Dr Michael Spence
Vice-Chancellor and Principal

09 August 2013

Ms Lucinda Corrigan
Chair, Agriculture Industry Action Plan Taskforce
Agriculture Industry Action Plan submissions
NSW Department of Primary Industries
PO Box 1386, Bathurst NSW 2795
By email: agriculture.iap@dpi.nsw.gov.au

Dear Ms Corrigan,

Agriculture Industry Action Plan Issues Paper

On behalf of the University of Sydney, and in particular our faculties of Agriculture and Environment, and Veterinary Science, I am pleased to provide the attached submission in response to the Agriculture Industry Action Plan Issues Paper, released in June 2013 by the Department of Primary Industries (“DPI”).

Agriculture is an iconic industry in Australia and remains an important part of the economy. The sector is estimated to contribute some $46 billion to the national economy annually, of which about two-thirds is exported. In 2010–11 there were 306,700 people employed in agricultural industries, with 46 percent of these self-employed (predominantly farm owners). While this equates to a relatively small population, the sector is vitally important for the economy, our social fabric, and in securing Australia’s future supply of food and fibre.

The University of Sydney’s mission is to conduct education and research of the highest quality for the benefit of Australia and the wider world. We know that many of the most pressing challenges facing Australia and humanity lie in areas such as food and water security; global warming and carbon sequestration; biofuels; environmental sustainability; and animal borne diseases. These challenges also present opportunities for Australia and NSW, but we will only capitalise on them by maintaining a strong capacity for knowledge generation and innovation in our agricultural industries. The University of Sydney is proud of the contribution its staff and graduates have made towards addressing these and other challenges in NSW, Australia, Asia and globally over many decades. We are committed to continuing to underpin the sector in NSW through the pursuit of education, research and research training of the highest quality in close cooperation with governments, rural industries and communities.

We see significant potential to enhance the integration of our agricultural research expertise with NSW DPI for mutual benefit. We are interested, for example, in exploring with DPI, other universities and industry stakeholders, the potential for NSW to strengthen its agriculture research capacity through the adoption of overarching collaborative models such as those
common in the United States and recently adopted by the Tasmanian Government in partnership with the University of Tasmania.

We are particularly keen to improve levels of cooperation and opportunities with NSW DPI through flexible staffing arrangements, training, student and staff placements and by enhancing the way we share facilities and expertise. Specific proposals which we look forward to discussing with the Taskforce and DPI as the Action Plan is developed include:

- establishing a joint institute for food security and biosecurity with joint appointments, career pipeline funding and reduction of barriers to collaboration
- providing support for research career development at an individual and institutional level
- developing partnerships in professional placements with NSW DPI and the Local Land Service
- pursuing discussions for the strategic co-location and shared use of University and DPI facilities and resources
- securing the financial viability of valuable research facilities such as the Australian Centre for Agricultural Health and Safety at Moree, which we believe make important, yet often under-recognised, contributions to the strength and productivity of the sector in NSW.

We look forward to engaging with NSW DPI and other stakeholders as the Agriculture Industry Action Plan is developed and refined.

For further information or advice, in the first instance, please contact either the Dean of our Faculty of Veterinary Science, Professor Rosanne Taylor (02 9351 6936, vetscience.dean@sydney.edu.au), or the Dean of Faculty of Agriculture and Environment, Professor Mark Adams (02 8627 1010, agriculture.dean@sydney.edu.au).

If you would like to discuss these matters with me personally, please do not hesitate to contact me directly on the number provided above, or by email: vice.chancellor@sydney.edu.au.

