Submission No 27

INQUIRY INTO ASPECTS OF AGRICULTURE IN NSW

Organisation: NSW Department of Primary Industries

Name: Mr Barry Buffier

Position: Director-General

Telephone: 6391 3100

Date received: 27/08/2007

New South Wales

DEPARTMENT OF PRIMARY INDUSTRIES

Ms Rachel Callinan
Director
Standing Committee on State Development
Legislative Council
Parliament House
Macquarie Street
Sydney NSW 2000

Dear Ms Callinan

On 21 August 2007 I forwarded to you the Department of Primary Industries' submission to the Standing Committee on State Development Inquiry into Aspects of Agriculture in NSW.

That submission was subsequently amended and withdrawn. Please accept the attached submission as the Department's official submission to the inquiry.

Please contact Mr Stewart Webster, Manager, Industry Policy, on 6391 3453 if you require further information regarding the content of the submission.

Yours sincerely

for **B D BUFFIER**
DIRECTOR-GENERAL

24. 8. 07

Level 6, 201 Elizabeth Street SYDNEY NSW 2000 PO Box K220 Haymarket NSW 1240
Telephone (02) 8289 3999 Facsimile (02) 9283 7201 Website www.dpi.nsw.gov.au

LEGISLATIVE COUNCIL
STANDING COMMITTEE ON STATE DEVELOPMENT

Inquiry into Aspects of Agriculture in NSW

Submission by
New South Wales
Department of Primary Industries

August 2007

Contents

1 Introduction

The NSW Department of Primary Industries' (DPI) submission to the Standing Committee's Inquiry into Aspects of Agriculture consists of four sections. Section 1 contains introductory comments about the environment in which agriculture operates and those factors that have been important in explaining the sector's performance to date. Section 2 contains information on the contribution of agriculture to the NSW economy. Section 3 contains a discussion of certain potential impediments to the growth of agriculture in NSW and, finally, Section 4 outlines how DPI's information, education, Research & Development (R&D) and regulatory activities build 'capacity' within the NSW agricultural sector.

The focus of the Inquiry on addressing impediments to growth of the agricultural sector aligns closely with many of the activities of DPI. For example, DPI's vision and key result areas require it to contribute to the strong economic performance of primary industries, while at the same time helping those industries operate in accordance with sustainable development principles, ensuring they have appropriate access to natural resources, and helping them to manage key risks in areas such as bio-security and natural disasters.

DPI identifies key impediments to the growth of agriculture in NSW after first considering the broader environment in which agriculture now operates, as well as the productivity 'drivers' that have enabled the sector to perform within that environment.

The operating environment, for example, is one characterised by:

- ongoing climatic variability, with the added complexity of climate change;
- increasing community concerns about the social and environmental standards by which resource based industries operate;
- increasing resource access pressures and the need to compete for scarce water and land resources; and
- the ongoing challenge of reform in international commodity markets.

Key drivers of the sector's productivity performance have been technological innovation driven by research and development, levels of farmer education and policy reforms that have exposed agriculture to market based input and commodity prices.

Consistent with these findings, issues identified by DPI in this submission include the need to:

1. maintain and strengthen existing Research, Development & Extension (RD&E) efforts particularly in areas such as sustainable farming systems, water use efficiency, drought management and climate change;
2. ensure appropriate access to natural resources;
3. stay abreast of international market developments and to identify more innovative ways of influencing the policy settings of key trading partners; and
4. develop and maintain an increased awareness of the regulatory compliance burden on agriculture and continue to reduce red tape and pursue innovation in regulatory design.

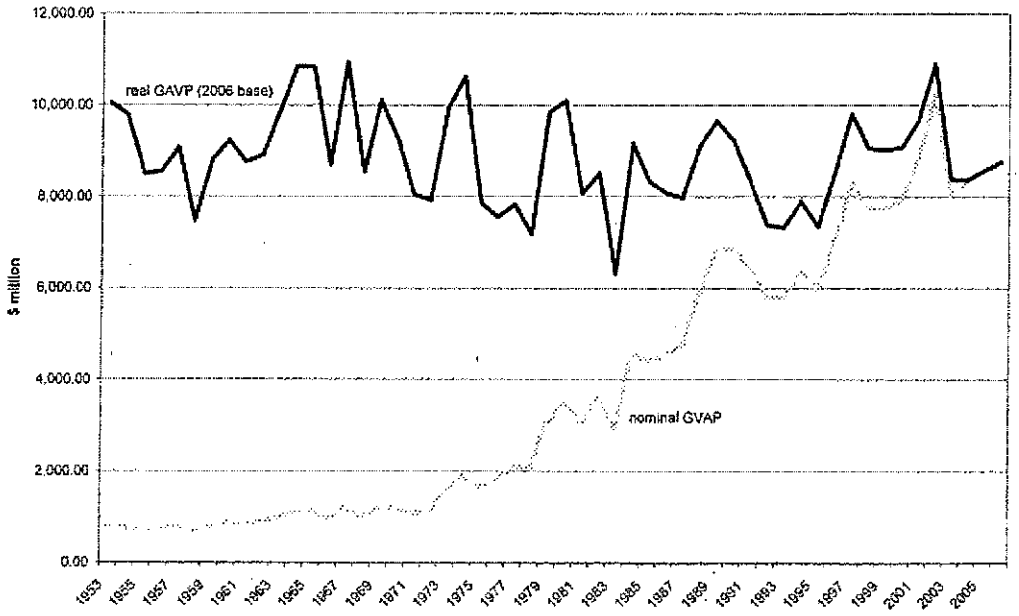
2 The Contribution of Agriculture and Agricultural-based Products to the NSW Economy.

