

Agricultural Education in the 21st Century

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‘In the next 50 years we will need to produce
as much food as we have in the preceding ten
thousand years’

Deloitte (2014)

It is not a matter of
predicting the future, but
of being prepared for it.

Pericles (495 – 429 BC)





NEWS FROM THE UNIVERSITY OF TASMANIA, AUSTRALIA

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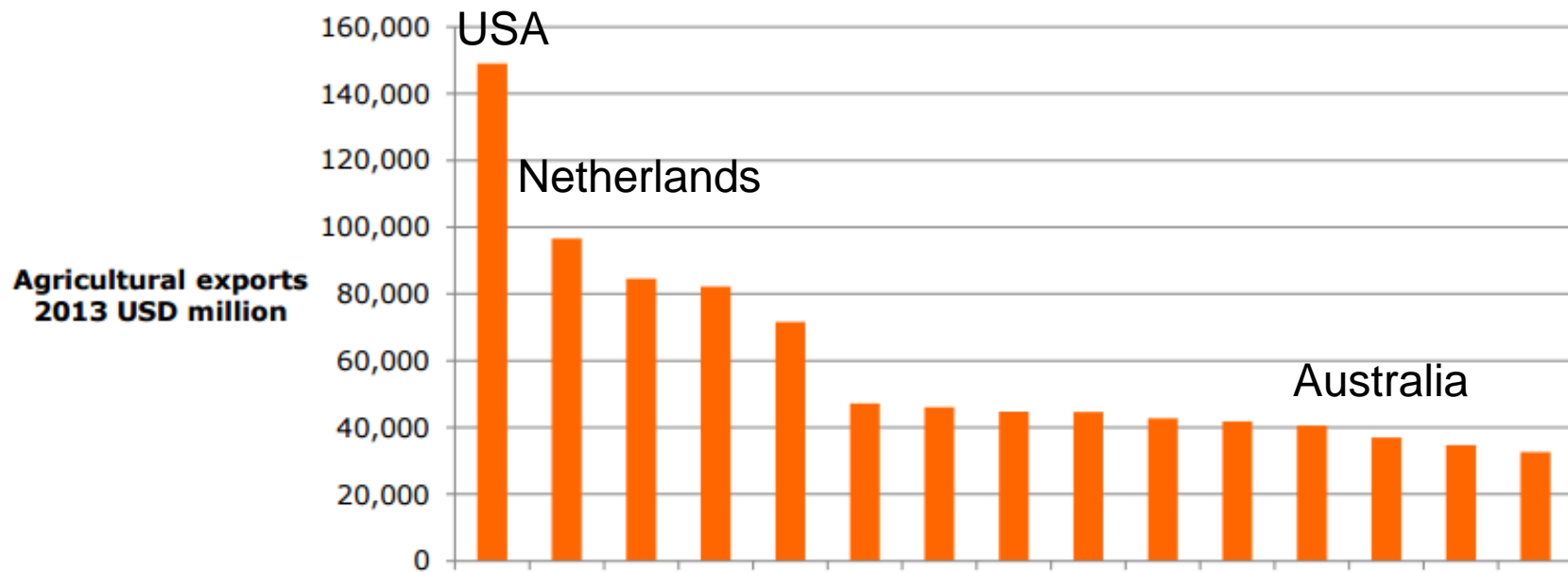
Healthy food out of reach for many

Despite growing some of the best produce in some of the most fertile land in the world, many Tasmanians struggle to access healthy food because of where they live.

This is the paradox recent research conducted by the University of Tasmania has confirmed.

The Tasmanian Healthy Food Access Basket (HFAB) Survey examined the availability, cost and affordability of a basket of healthy food in Tasmania for different sized families living in different areas of the State.

Who are the biggest agricultural exporters?