Yours sincerely

(Signature removed for electronic distribution)

Michael Spence

Appendix  University of Sydney submission to the NSW Department of Primary Industries’ Agriculture Industry Action Plan Issues Paper
University of Sydney submission to the NSW Agriculture Industry Action Plan Issues Paper, August 2013

Summary

The University of Sydney is an educational, research, and training institution with a strong presence and commitment to all aspects of NSW Agriculture and agricultural research. Through its faculties of Agriculture and Environment and Veterinary Science, its education and research centres and facilities located across the state, and through its collaboration with Rural Research and Development Corporations (RDCs) and other organisations, the University makes a significant contribution to NSW’s agriculture sector. The University and NSW Department of Primary Industries (DPI) and its predecessors have derived great mutual benefited from diverse interactions over many years. Examples include:

- Successful partnerships in agricultural research, innovation, technology transfer, diagnostic services, extension and training between our University and the NSW Agriculture Department extend back to the earliest years of both organizations. These partnerships have underpinned the remarkable growth, diversification and internationally recognized success of NSW agricultural industries over the past century. Our shared aspirations for advancement of productive, competitive, socially responsible and sustainable food and fibre production have driven numerous linkages at the personal and organizational level, benefitting our state. Working together, the capacity to identify critical industry issues, harness resources from government, industry and universities to find solutions, and rapidly disseminate solutions to the farm has been critical in our successes in producing the highest quality food and fibre, protecting animal welfare, and sustaining our fragile environment.

- NSW Primary Industries and the Faculty of Veterinary Science have more than 50 years of close interactions with the dairy and poultry industries through the Dairy Research Foundation (DRF) and Poultry Research Foundation (PRF), with the transfer/extension of cutting-edge research in partnership with these industries. Arguably the NSW dairy and poultry industries have undergone some of the most rapid structural and operational changes with their intensification in the past 3 decades. They are highly reliant on innovation, integration of new technology, and efficiencies in utilization of key resources such as feed and labour to compete more effectively in the future, and these developments depend upon scientific research. Our faculties are also involved in negotiations with processors and retailers regarding supply of livestock, livestock feeds and livestock products. In addition, the Faculty of Agriculture is the principal research provider for the Grains research and Development Corporation (GRDC) and the University has research projects with more than five RDCs and four Collaborative Research Centres.
• We have strong research and diagnostic links with DPI NSW at EMAI through the NSW Centre for Plant and Animal Biosecurity, which was established in 2007 and has a jointly funded PhD position. Our proximity (although unfortunately not co-location) in the plant and animal health research precinct of Camden (including NSW DPI’s recent investment of $56m to produce a world-class isolation and diagnostic facility for biosecurity) is mutually advantageous for research and teaching of animal and veterinary bioscientists in pathology, diagnostic techniques and biosecurity. The University is seeking to expand this MOU with the express intent to share/second staff and facilities to promote closer collaboration in research and training.

• A decade long partnership provides critical capacity building through education of some of the state’s best and brightest students enrolled in veterinary and animal bioscience programs in the Faculty of Veterinary Science. Students build expertise in agricultural policy, such as animal biosecurity (e.g El outburst, Hendra) and competence in disease investigation and management through extra-mural rotations of final-year veterinary students with LHFA veterinarians, in abattoirs and in diagnostic laboratories operated by NSW DPI. This, combined with our undergraduate and postgraduate programs on livestock, management, welfare disease, food safety, biosecurity and laboratory investigation across all livestock, companion animals, wildlife and aquaculture, provides a capable, “practice ready” group of veterinarians, research and animal scientists ready to assist with existing and emerging challenges to the state’s agricultural sector.

• The Faculty of Veterinary Science also provides residential and on-line postgraduate masters courses in veterinary public health management, animal science and wildlife health and management to train the policy-makers of the future through exposure to, and networking with leading experts including from NSW Agriculture.

• Both faculties have productive research and development projects with NSW DPI, such as “Future Dairy” (9 years), joint projects from RDCs such as AWI, MLA, DA and RIRDC, Cooperative Research Centres (CRCs such as Dairy Futures, Poultry and Pork ) and ARC linkage grants with rural industry partners such as Bayer and Zoetis.

