

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
 Industry, Innovation, Science, Research and Tertiary Education Portfolio
 Additional Estimates Hearing 2012-13
 13 February 2013

AGENCY/DEPARTMENT: DEPARTMENT OF INDUSTRY, INNOVATION, SCIENCE, RESEARCH AND TERTIARY EDUCATION

TOPIC: Agriculture graduates

REFERENCE: Written Question – Senator Nash

QUESTION No.: AI- 51

1. Please provide any updated figures on the number of agricultural graduates and the number of agriculture-related jobs available.
2. Is there any available data to confirm reports by *The Australian* on 19 January that there has been an increase in the number of students applying to study agriculture in 2013?
 - i. How much was the increase?
 - ii. Which universities saw an increase in numbers?
 - iii. Which courses benefitted from an increase?
3. Please advise which universities still offer agriculture and agricultural science courses and list the types of courses provided.
4. Is there any data available to break down the number of students applying to study agriculture-related courses into gender?

ANSWER

1. The number of domestic graduates in the broad field of Agriculture, Environmental and Related Studies increased by 9.7 per cent from 2 938 in 2007 to 3 224 in 2011. During the same period, the number of international graduates increased by 83.0 per cent from 489 in 2007 to 895 in 2011.

Table 1: Award course completions in Agriculture, Environmental and Related Studies (a) by citizenship status and course level, 2007-2011

Course level	Domestic					
	2007	2008	2009	2010	2011	% Change 2007-11
Doctorate	223	175	202	223	220	-1.3%
Other Postgraduate	634	681	729	828	882	39.1%
Undergraduate	2081	2005	2037	1958	2122	2.0%
TOTAL	2938	2861	2968	3009	3224	9.7%
	International					
Doctorate	92	80	77	95	110	19.6%
Other Postgraduate	279	336	404	432	461	65.2%
Undergraduate	118	118	128	237	324	174.6%
TOTAL	489	534	609	764	895	83.0%

(a) The data takes into account the coding of Combined Courses to two fields of education.

Source: Selected Higher Education Statistics DIISRTE, 2007 to 2011

A detailed breakdown in the award course completions in Agriculture, Environmental and Related Studies is set out in Table 2.

Table 2: Award course completions in Agriculture, Environmental and Related Studies (a) by narrow fields, citizenship status and course level, 2007-2011

Agriculture, Environmental and Related Studies		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	7	13	18	14	20	185.7%
	Undergraduate	105	95	128	128	116	10.5%
	Total	112	108	146	142	136	21.4%
Overseas Students	Postgraduate	<5	5	<5	<5	8	NA
	Undergraduate	31	31	36	53	56	80.6%
	Total	35	36	38	57	64	82.9%
Agriculture		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	143	124	124	139	173	21.0%
	Undergraduate	535	490	462	379	374	-30.1%
	Total	678	614	586	518	547	-19.3%
Overseas Students	Postgraduate	71	72	85	96	101	42.3%
	Undergraduate	14	8	19	17	13	-7.1%
	Total	85	80	104	113	114	34.1%
Horticulture and Viticulture		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	40	21	22	31	37	-7.5%
	Undergraduate	182	129	148	66	129	-29.1%
	Total	222	150	169	92	164	-26.1%
Overseas Students	Postgraduate	10	8	12	11	16	60.0%
	Undergraduate	11	10	<5	9	8	-27.3%
	Total	21	18	16	20	24	14.3%
Forestry Studies		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	14	11	21	19	15	7.1%
	Undergraduate	69	35	38	28	28	-59.4%
	Total	83	46	59	47	43	-48.2%
Overseas Students	Postgraduate	11	10	12	13	13	18.2%
	Undergraduate	<5	<5	0	0	0	NA
	Total	13	12	12	13	13	0.0%
Fisheries Studies		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	<5	5	<5	11	<5	NA
	Undergraduate	64	40	25	8	14	-78.1%
	Total	68	45	28	19	17	-75.0%
Overseas Students	Postgraduate	11	9	7	12	17	54.5%
	Undergraduate	6	6	<5	<5	<5	NA
	Total	17	15	9	16	19	11.8%
Environmental Studies		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	579	620	686	756	760	31.3%
	Undergraduate	1038	987	976	1120	1266	22.0%
	Total	1617	1607	1662	1876	2026	25.3%
Overseas Students	Postgraduate	228	284	341	350	374	64.0%
	Undergraduate	54	54	60	149	239	342.6%
	Total	282	338	401	499	613	117.4%
Other Agriculture, Environmental and Related Studies		2007	2008	2009	2010	2011	% change 2007-2011
Domestic Students	Postgraduate	70	62	57	81	94	34.3%
	Undergraduate	88	229	261	234	197	123.9%
	Total	158	291	318	315	291	84.2%
Overseas Students	Postgraduate	36	28	22	41	42	16.7%
	Undergraduate	0	7	7	5	6	NA
	Total	36	35	29	46	48	33.3%

Source: Students, Selected Higher Education Statistics (DIISRTE)

(a) The data takes into account the coding of Combined Courses to two fields of education.

To ensure compliance with the requirements of Privacy Act and the HESA 2003 Act, where the cell value is less than 5 the data is annotated as <5.

