

**House of Representatives Standing Committee on Agriculture and Industry
Inquiry into Agricultural Innovation**

NOTE: The comments below are the personal views of Professor Michael J. D'Occhio and are absolutely not intended to represent my employer The University of Sydney.

The comments below refer specifically to Terms of Reference 3. In my opinion the comments are fundamental in addressing barriers to the adoption of emerging technology.

SCIENCE-INDUSTRY PARTNERSHIPS / PROCESSES / IP

1. Australia is lowly ranked among OECD countries in science-industry partnerships.
2. Australia simply has not done enough to address science-industry engagement and partnerships to facilitate knowledge and technology transfer.
3. Government does not invest sufficient in this area and agriculture does not appear to be a priority with ARC Linkage-projects and other funding schemes.
4. Institutions and government need to support more institution-industry mobility and secondments ; there should also be more industry focused PhD scholarships.
5. Government needs to develop more programs that teach primary producers to be innovators and encourages them to be more receptive to change.
6. Institutional and government processes are outdated, inefficient and slow and serve to discourage, rather than encourage, science-industry engagement.
7. IP is important but often there is a disproportionate (and often misplaced) focus on IP by institutions and industry; institutions, industry and government need somehow to achieve breakthrough to ensure that more taxpayer money producers industry and public benefit.

CAPITAL INVESTMENT

1. The adoption of new and emerging technology will require capital investment; it has been suggested that around \$600 billion will be required in infrastructure and other investment if Australia is to optimally benefit from the Asian Century; Australia does not have the capacity for this scale of investment; we now have a government for the 21st century and perhaps this could be tested in the agriculture-Asian century nexus.
2. Foreign capital investment in 'new' agriculture will be required and there needs to be a shift in the way government, industry and the community look at this.
3. New agriculture investment models will be part of the next phase of knowledge and technology adoption.
4. Many agricultural enterprises are asset rich but cash poor which makes it difficult to invest in innovation.
5. The debt to equity ratio is getting worse for many agricultural enterprises which also makes investment in innovation difficult; this needs to be addressed and somehow there needs to be a greater return to agriculture.

OTHER ISSUES

1. Does Australia have a serious shortage of good agricultural scientists with good ideas or is the issue/problem that not enough good science is taken to industry because of the above issues?
2. Australia may not need more agricultural scientists *per se* but rather more graduates who work in agriculture (there is an important distinction here); in this regard, agricultural advances in the future will include engineering solutions as much as 'agricultural' solutions; the Australian Centre for Field Robotics at The University of Sydney provides a good example of this.
3. Australia will continue to benefit from global investment in agricultural R&D; Australian scientists are well linked into global research but this needs to be increased; and with more industry participation.
4. The overarching need is to achieve greater efficiency in agricultural systems – identifying how to do this is the next level.
5. With regard point 4, a major challenge is to identify areas of R&D investment that are particularly relevant and important in an Australian context and which will confer a competitive advantage; and to then invest in R&D at the necessary level and at the same time drive science-industry partnerships.