The University has noted with considerable concern the erosion in NSW's competitive position in agriculture R&D and in particular in animal production over the past 5 years, relative to our flanking states, Queensland and Victoria. Where NSW has remained static in animal production, neighbouring states (including SA) have leapt ahead. It is no accident that both Victoria and Queensland have enjoyed far higher rates of co-investment in innovation by their governments through funding for their agriculture or primary industry departments - university
research facilities, staff and initiatives, focused on the animal industries. SA appears set to follow.

High level, strategic investment in animal production research has been in significant decline in NSW for a decade, with most investment flowing to improved diagnostic, surveillance and biosecurity capacity. Industry leaders, including those in the RAS, animal industry associations, breed societies and industry research and development associations frequently lament the decline in interest and engagement of the next generation in agricultural science at school, high school, university and higher degree level. The career paths, once present in NSW government agricultural services are in decline, with diminishing opportunities for research, innovation and inspired problem solving that will be much needed to underpin a stronger future. This decade long flight from investment in innovation through research and training in animal production is a trend that the Industry Action Plan should remedy, if a change in the worrying decline in competitiveness of NSW animal production is to be addressed.

Notwithstanding recent trends and challenges, we see significant potential for NSW’s agriculture sector to be strengthened over the long term through the establishment of new structures to support genuine collaboration between DPI and other government agencies, universities and the industry. We are keen to engage with the Taskforce and DPI about the directions that the Industry Action Plan should take, and in that context provide the following responses to the Issues Paper’s consultation questions.

Specific responses and suggested solutions

In responding to the IAP issues paper, the University also includes chemical and feed companies and retailers of plants and livestock and their products in the definition of “Industry”. These stakeholders also fund research, advertise and provide opinion in the public arena.

What do you see are the key issues for the (agricultural: livestock and plant) sectors?

1. A principal issue is establishing unified and proactive advocacy for agricultural industries. This is evident from the public disputes within industry sectors which also enables particular groups to direct attention to animal production activities, one sector at a time and affect sustainability and profitability. This is especially obvious in the area of animal welfare and milk price negotiations. In addition, each of the 14 RDCs operate for the benefit of its stakeholders, but the looming threats to the profitability and sustainability of agriculture are multi-sectoral. An integrated approach is needed to:

- promote the sector with a single voice and to instigate accountability for benchmarking and recording Industry best-practice across all sectors to upgrade outdated practices, reduce chemical use and implement integrated management programs;
• provide a joint approach to consider and counter the major overarching threats to Industries outlined in the IAP paper including biosecurity, climate change, resource use and food security;

• provide a counterbalance to other vested interests to influence consumer perspectives and social media as well as respond to retailer claims and advertising. The power of unification (of producers, conservationists and rural communities) was amply demonstrated in the recent farmland vs CSG debates.

• make representation to government on behalf of each and every sector for realistic cost-sharing and support for innovation. The extractive Industries already lobby together (mining tax).

There is a challenge for DPI NSW to instigate, develop, integrate and lead this effort and that will require the identification, development and implementation of appropriate collaborative strategies (see below). To “de-politicise” DPI NSW would enable the provision of greater “frank and fearless” advice to ministers. In addition, DPI is currently caught between being the regulator (and therefore is preoccupied with ownership of information) and its future role in assessing information to develop appropriate policy.

2. A need to maintain access to markets. This means food safety and disease control for domestic and international markets. Given the declining DPI staff numbers, we need to get smarter and more efficient. The way to do that is to increase the level of training of those working within the primary industries, and to adopt new technologies such as smart databases, and reporting technologies, precision farming methods and diagnostics.

3. Production efficiencies to maintain the profitability of each sector as labour and overhead costs increase. The means development and adoption of technologies which reduce the impact of profit-limiting practices in each Industry and enhance business skills.

4. Improving levels of cross-portfolio coordination of policy and strategy affecting the agricultural sector in NSW. For example in the area occupational health and safety, there is much more that can be done to reduce incidences of death and injury in agricultural occupations through the research and translational work of our Australian Centre for Agricultural Health and Safety at Moree. While over the last 27 years this unique centre has contributed substantial improvements to health and wellbeing of people working in state’s agricultural sector, and nationally, its future viability is in question due to funding uncertainty. We believe the contribution of the centre is vital for securing the health and productivity of the NSW agricultural sector, and we wish to see it sustained into the future through partnerships with the NSW and Federal governments, industry and the community.