2.1 The Market and Non-Market Contributions of Agriculture

The production and processing of agricultural commodities comprises a significant proportion of economic activity in New South Wales. State agricultural commodity production of around $9 billion in 2005-06 represents around 2.8 per cent of Gross State Product and agriculture directly employs around 100,000 people, or 3 per cent of the NSW workforce. When further processing is taken into account, production and processing of agricultural commodities in New South Wales accounts for around 6.1 per cent of GSP and agriculture employs about 5.6 of the NSW State workforce.

Figure 1 shows the gross value of agricultural production (GVAP) in New South Wales between 1953 and 2006 in both nominal and real terms (adjusted to 2006 dollars). The primary feature of the data is that real State GVAP has remained relatively steady at between eight and ten billion dollars over the period, although a downward trend is discernable from the early sixties to the early eighties, followed by an upward trend to the present. The effects of major droughts on GVAP are also evident, with significant declines recorded around 1982, the early 1990s and from 2001.

Figure 1: Real and Nominal Gross Value of NSW Agricultural Production

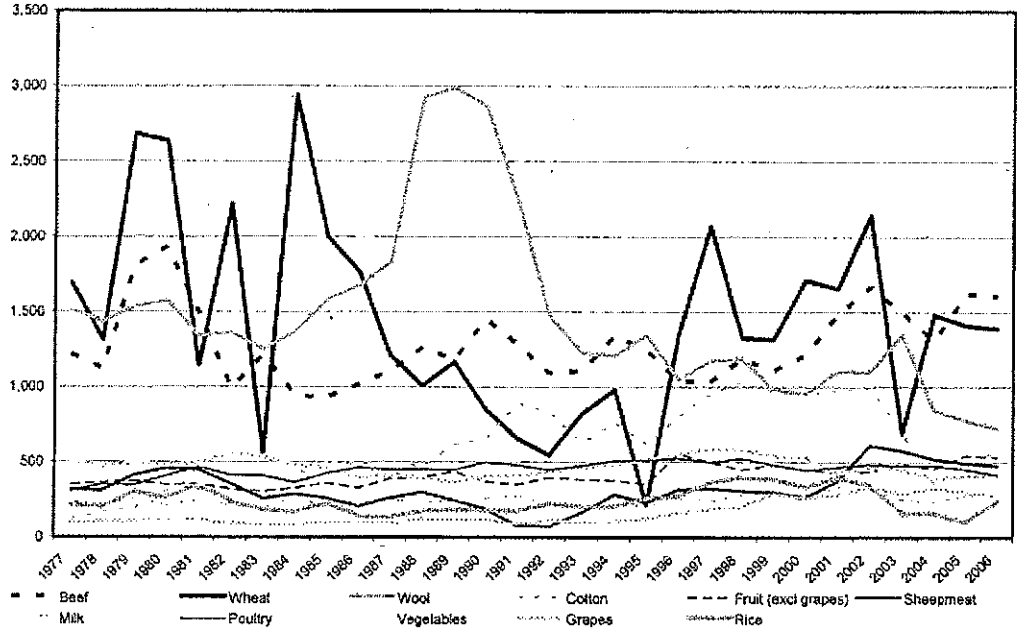


Source: ABS (various)

Figure 2 shows the real gross value of selected agricultural commodities produced in New South Wales between 1977 and 2006. High volatility is the predominant characteristic of this data, with the value of most commodities fluctuating with seasonal and price variations through time. The effect of drought, particularly the drought

commencing in 2001, is pronounced among cropping commodities and particularly on the value of cotton and rice produced, both of which rely on irrigated production systems.