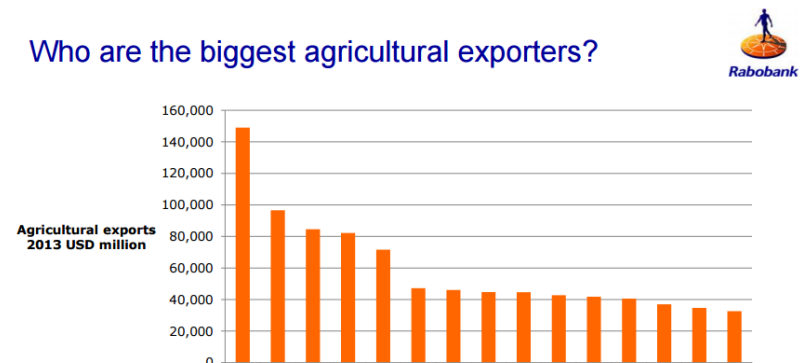


The Netherlands is an interesting country ...

- 17 million people living in an area about 2/3 the size of Tasmania
- Much of the land use is urban, but there is a surprising amount of open space and even the odd National Park
- The total value of Dutch agricultural exports in 2012 was over a \$100 billion, about 3 times more than Australia's exports and about 100 times more than Tasmania's exports.
- Direct comparisons are always flawed. For instance, the Netherlands has 150 million consumers within a 700km radius



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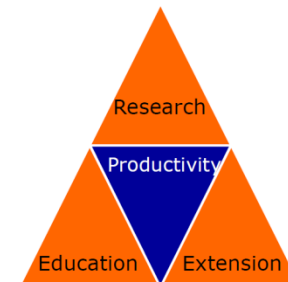


The Dutch success is based on 'the golden triangle'

- a long tradition of successful PPPs involving agricultural research, teaching and extension made Dutch agricultural sector to become one of the most efficient and productive in the world.
- The Dutch are proud of their University and their farmers, they value education and embrace research
- They have an entrepreneurial approach that is driven by continuous at all levels



The golden triangle
driving increased competitiveness



So we have problems ...

Deloitte labelled 'Agribusiness' as 'Australia's forgotten hero', a sector ideally placed to capitalise on a world-wide leap in demand for higher-value food products, but the system isn't working. Why?

- Ag is not regarded as a serious science by our innovation system (e.g. the ARC)
 - Many people still hear 'agriculture' and think 'farming'
 - Farmers and lobby groups often present a poor self-image in the mistaken believe that this will buy sympathy and ongoing support; images of farmers walking of the land or shooting sheep are unhelpful
-

So we have problems ...

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- Policy maker and politicians are reacting to squeaky wheels rather than implementing longterm strategies
 - Industry can't satisfy the demand for a skilled workforce, can't agree what they want/need and is largely unwilling to invest
 - Industry lobby groups are not speaking with one voice
 - The VET sector is underfunded and disengaged
 - Expectations of universities are unrealistic
 - Everybody is blaming somebody else for the problem
-

Yet, with good leadership and strong policy frameworks we could succeed

Australia will never be the 'bread basket' of the world, but we

- can build food systems that are globally competitive and offer reliable, safe and high-quality food products;
- can shape the transformation to our agriculture and food sector in response to 5bn of the emerging middle class, particularly in Asia;
- can assist industry and governments in making the right choices so that agriculture will remain as a strong, resilient and flexible part of the Australian economy.

What does it take?

I think across Australia, we are deficient in 3 essential attributes:

- 1) confidence,
- 2) humility and
- 3) respect

These are the key, inseparable ingredients for *functional relationships* and, ultimately, *partnerships*.



A Short Story about Australia

or: a case of 'lies, damn lies and statistics'

- McColl Report (1991) into agricultural education highlighted a looming shortage of agricultural graduates
- Nothing was done to redress this and graduate numbers continued their decline at least to 2012.
- 16 years after the McColl Report (2007) was published, universities were blamed for the lack of graduates yet industry itself had done little to promote careers in the sector.
- **ACTION:** ACDA was formed as a peak body for agricultural higher education and research and accepted the challenge to do what it could to analyse the issue and facilitate an evidence-based debate.



A Short Story about Australia

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- the official position of Govt was that there were plenty of agriculture graduates and insufficient jobs, diametrically opposed to the views being expressed by industry.
- ACDA collected their own statistics based on their members' graduate data
- Data showed a decline from nearly 900 graduates in 2003 to less than 450 graduates in 2012.
- Yet, the employment market was buoyant with up to six jobs for every graduate, although this has softened somewhat in 2014.