5. Consumer perceptions, particularly driven by special interest groups and social media in areas such as animal welfare and sustainability.
6. A need for greater innovation and capacity building to support the progress required in these areas above. While national research priorities for the animal industries benefit NSW, the context and issues faced by the state’s farmers require a well-articulated, NSW DPI-led strategy and investment.

**How can your industry respond to enhance the competitiveness of the sector?**

Universities are centres of research excellence and educational expertise. The University of Sydney currently graduates more than 250 agricultural, animal and veterinary scientists annually and conducts more than $25m of research relevant to the agricultural and livestock industries in the faculties of Agriculture and Veterinary Science alone. In addition the faculties employ more than 150 postgraduate researchers at any time and offer a range of masters and postgraduate courses. To improve training opportunities and enhance the transfer of technology, we wish to be able to forge strong partnerships with DPI NSW and Industry through appropriate agreements, as well as provide access to postgraduate training courses, especially around public health management.

Declining investment in staff within DPI (the new LLS structure aims to trim $20m of “recurrent” expenditure from DPI), requires new ways of forming meaningful, long lasting partnerships to generate and access new information. Universities have a large role to play. For the University of Sydney, this involves all aspects of biosecurity space but also innovative farming practices across all industries.

**How can governments (whether State, Commonwealth or local) act to enhance the competitiveness of the sector?**

Strong and sustained investment in the sector is needed at a State and Federal level (hopefully through consensus and co-investment) to halt the decline in spending on agriculture education, research, innovation, development and extension. Profitability and reducing costs is a major factor for many livestock industries and the adoption of new technologies (such as robotic milking) is often beyond the “native cunning” of farmers to implement. In NSW, a more flexible career structure would enable DPI NSW staff to:

- be seconded into Universities for a period to gain direct access to research and training as well as information sharing, particularly in areas of epidemiology, surveillance and public health management;
- take up joint appointments, join cross-institutional research groupings, engage with undergraduate students and achieve the benefits of greater critical mass focused on animal production and health issues, free from the current considerable complexity and financial penalties involved with working across institutions;
- participate in research programs through grants such as ARC linkage and co-supervise higher degree research (HDR) students;
- enroll in postgraduate training courses and other staff development to enhance skills for technology transfer, disease investigation and extension.
What are the opportunities that the sector can exploit over the next decade?

As mentioned previously, to develop a unified voice for the agricultural and livestock industries to promote its image and importance. There is also considerable scope to enhance the scale, quality and impact of the State’s agriculture research, education and innovation systems through the establishment of new structures and funding arrangements to support collaboration between DPI, universities and the industry.

What are the enablers for industry to ensure the sector’s growth?
What are the enablers for government to ensure the sector’s growth?
What is stopping the sector in NSW from taking up these opportunities?

The principal obstacle to initiatives for effective collaboration to realize opportunities for agriculture is the need for DPI NSW, universities and other key stakeholders to work with each other to develop and implement appropriate collaborative strategies. Collaboration, throughout the past century, enabled porosity with a steady two-way flow of people, ideas, shared goals and resource sharing that energized and enabled rapid progress. This porosity has been eroded both by strategy (a move away from animal production as a focus for NSW DPI) and by operational decisions (that constrain institutional cooperation due to cost and administrative complexity).

There is also a need for the government, university and farm sectors to engage with retailers and processors across the supply chain to appreciate their respective positions and drivers and seek to work towards common goals and approaches for the large challenges such as resource use and food security/quality.

As mentioned above, many agricultural industries need to develop a unified voice for their respective industry, which will require articulate, informed leaders, but must also seek to establish an overarching single voice for the whole sector on key issues, particularly animal welfare and environmental responsibility. We do not believe that the committee proposed by the federal government to oversee and regulate the RDCs will be appropriate for this purpose.