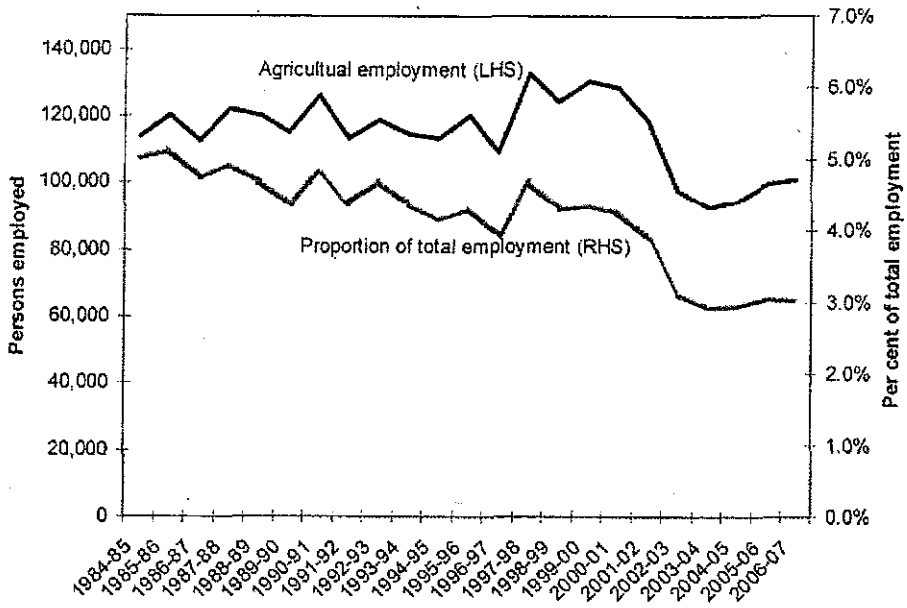
Figure 2: Real Gross Value of selected NSW Agricultural Commodity Production



Source: ABS (various)

The effect of the drought on the number of people employed in NSW agricultural industries is equally apparent, as shown in Figure 3, which also demonstrates that prior to the drought, employment in the State's agricultural industries had been increasing, albeit at a rate less than the increase experienced in the rest of the economy. Consequently, agriculture's share of State employment has been declining over the long-term.

Figure 3: Employment in NSW Agricultural Industries 1984-85 to 2006-07*



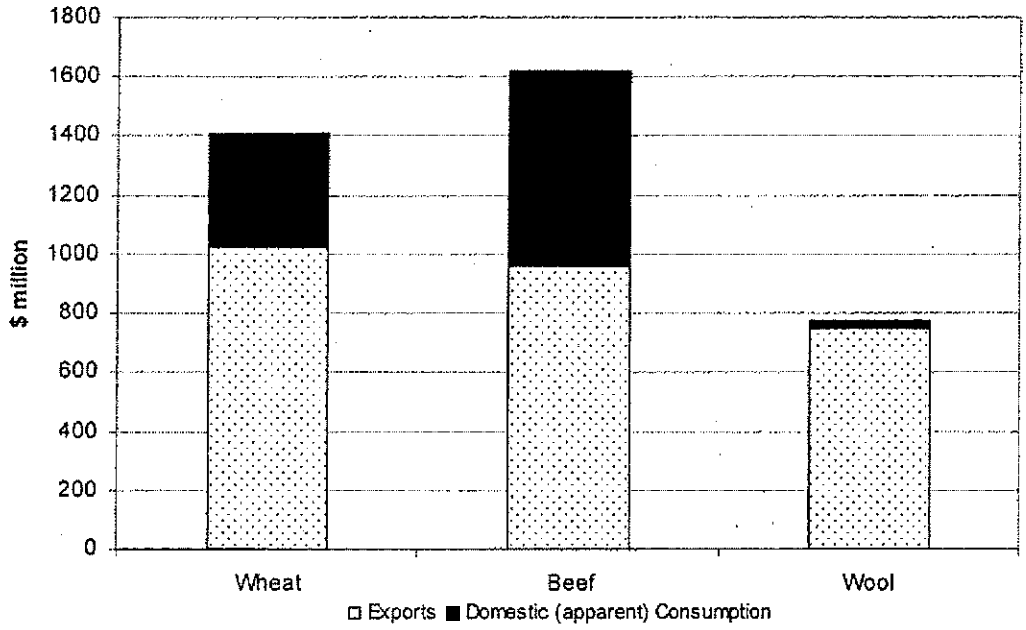
Source: ABS (2007)

When considering the contribution of agriculture to the New South Wales economy, there are a number of factors that are not always obvious from the statistics. For example, the contribution of agriculture to regional economies is in most areas much more substantial than that to the State economy as a whole.

Agriculture is also a highly export orientated sector that contributes to the nation's trade position to a degree well in excess of its contribution to GDP. While the degree of export orientation varies widely across individual agricultural industries, the major agricultural commodities produced in New South Wales are particularly focussed on export, as shown in Figure 4.