The individual occupational report (Attachment A) produced by the Department of Education, Employment and Workplace Relations provides information on Agricultural Consultant/Scientist labour market. The report provides a current labour market rating of *No Shortage* which represents a change from the previous rating of *Shortage*.

The Australian Graduate Survey (AGS) provides information on the labour market activities of graduates of Australian universities at approximately four months after graduation. The following tables present information relating to domestic bachelor degree graduates in the field of Agricultural, Environmental and Related Studies (excluding environmental studies), who were employed on a full-time basis at the time the 2011 AGS was conducted (latest available data).

There were 188 Agricultural, Environmental and Related Studies (excluding environmental studies) graduates who responded to the survey who were employed on a full-time basis. Of these graduates, 34 per cent were employed in the *Agriculture, forestry and fishing* industry, with a further 15 per cent employed in the *Professional, scientific and technical services* industry (see Table 3). The most common occupational group was *Professionals*, accounting for 35 per cent of graduates, followed by *Technicians and tradesworkers* at 20 per cent (see Table 4). Seventy-three per cent of graduates were employed in the private sector (see Table 5).

Table 3: Agriculture graduates employed full-time, by industry of employment, 2011

Industry	Number	Proportion
Agriculture, forestry & fishing	64	34.0%
Mining	np	np
Manufacturing	13	6.9%
Construction	np	np
Wholesale trade	19	10.1%
Retail trade	10	5.3%
Accommodation & food services	5	2.7%
Transport, postal & warehousing	np	np
Financial & Insurance services	11	5.9%
Rental, hiring & real estate services	np	np
Professional, scientific & technical services	28	14.9%
Administrative & support services	np	np
Public administration & safety	11	5.9%
Education & training	np	np
Health care & social assistance	np	np
Arts & recreation services	10	5.3%
Other services	np	np
All industry divisions	188	100.0%

np = not published, data suppressed due to small cell sizes.

Components do not add to totals due to suppressed values and missing responses.

Table 4: Agriculture graduates employed full-time, by occupation of employment, 2011

Occupation	Number	Proportion
Managers	23	12.2%
Professionals	65	34.6%
Technicians and tradesworkers	38	20.2%
Community & personal service workers	5	2.7%
Clerical & administrative workers	10	5.3%
Sales workers	13	6.9%
Machinery operators & drivers	np	np
Labourers	27	14.4%
All Major groups	188	100.0%

np = not published, data suppressed due to small cell sizes.

Components do not add to totals due to suppressed values and missing responses.

Table 5: Agriculture graduates employed full-time, by sector of employer, 2011

Sector of employer	Number	Proportion
Private	137	72.9%
Public\Government	38	20.2%
Not-for-profit	9	4.8%
All sectors	188	100.0%

Components do not add to totals due to missing responses.

- Early tertiary admission data from Tertiary Admission Centres (TACs) indicates that applications to study Agriculture and Environmental Related Studies increased by more than 15 per cent in 2013. However, the broad field can provide a misleading indicator of agriculture applications, as it includes environmental science and other disciplines. The Department's most recent data (Table 6) shows that the number of applications to study agriculture related courses (excluding environmental and other related studies) in 2013 increased by 8.4 per cent to 2 054. This increase is much higher than the growth experienced in overall applications (0.3 per cent) over the same period.

Table 6. Highest Preference Applications, Main Round 2012-2013

	Jan-12	Jan-13	% change
Agriculture Related Courses ¹	1,895	2,054	8.4%
Total	267,391	268,169	0.3%

Source: Application and Offers data collection (Main Round) DIISRTE, January 2010-2013.

Table 7 shows that Melbourne University received the largest number of applications to study agriculture related courses¹ in 2013. The University of Queensland recorded the highest percentage increase (69 per cent) in 2013. The 2012 and 2013 data are based on main round tertiary admissions centres (TACs) submission data.

Table 7. Highest Preference Applications by university, Main Round 2012-2013

University	Jan-12	Jan-13	% change
Murdoch University	56	67	19.6%

¹ Agriculture related courses (presented in Tables 2, 6 and 7) include the narrow fields of education of Agriculture, Agricultural Science, Wool Science, Animal Husbandry and Agriculture not elsewhere classified.

Charles Sturt University	163	204	25.2%
The University of Adelaide	169	196	16.0%
The University of Queensland	29	49	69.0%
La Trobe University	256	350	36.7%
The University of Melbourne	754	706	-6.4%
The University of New England	98	103	5.1%
The University of Sydney	328	340	3.7%
University of Tasmania	42	39	-7.1%
Total	1,895	2,054	8.4%

Source: Application and Offers data collection (Main Round) DIISRTE, January 2010-2013.

- See Attachment B.
- Table 8 shows the corresponding proportion of males applying for agriculture related courses¹ is 57.3 per cent, with females accounting for 42.7 per cent in 2013.

Table 8. Highest Preference Applications by Gender, Main Round 2012-2013

Agriculture Related Courses	Jan-13	% of share
Male	1,176	57.3%
Female	878	42.7%
Total	2,054	100.0%

Source: Application and Offers data collection (Main Round) DIISRTE, January 2010-2013.