What are some of the low cost solutions that industry can do in the short term?
What are some of the low cost solutions that government can do in the short term?

The University of Sydney is committed to supporting the NSW agricultural industry to the maximum extent given our funding and operational limitations. We see significant potential to enhance the integration of our agricultural research expertise with NSW DPI for mutual benefit. We are interested in exploring with DPI, other universities and industry stakeholders, the potential for NSW to strengthen its agriculture research capacity through the adoption of overarching collaborative models such as those common in the United States and recently adopted by the Tasmanian Government in partnership with the University of Tasmania. The NSW Government should establish a high level collaborative taskforce to work with DPI,
industry and universities to investigate the desirability and feasibility of NSW making a strategic shift to this type of model. It should also seek to foster and drive innovation through research and the translation of research findings, and through education to enhance productivity and sustainability.

We recommend that the Government consider strategies such as:

- establishing a “virtual institute” for food security and biosecurity with joint appointments, reduced administrative barriers and seed funding for postdoctoral scientists, research students and projects focused on key issues for NSW animal and plant biosecurity and animal production
- achieving greater utilization of the high quality facilities at NSW DPI and its partner universities available for research, and reward and incentivize successful collaborations (research output, quality and impact)
- removing barriers that currently prevent long-standing partnerships from being taken to the next level - particularly the administrative complexity and cost shifting that impedes promising collaborations
- planning for the longer term, as short term priorities and constant changes to NSW DPI research directions undermine success. It should ensure long term research leadership, aligned to institutional priorities and expertise, is in place
- reversing the considerable loss of leading and promising scientists from the NSW DPI research institutes
- creating a research and innovation pipeline, in partnership with universities and the rural research and development corporations, to ensure a strong flow of well-trained agricultural and animal scientists for the future, with a commitment to NSW Agricultural industry issues.

We also need to ensure the Local Land Services include capacity building in their briefs as they are rolled out. The LLS professional advisory staff will benefit from engagement with final year veterinary, animal and agricultural science students undertaking public practice placements. The benefits are mutual with LLS building capacity for surveillance, land and water management among graduates and identifying promising future staff, and students embracing existing problems they encounter during their placements with a range of new approaches, including use of diverse technologies and communications. Ongoing contact with near-graduates is well recognized as a major driver of innovation and uptake of new technology in a range of scientific and health industries where the pace of change is rapid.
What actions or roles are you prepared to undertake to assist in positioning the sector in NSW for future growth?

The University of Sydney wishes to support and promote the NSW agricultural industry through optimal integration of its research and teaching expertise with NSW DPI and by energising its existing links with the agricultural sector. We particularly seek to enhance cooperation and opportunities with DPI NSW through flexible staffing arrangements, training, student and staff placements and optimal use of shared facilities.

Specific proposals include we look forward to discussing with the Taskforce and DPI include:

- considering the potential benefits of NSW adopting a new more collaborative model for the provision of public agricultural research and innovation services, based on the arrangements common in the US and recently adopted by some Australian states
- establishing a joint institute for food security and biosecurity with joint appointments, career pipeline funding and reduction of barriers to collaboration
- providing support for research career development at an individual and institutional level
- developing partnerships in professional placements with NSW DPI and LLS
- pursuing discussions for future co-location and shared use of facilities, resources
- securing the financial future of valuable research facilities such as the Australian Centre for Agricultural Health and Safety at Moree.

The Division of Natural Sciences (Faculties of Science, Agriculture and Veterinary Science) at Sydney University has a skill set which identifies and addresses the major challenges to the future of the agriculture sector in NSW. We wish to foster stronger links with industry sectors (particularly NSW DPI) to provide training opportunities, build capability at the scale necessary to mitigate both the short and long-term threats that face the sector, enable NSW to seize productivity and market opportunities as they arise, and enable the seamless development and extension of research into NSW and national agricultural sectors.

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