* Includes small numbers of people employed in forestry and fishing.

Figure 4: Export Orientation of the NSW Wheat, Beef and Wool Industries (2005)



Source: adapted from NSW DPI (2007)

Farmers in New South Wales also manage 80 percent of the State's land area, significantly contributing to the maintenance and improvement of the natural resource. For instance, in 2004-05, the proportion of the State's farmers that reported undertaking activities on their holdings to manage native vegetation, land/soil and water NRM issues was 40 percent, 59 percent and 33 percent, respectively. Such activity improves both agricultural productivity and environmental outcomes valued by society.

Furthermore, while New South Wales agricultural production generates considerable direct economic value, the agricultural sector also enhances the profitability of other industries and provides 'well-being' benefits to the broader community through the provision of 'amenity' values, such as picturesque rural landscapes, management of natural resources and the conservation of biodiversity. These amenity services not only contribute to the community's sense of well-being and its culture, they often directly add to the tourism appeal of particular geographic areas. The most obvious example of the latter benefit is the enhanced attractiveness of the State's wine producing regions to tourists arising from the visual amenity value flowing from landscapes dominated by vineyards.

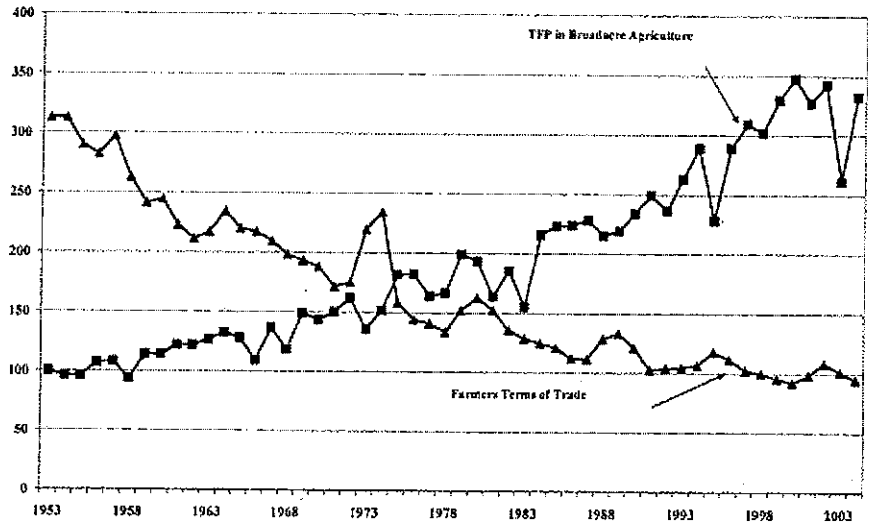
2.2 Agricultural Productivity and Growth

Information about productivity growth in Australian agriculture is summarised in the Productivity Commission's 2005 report 'Trends in Agriculture' and the report by Mullen and Crean (2007) titled 'Productivity Growth in Australian Agriculture: Trends, Source, and Performance'.

The following points are extracts from those reports:

- Productivity growth in agriculture has been strong averaging approximately 2.5 percent per annum over the past 50 years, more than offsetting the continuing decline in farmer's terms of trade. It has, however, been highly variable with large falls reflecting seasonal conditions, as shown in Figure 5.

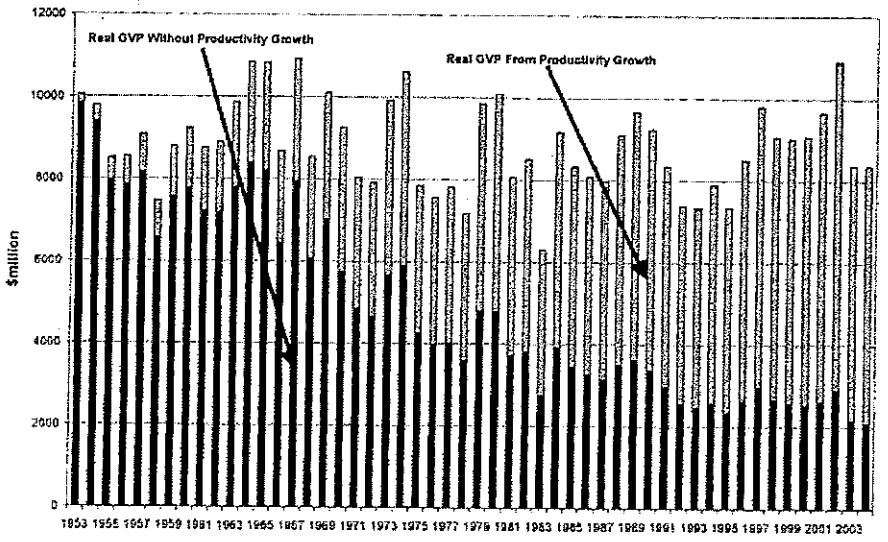
Figure 5: Total Factor Productivity and Terms of Trade for Australian Broadacre Farms



Source: Mullen & Crean (2007)

- Approximately 70 percent of the current real value of Australian agricultural output can be attributed to productivity growth that has occurred since the early 1950s, as shown in Figure 6.