ACTION: ACDA collected and analysed their own data

A Short Story about Australia

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- Why the discrepancy?
- As part of their reporting responsibilities, universities provide student data according to categories called 'Fields of Education' (FoE).
- There are 12 broad FoEs, with 'agriculture, environmental and related studies' being one of them (FoE 05).
- This provides insufficient granularity for the questions asked.
- In 2010 about 2200 students graduated in FoE 05; only 413 of those were actual agricultural graduates



<http://www.abs.gov.au/ausstats/abs@.nsf/0/E7779A9FD5C8D846CA256AAF001FCA5C?opendocument>

Decline in graduate completions for 'Field of Education 05' and for agriculture from 2001 to 2010 (Pratley, 2015b)

Source	2001	2010	% decline
Undergraduate completions, FoE05	2991	2207	26
Undergraduate agriculture completions	886	413	53

This was a wake-up call for everyone

Universities are now leading the push towards greater professionalization of the industry

- a focus on education and training
- a desire to improve the image of the sector
- a move towards social licence and greater engagement with future opportunities, challenges and needs
- quality in higher education must be considered more formally
- In line with other disciplines we developed Learning and Teaching Academic Standard (LTAS) Statements as reference points in the national standards framework developed by the Higher Education Standards Panel



A new, consultative approach to curriculum development

**Development of national tertiary-level
education standards for agriculture
that align the expectations of
graduates, employers and universities**

- define the nature and extent of agriculture
- outline the key threshold learning outcomes (TLOs)
- inform course development and quality assurance in Australian universities that teach agriculture.
- national engagement with industry, graduates and academics, including 19 consultation workshops and an online survey that was available via the AgLTAS project website



The AgLTAS statement

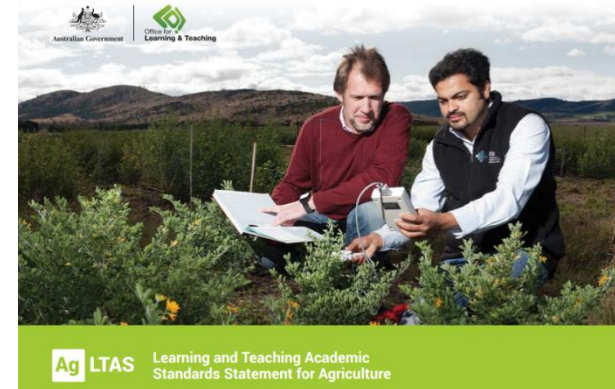
is a description of the nature and extent of the discipline as well as a set of TLOs that closely reference those for the Science discipline

- Knowledge
- Understanding
- Inquiry & Problem Solving
- Communication and
- Personal and Professional Responsibility.

This represent what a pass-level graduate in agriculture should know, understand and be able to do upon graduation.

Acuna et al., 2014. [Academic, industry and student perspectives on the inclusion of “vocational knowledge” in a ‘learning and teaching academic standards statement’ for agriculture](#). Journal of Learning Design, 7(2).

<http://www.agltas.edu.au/>



About

The Learning and Teaching Academic Standards Statement for Agriculture is a project deliverable from a consensus approach to defining standards for learning outcomes and informing curricula design for agriculture. Support for this project has been provided by the Australian Government Office for Learning and Teaching. The views expressed in this document do not necessarily reflect the views of the Australian Government Office for Learning and Teaching.

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Hopefully we have turned the corner

Since 2013 enrolment in ag have increased. This year by between 10 to 40% across all universities, including NZ.

- The role of a university in providing tertiary education in agriculture has become multi-faceted demanding maximum flexibility from staff, curriculum developers, industry and students.
- We can raise to this challenge if we are willing to cooperate and show agility in the way we engage with each other in order to address the issue of highest societal importance: how to sustainably and profitably feed a growing population.



Take-home messages

There is a big difference between 'I Can't' and 'It just isn't a high priority'

- The sooner we recognise that we have every reason to be confident about the agriculture and food sector in Australia,
- the sooner we acknowledge that none of us has all the answers,
- the sooner we begin to respect each other's' expertise and abilities to co-contribute,
- The sooner we will be able to create our own 'golden triangle', where research, education and practice will come together and create much needed PPPs that can solve future problems before they even arise.



