free State and Pretoria had the highest enrolments during the 2004 academic year. African and White students are the only students who recorded significant enrolment figures with male students dominating the enrolments.

Most of the graduates at universities during the 2004 academic year graduated with Agricultural Science (Science Stream), Animal Science and Agricultural Science (Art Stream). The universities of Stellenbosch, North West, Pretoria and Free State produced most of the graduates in 2004. The majority of graduates are African and White students, and males dominate the agricultural graduates produced during 2004.

The number of enrolments at both universities and Universities of Technology in 2004 far outweighs the number of graduates produced in the same year. For example, universities enrolled 5 367 students in agricultural programmes in 2004, while only 894 students graduated in 2004, which is 83% less than the enrolment figures. Universities of Technology, on the other hand, enrolled 2 564 agricultural students and 783 graduated during 2004. Therefore, there is a need to track down the enrolment figures after 3 and 4 years, depending on the duration of the programme, to establish trends in terms of throughput, failure and dropout rates. However, it should be noted that in the case of the Scarce Skills, the situation is different, with the enrolment figures and graduate figures being almost equal.

From the findings, the general trend is that Africans dominate programmes in Animal Science, Plant Science, Horticulture, and Renewable Resources at Universities of Technology. On the other hand, White students dominate the Land Reclamation, Renewable Natural Resources; Agricultural Management and Wildlife. The same trend is also observable in the 2004 academic year (DoA, 2004).

As was the case in 2004, in the case of universities, White students dominated programmes in Agricultural Science (Science Stream), Agricultural Food Technology, Forestry and Wildlife. African students dominated programmes in Agricultural Economics, Agricultural Economics (AgriBusiness), Agricultural Science (Art Stream), Agricultural Extension, Animal Science, Horticulture, Plant Science, Soil Science, Agriculture Management, Agricultural Food Technology (Inst.Agrar Stream) and Rural Development (Inst.Agrar Stream) significantly. Programmes in Horticulture, Soil Science and Plant Science are generally dominated by both Africans and Whites with regard to enrolments and graduate outputs.

Generally, the findings indicate that both graduate and enrolment figures in the 2 Scarce Skills, i.e. Veterinary Science and Agricultural Engineering, are dominated by Whites. The supply of graduates in these programmes continues to be imbalanced across racial groups.

As was the case in 2004, White females dominate BVSc enrolments and graduates and the trend is the same with regard to Veterinary Nursing. In the 2005 academic year no Africans graduated with a BVSc Degree. Eighty two (82) whites, 4 Asians and 1 Coloured were awarded BVSc Degree. With regard to Veterinary Nursing, almost all the graduates and enrolments are White females, who constitute more than 95%.

Out of 123 students enrolled for BSc Veterinary Biology in the 2005 academic year, only 83 students managed to make it to level 4 of this programme which is Veterinary Science (BVSc), and the majority of those progressing to the BVSc are whites. Factors contributing to most Africans not progressing to the BVSc level need to be investigated, and come up with interventions to address the problem. This situation has a negative impact on employment equity in the veterinary sector, and it is therefore essential that interventions aimed at marketing Scarce Skills in agriculture be focused on schools, which are predominantly African, Coloured and Asian. It is also essential that all the factors influencing this situation be investigated in order to make evidence-based decision-making, which will eliminate the skewed participation of Africans in veterinary services and ensure equity in the agricultural sector.

There are still very low numbers of graduates in Agricultural Engineering across all racial groups. Many African females register for Agricultural Engineering compared to other racial groups, but the graduate output is slightly lower than that of White males. From the trends it indicates that although agricultural engineering enrollment figures for Africans are increasing every year from 2003, the graduate figures decline every year. In both cases of BVSc and BSc Agricultural engineering although there is an increase in the number of African enrolments, the number of Africans graduating in the 2 programmes is very insignificant and the figures continue to drop every year. However, it is evident from the data collected in 2003, 2004 and 2005 that in the case of BSc: Agricultural Engineering, the number of Black graduates is almost equal to that of White graduates.