Figure 6: Real Value of Australian Agricultural Output



Source: Mullen & Crean (2007)

- The Productivity Commission (2005) found that for the period 1975-2004 productivity growth in agriculture outstripped growth in all other 'market' sectors of the economy with the exception of the communications sector. The Commission also observed that while the agricultural sector (including forestry and fisheries) accounted for less than 7 percent of gross domestic product in the market sector, its contribution to the growth in Total Factor Productivity for the economy as a whole was 16.4 percent – behind only the manufacturing sector at 31 percent.

- Over the period 1980-2000, productivity growth in Australia has been similar to that in the United States and well above average for agriculture in OECD countries. Within Australia, agricultural productivity growth has been higher for cropping specialists than for livestock specialists.

- Research and development has been found to be a consistent and significant source of agricultural productivity growth, both in Australia and internationally. Other sources of productivity growth include extension, farmers' education, foreign R&D, public infrastructure and economic reform.

- Farm survey studies within the agricultural sector provide further information about the characteristics of farms, regions or industries associated with higher productivity. Key findings include:

    - Farmers relying on cropping for a significant share of their income have enjoyed rates of productivity growth as high as 5.5 percent and more generally have higher rates of productivity growth than those relying on extensive livestock enterprises.

    - Larger farms specialising in cropping in climatically favoured regions that were run by farmers with high education levels who engaged consultants and participated in farmer groups were found to have higher rates of productivity growth (Alexander and Kokic 2005).

    - Productivity growth in the sheep industry, as estimated by ABARE has been 1 percent or less in recent decades. Beef specialists have experienced higher productivity that sheep specialists, but less than that of cropping specialists.

    - Productivity in the dairy industry is estimated to have grown by 1.5 percent per annum (see Kompas and Tuuong Nhu 2004) but little is known about the productivity performance of other intensive animal and plant industries because ABARE farm survey data is not routinely collected for those industries.

The NSW State Plan priority area 'Growing Prosperity Across NSW' commits the NSW Government to developing strategies to focus Government attention on high wage, high skilled, export oriented industries that have the greatest potential to thrive in NSW in the future.

It is also significant that the State Plan commits the Government to enhancing knowledge and information infrastructure, creating a stable business environment and strengthening the innovation capability of those sectors with a demonstrated capacity for innovation.

Being highly export orientated and characterised by very high levels of productivity growth and innovation, it is apparent that agriculture should be identified as a key industry to be targeted under the State Plan.

Consistent with this observation, it is acknowledged in the State Plan that "Innovation occurs in all sectors of the economy, notably agriculture and primary industries, and the Government will continue to work with these industries to support innovation that provides economic benefit for the State".

3 Impediments to Sustaining Appropriate Levels of Productive Capacity and Growth in the Agricultural Industry.

3.1 Information Technology and Innovation

One of the highest priorities for agriculture is the continued availability of new information and technologies related to sustainable and profitable farming systems that are also capable of meeting community expectations and supporting regional communities. R&D has been a primary driver of agricultural productivity and, given the increasing challenges confronting the sector in areas such as natural resource management, climate change and biosecurity, insufficient research and educational capacity represent one of the major potential impediments to growth.

3.1.1 Agriculture and innovation

The benefits from agricultural R&D are high, with most studies indicating returns of greater than 20 percent per year. Most agricultural technologies are, however, sensitive to local conditions such as climate, soil and other bio-physical attributes. As a result, Australia needs to maintain strong agricultural R&D capacity and the means to ensure its adoption, particularly given the intensification of agriculture and its unique characteristic of being reliant on the natural resource base of NSW.

Without government investment in agricultural R&D, it is widely accepted that there would be 'under-investment' because of the inability of individual businesses and companies to fully capture the benefits of certain R&D investments, and because those investment opportunities characterised by a mix of industry and public benefits would fail to be fully explored without government intervention. These well known 'public good' characteristics of agricultural R&D justify government involvement, and given that the adoption of innovative technology by farmers often generates environmental as well as productivity benefits, government co-investment with industry in both agricultural R&D and extension will often generate the optimal investment mix.

Presently, about 48 percent of the direct costs of DPI's Science and Research Division comes from external funds.