There has been an increase in Viticulture enrolments and graduates at Degree level, which constitute eighty four percent (84%) of all the Viticulture enrolments in 2005. The CESM has enrolled 306 students in 2005 with an increase of 26 students from the 280 enrolled in 2004 academic year, and graduate figures have increased from 45 in 2004 to 58 in 2005. This might indicate that more students are now attracted to studies in Viticulture at Degree level, depending on the throughput rates and the demand for people with a Degree in Viticulture; this might be a positive trend.

There is a slight increase in the number of Postgraduates registered for Scarce Skills programmes. One would expect that Africans would dominate in all the programmes including Scarce Skills categories, as they are the majority in terms of the country's demographics. Contrary to that, in 2005 there has been insignificant graduate and enrolment figures for Africans in Scarce Skills, which are in most instances, were less than that of Asians and Coloureds who constitute a very low percentage in terms of the demographics of the country.

Very low numbers of Africans in all the Scarce Skills categories might be attributed to several factors, which might include among others, the lack of interest by Africans in the agricultural scarce skills programmes and or admission requirements for pursuing studies in the Scarce Skills categories, which the majority of Africans might not meet. The interventions of the universities offering Scarce Skills programmes with regards to their efforts in attracting African, Coloured and Asian students in these programmes could also be a contributing factor.

The findings of this study indicate that, although a considerable number of students enrolled at Masters and PhD levels, a very low percentage of graduates qualified at these levels during 2005. If this situation continues it will imply that there will be a very low base of research scientists for the agriculture sector in the future.

Generally the enrollment figures in Higher Education institutions in 2005 are higher than the graduate figures in the same year, although there is no correlation between the two variables. Looking at the graduate output, enrolments and throughput rates from the previous years as indicated in the "Ten Year Human Resource Development Review Report on Agriculture" (DoA, 2006) the trend has been the same and graduate figures have always been far below enrollment figures. This might be an indication of high failure and drop out rates in the agricultural programmes.

6.2. Recommendations

6.2.1. Reducing overproduction of graduates in programmes which are not in demand in the agricultural sector.

From the findings it is evident that some institutions qualify many graduates and enroll more students in programmes, which are not in demand in the agriculture sector. This overproduction and over enrolment in certain programmes is attributed to the fact that institutions do not have information about market demands and the rate of employment for their graduates. It is also a known fact that graduates in certain programmes and from certain institutions have high employment rates than others. It is therefore necessary to investigate the reasons for these trends. To curb this problem it is crucial that all the institutions should develop systems which will track the employability of their graduates in the various programmes in order to decrease over production of skills which are not in demand in the agricultural sector. Funding formula for universities should also be done in terms of the relevance and type of programmes offered as well as the employment rate of graduate in those programmes.

6.2.2. Effective participation of the agricultural sector in agricultural curriculum reviews and development of higher and further education institutions

The National Agricultural Education and Training Forum established in terms of the Agricultural Education and Training Strategy (2005) should play a major role in curriculum review meetings of higher education institutions as well as during the development and reviews of agricultural curriculum for General Education and Training and Further Education and Training bands by the Department of Education. This will ensure that agricultural curriculum at all levels of the education system addresses the needs of the agriculture sector.

This study also recommends that DoA Directorates should play a major role in determining the agricultural curricula i.e. directly influence the curricula for respective departments at universities e.g. Directorate Animal Health should liaise with Animal Health departments at different universities for them to know what the labour market requires in terms of skills required e.g. Animal Health Technicians.

6.2.3. Quality benchmarking of same agricultural programmes in all the higher education institutions

The perception that the quality of programmes varies in terms of content from one institution to the other is also a cause for concern. For instance BSc in Agriculture does not offer the same content in all the institutions offering the programme and admission requirements for the same programme vary. It is therefore necessary that the Department of Agriculture in collaboration with the Department of Education investigate the quality of programmes in each institution and to establish quality benchmarks for same programmes in higher education institutions.