3.1.2 Adapting to climate change

Seasonal conditions are a key driver of agricultural productivity. Climate change and more variable seasonal conditions therefore have the potential to significantly impact on agricultural sector growth and natural resource management, with adverse flow-on impacts to regional communities and the State economy.

It is apparent that significant investment to quantify the likely bio-physical, as well as socio-economic impacts, of climate change is necessary. Investment is also required in developing new technologies and practical adaptive management approaches to maintain the State's productive capacity and to avoid significant social dislocation.

3.1.3 Education and training

The NSW State Plan identifies better access to training in rural and regional NSW to support local economies as a key priority. Skills development delivery in rural NSW faces the obvious challenges of geography, diversity and the need to tailor programs to suit seasonal and workplace timeframes. Furthermore, with increased regulatory requirements being placed on farm businesses in areas such as natural resource managements, occupational health and safety and product integrity, the education and skills development needs of farmers is ongoing and increasing.

NSW DPI has developed a comprehensive suite of training programs, through its two agriculture colleges and PROfarm, focusing on business risks including climate risk. While the primary focus is on enterprise development and natural resource management, a range of factors will create additional pressures on rural landholders to undertake and invest in training and skills development. It will be important that these skill requirements are identified in the Regional Innovation Strategy, and that strategies are identified to increase the number of farmers with accredited training qualifications.

3.1.4 Recruiting and retaining talented people

It is becoming increasingly difficult for agricultural industries to attract and retain talented young people, including professionals in regional areas. Aspects of these issues have been considered by the Frawley Review and by the AgStart Board. The demographics of our agricultural industries suggest constraints of this type are likely to become increasingly important as current industry participants retire in future.

3.2 Resource Access

Demands placed on agricultural land and water resources will intensify due to increasing population pressures, the growth of other resource-intensive industries and increasing public concerns about environmental management.

Innovative solutions to resource use conflicts will require increased levels of communication and cooperation between user groups. The policy settings of government relating to resource access will also need to adequately reflect the broader economic, environmental and social values of resource use options.

3.2.1 Water

Access to the State's water resources has emerged as one significant potential impediment to growth of agriculture in NSW. The scarcity of water resources and the need to share these appropriately between agriculture, industry, the environment and other users will require ongoing adaptation by agricultural and processing industries. The water reform framework, as encompassed by the National Water Initiative and the proposed $10 billion National Plan for Water Security will continue to require the irrigated farm sector to adjust their water management practices. This presents challenges and opportunities for increasing business investment in rural and regional NSW.

For the Inquiry, this key resource access issue raises a number of important questions. At a broader policy level, for example, emphasis should be given to:

- the need for governments to continue to explore innovative policy mechanisms for resource sharing between the environment and production sectors;
- the need to ensure that government water purchase for purposes such as the environment is done so in accordance with competitive neutrality principles; and
- in view of the evolving policy environment, appropriate assistance continues to be provided to facilitate regional and farm sector adjustment and adequate R&D that identifies more efficient water use systems and technologies.

3.2.2 Agricultural land

Demand for access to agricultural land for urban and peri-urban development will continue to intensify due to population growth and demographic changes, such as the aging of the population and the migration of people from cities to coastal and regional centres.

Prices at which land is exchanged does not always fully reflect broader community values associated with agricultural land. For example, a range of 'non-market' or 'amenity' values are often associated with agricultural land, such as environmental and aesthetic values, which in turn, positively influence regional identity and industries such as tourism. It can be argued that 'market failure' exists given that incorporating these unpriced community values to be incorporated into private land market transactions, would see higher agricultural land prices, and less peri-urban development.
Rather than seek policy measures which incorporate amenity values into land prices (see, for example, USDA 2002), the NSW Government applies regulatory planning approaches.

Within the context of the State's Regional Strategies, planning instruments (SEPP, REP, LEP, DCP) under the *Environmental Planning and Assessment Act* determine where different enterprises can be located and the conditions under which they must operate. EPIs have the capacity to create or minimise conflict by regulating land use on adjacent land and they also influence access to roads and other infrastructure. There are already some SEPPs relevant to aspects of agriculture, such as SEPP 30 for Intensive Agriculture and SEPP52 for Farm Dams and drought relief, and various components of Regional Environmental Plans.

There is an advantage in having simple consistent rules as evidenced by the recent development of the standard LEP, which has helped address some inconsistencies between councils that may artificially influence the cost and location of development.

NSW DPI acknowledges the consideration of these issues contained in the recent review Chaired by Gary West and various planning reviews being undertaken by the Department of Planning.

To address such issues, governments need to continue to ensure that planning instruments support agricultural objectives and integrate key policies relevant to rural communities and economic development.

3.3 Drought

3.3.1 Increasing the policy emphasis on drought preparedness

Given the over-riding impact that seasonal conditions have on agricultural productivity, the recent decision by Australian governments to shift the focus of the National Drought Policy from providing business support during drought, to improving drought preparedness, provides an important opportunity to strengthen and enhance the sustainability of farming systems in NSW.

Following this decision, Australian governments are now reviewing the effectiveness of pre-drought preparedness measures and are considering new initiatives.

For example, NSW DPI has been a key contributor to the development of the National Agricultural Monitoring System (NAMS), which is a database of climatic and agronomic data that will be used to streamline Australian Government Exceptional Circumstances drought determinations and NSW drought declarations.

NAMS may also provide an earlier indication of the onset of drought allowing additional time for farmers and governments to make associated tactical and strategic decisions.

Improving preparedness beyond reliance on reactive assistance will require an increased proportion of farmers to develop and manage production systems that are more drought resilient, and more profitable in the intervening 'good' years.

NSW DPI will need to provide farmers with the improved skills required to implement and manage these systems along with skills in adaptive management decision making to adjust enterprises as seasonal conditions change.

The potential for drought to be more prominent as a result of climate change needs to be reflected in R&D in areas such as plant varieties and RD&E on sustainable farming systems.

The national approach to developing a set of preparedness programs, and gaining their widespread acceptance among the farming community, in exchange for within-drought business support will be an important challenge for the sector.

3.4 WTO Negotiations

Agricultural industries in NSW are heavily reliant on export markets (see Figure 4) and therefore developments in multilateral trade negotiations will impact significantly on the agricultural sector's growth prospects. Issues, such as biosecurity, are increasingly being used as non-tariff trade barriers.

3.4.1 Lack of progress with WTO negotiations

Significant frustration has arisen in response to the lack of outcomes from the six years of Doha Round negotiations. Current negotiations have largely reached a stalemate, with very few substantive offers on the table and many member countries having adopted 'mercantalism' trade perspectives (ie. exports are good, imports are bad). Consequently, there is a high risk of failure with the Round and a feeling that new approaches are required.

A new approach currently being explored is to promote, particularly with developing economies, domestic reform programs. The approach is intended to build capacity in 'public interest' policy assessment and in so doing build an appreciation that trade, regardless of the level of imports, is in the long term interest of all economies.

The initiative would potentially involve encouraging WTO countries to establish domestic institutions, independent of government, to provide independent advice on the economy-wide costs and benefits of changing protection in domestic markets for goods and services.

Australia's domestic reform program over recent decades and the associated institutions that have accompanied it, such as the Productivity Commission, is a reform model that has been widely promoted. Importantly, however, state and territory governments in Australia have also been substantially involved in reforms, particularly those related to agriculture.

This development is presented to the Committee in order to:

- highlight the important impediment that lack of progress with WTO negotiations presents for the agricultural sector;
- flag the potential for more innovative approaches to trade reform; and
- suggest that a new strategy may be for Australian governments, at all levels, to work more closely with key trading partners on progressing domestic policy reform programs.

3.5 Compliance Costs

3.5.1 Cutting red tape and reducing regulatory compliance burdens

Consistent with the COAG National Reform Agenda, cutting 'red tape' is a key State Plan priority of the NSW Government and it is committed to enhancing its 'gate-keeping' processes to ensure that the stock of existing regulation does not impose any unnecessary burdens.

While reducing red tape has been an ongoing priority of governments, placing new emphasis on it is consistent with the increasing demands being placed on the agricultural sector in areas such as environmental management, occupational health and safety and product integrity, which all have the potential to translate into increased production costs and lost competitiveness.

The need for closer monitoring of cumulative compliance burdens and increased innovation in regulation making is therefore an important priority for the sector. This is reflected in the COAG 2006 agreement that all Australian governments undertake targeted public annual reviews of existing regulation to identify priority areas where regulatory reform would provide significant benefits to business and the community.

Following from that agreement, the Productivity Commission will undertake a systematic review of the cumulative stock of Australian Government regulation with its current inquiry, "Annual Review of Regulatory Burdens On Business – Primary Sector" being of potential relevance to the Committee. The NSW Government will also be conducting and implementing the findings of three industry specific red tape reviews of existing regulation per annum over the next five years.

As part of this process, NSW DPI will shortly commence a review of its bio-security legislation.

4 DPI's Role in Building the 'Capacity' of Agriculture in NSW

4.1 Creating Options and Maximising Value

Contemporary investment decisions help determine the future value of resource use options in the future. For example, investment in a yield-improving technology now affects the future return from the given crop, as well as the relative returns of the crop and alternative land uses. The value of such future resource use options are not restricted to agricultural productivity outcomes, but can also be measured in social and environmental terms as well to give an overall community value.