6.2.4. Encouraging undergraduates to pursue post graduate studies in specialized fields in agriculture to increase a pool of agricultural scientists

From the findings the general trend is that there is an increasing number of entrants into agriculture at undergraduate level, for instance high number of Africans are enrolling for agricultural programmes at undergraduate level. However, this is not addressing the needs of the rapidly changing landscape as well as the skills demands in the sector. It is also evident from the findings that there are a limited number of agricultural enrolments and graduates at post graduate level, particularly at Masters and PhD level. It is therefore recommended that graduates with undergraduate qualifications outside of the identified Scarce Skills programmes including those with undergraduate qualifications in agricultural economics should pursue higher education programmes and be specialists in certain fields of agriculture. This will establish a strong scientific research base for the sector.

6.2.5. Marketing agricultural careers to Indians and Coloureds

From the findings there is an insignificant number of Indians and Coloureds graduating in and enrolling for agricultural programmes. It is necessary to target Indian and Coloured dominated schools to market agriculture as a career to Indian and Coloured youth.

6.2.6. Recruiting girl learners to register for Scarce Skills programmes in agriculture

The general trend is that there are a lower number of Coloured, Indian and African female enrolments and graduates in Scarce Skills categories. To recruit females into the agricultural scarce skills professions it is important to work in collaboration with the Provincial Departments of Education and to liaise with Girl- Learner coordinators to market agricultural Scarce Skills careers to girl learners. Girl –Learner Coordinators in the various PDEs can also provide a platform for providing guidance to girls in terms of the correct subject combinations at the General Education and Training levels to pursue Scarce Skills in agriculture.

6.2.7. Increasing the number of black students enrolling for and graduating in Scarce Skills programmes in agriculture

Massive career awareness campaigns in schools targeting learners before entry into FET (Grade 10) phase so that they can choose correct subject combination which are required to pursue studies in agricultural Scarce Skills earlier in the FET phase. The target group will be learners from the African, Coloured and Indians communities. White females should also be targeted for agricultural engineering and other Scarce Skills, except for BVSc where they are in the majority. This will be a collaborative venture with Public Relations Departments of the Universities and managers of girl learner educational programmes from Provinces.

It is necessary that agricultural engineering courses are offered in the agricultural colleges and produce agricultural engineering technicians. This will provide basic skills and knowledge of agricultural engineering for those with Mathematics and Science at Senior Certificate level but do not meet the admission requirements for a degree in agricultural engineering. The engineering technician qualification obtained from agricultural colleges might provide skills and knowledge required to pursue agricultural engineering degree at University level, and might also encourage them to pursue agricultural engineering degree at University level. This will then require systems which will allow easy progression and mobility from the agricultural college sector to the University or University of Technology, as well as effective Recognition of Prior Learning (RPL) systems.

6.2.8. Introduction of Veterinary Science Studies by another University

Given the failure of University of Pretoria to produce African, Coloured and Asian veterinarians meeting the labour market demand, this study highly recommends that another university should introduce in its agricultural curricula the veterinary science studies. Secondly, a variety in this field of study is highly envisaged as it is impossible for one institution to successfully and sustainable provide the whole country's labour market with enough veterinarians. Moreover this veterinarian's shortage is further aggravated by the fact that a significant number of veterinarians leave the country though brain drain, preferring oversees countries like the United Kingdom.

6.2.9. Partnership between the Department of Agriculture and Faculties of Agriculture at HET and Colleges of Agriculture.

Department of Agriculture should develop relations with all the faculties of agriculture in Higher Education Institutions whereby the DoA officials will get a platform to communicate the type of people the agricultural labour market is looking for in terms of skills, knowledge and behavior. Secondly, elites in the agricultural business such as CEOs and other senior managers of private companies should be invited for lectures on an ongoing basis as institutions like University of Johannesburg are doing it.

An indication will be given as to what exactly should be the focus of the curricula in the institutions of higher learning with regards to AET. This will not only give confidence to the students completing their qualifications but will ensure that by the time graduates get to the labour market are ready to take on tasks assigned to them and are in understanding of the skills that are currently required in the labour market.

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