Consequently, a primary focus for DPI, across all of its activities, is to contribute to overall community value through sustainable and profitable primary industries. DPI has a range of tools that can be used to:

- guide greater social, environmental and economic value being obtained from the State's natural resources by both more efficient current productive use and the creation of options for future use;
- undertake investments in better understanding natural systems and the impacts of system modifications on environmental sustainability and profitability; and
- in some cases, support this understanding with regulatory and advisory measures.

DPI's approach places significant importance on providing agriculture with 'insurance' and 'capability' values. For example;

- certain classes of RD&E and biosecurity are recognised for the insurance values they provide to farm profitability;
- skills and capability, within DPI or fostered as a result of DPI capability, provide current and ongoing potential value in the future; and
- the development of flexible industries and capability, able to deal with, adapt to and plan for the high levels of uncertainty that will be features of agriculture for the foreseeable future.

The availability of DPI activities therefore enables things to be done that would not otherwise be possible, or that could not be done as cheaply. Good resource management, including risk management and research, plays a key role in increasing the value of the options available to the NSW community associated with agriculture and its resource base. This arises because the assets become more accessible; because using them becomes lower in cost or risk; or because new ways of deriving value from them have been created.

Investments in technologies also deliver greater value by allowing substitution of technology for physical assets, and in doing so, may relax the trade-off between current and future resource use. For example, investments in conservation can secure future options, but may come at the cost of short-term tangible wealth creation. In effect, it involves substitution of natural capital for financial capital.

Better information, such as the results of well-targeted extension, can create new options and add to the value of existing options by supporting better decisions as to when and whether to exercise the options. For example, farmers develop risk and business management skills through 'Stockplan', an integrated program developed by DPI that

facilitates decisions about when to sell, feed or agist stock, as well as plan herd or flock management. The development of such skills allow farmers to access more options for the economic development of their business, as well as ensuring they protect and enhance the resource base for the future.

Demonstration of the freedom or the eradication or management of certain animal and plant pests and diseases in NSW and Australia, enhance the value of future marketing options by protecting existing, or creating new, markets for NSW agricultural produce.

All of these activities of DPI assist the ability and performance of agriculture in NSW to extract value from resources and to reduce conflicts between extractive and conservation values of resources.

DPI's objective is therefore to help ensure that options are available in the future, and that the value of agricultural 'production options' are as high as possible while balancing alternative resource use demands and environmental sustainability. This role is one of facilitating the progressive fostering of the value of the set of options that are available to the NSW community that are linked to industry-based use of the natural resources and the effectiveness with which these options are managed and used.

References

Alexander, F. & Kokic, P. (2005), *Productivity in the Australian Grains Industry*, Report prepared for the Grains Research and Development Corporation, Canberra.

Australian Bureau of Statistics (2006), *Natural Resource Management on Australian Farms*, Catalogue No. 4624.0, Canberra.

Australian Bureau of Statistics (2007), *Labour Force Survey*, Catalogue No. 6291.0.55.03, Canberra.

Australian Bureau of Statistics (various), *Value of Agricultural Commodities Produced*, Catalogue No. 7503.0 (between 1992-2007 and earlier corresponding publications), Canberra.

Frawley, Peter T. (2003), Review of Rural Veterinary Services prepared for the Department of Education, Science and Training and the Department of Agriculture, Fisheries and Forestry, Report ISBN: 0 642 77334 3 Commonwealth of Australia.

Kompas, T. & Tuong Nhu, C. (2004), 'Productivity in the Australian Dairy Industry', *Australasian Agribusiness Review*, vol 12, paper 2, Faculty of Agriculture and Food Systems, University of Melbourne.

Mullen, J.D. & Crean, J. (2007), *Productivity Growth in Australian Agriculture: Trends, Sources and Performance*, Research Report, Australian Farm Institute, Surry Hills, Australia.

NSW Department of Primary Industries (2007), *The Contribution of Primary Industries to the NSW Economy: Key Data 2007*, Information Sheet, Orange NSW, Australia.

Productivity Commission (2005), *Trends in Australian Agriculture*, Research Paper, Canberra.

United States Department of Agriculture (USDA) (2002), *Farmland Protection: The Role of Public Preferences for Rural Amenities*, Agricultural Report No. 815, Washington DC.

Attachments

NSW Department of Primary Industries '*The Contribution of Primary Industries to the NSW Economy: Key Data 2007*' information sheet..

NSW Department of Primary Industries '*Primary Industries Development: Profitable agriculture for a sustainable future*' brochure.

NSW Department of Primary Industries '*Primary Industries Science and Research Strategy 2005-08*' brochure.