The Senate

Select Committee on Agricultural and Related Industries

Food production in Australia

Final report

August 2010

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2.53 The committee recommends an audit be undertaken to establish the extent of foreign ownership of commercial agricultural and pastoral land, and ownership of water, in Australia, with particular emphasis on ownership by sovereign and part-sovereign-owned companies.

Recommendation 2

4.51 The committee recommends that the Rural Industries Research and Development Corporation (RIRDC) report to the Senate on the current level of agricultural research in OECD countries as a percentage of GDP and the trend for investment over the last ten years.

Recommendation 3

4.53 The committee recommends that IP Australia advise the Senate what patents, if any, have been granted over biological discoveries as opposed to inventions, with reasons for them being granted.

Recommendation 4

5.35 The committee recommends that the Senate re-establish the Select Committee on Agriculture and Related Industries in the new parliament to further examine issues relating to food production, including the implications of any proposed emissions trading scheme for affordable, sustainable food production and viable farmers.

Chapter 1

Introduction

Conduct of the inquiry

1.1 On 25 June 2008 the Senate referred the following matter to the Senate Select Committee on Agricultural and Related Industries for report by 27 November 2009:

> Food production in Australia and the question of how to produce food that is:
>
> (a) affordable to consumers;
>
> (b) viable for production by farmers; and
>
> (c) of sustainable impact on the environment.

1.2 The committee subsequently sought and received extensions to the reporting date, culminating in a final reporting date of 23 August 2010.

Structure of the report

1.3 The remainder of this chapter canvasses the challenging future global food task in the context of increasing demand and emerging supply constraints. The committee also considers Australia's agricultural production in this context.

1.4 Chapter 2 discusses the availability and use of agricultural land in Australia, including the need to maintain agricultural production in the face of competing uses; changing agricultural land ownership arrangements; and the effect of foreign ownership of Australian agricultural land.

1.5 Chapter 3 examines a specific aspect of agricultural land use: the emergence of agricultural production via managed investment schemes (MIS). The committee specifically discusses the tax treatment of MIS and its effect on the allocation of resources in rural areas, as well as outlining major MIS collapses of recent times and the potentially fragile nature of this structure as a vehicle for agricultural production.

1.6 Chapter 4 considers the relationship between scientific innovation in agriculture and its effects on driving the productivity gains necessary to maintain farmers' viability. The committee outlines agricultural research and development in Australia, concerns over recent declining investment in this area and proposals for reform. Finally, the committee explores the implications of plant gene patenting arrangements on the availability and cost of the base materials necessary for food production.

1.7 Chapter 5 examines a range of supply chain issues and the impact each has on the viability of agricultural production and the affordability of food for consumers. The committee considers evidence regarding the impact of rising prices for fertiliser,

labour and fuel on agricultural production, declining water availability and inefficiencies within transport infrastructure. The committee also considers the role that food waste plays in supply chain inefficiencies. Finally the committee considers food retail issues and how these impact on returns to growers for raw commodities and the final sale price of food products to consumers.

Global food demand

1.8 The demand for food globally is predicted to increase considerably in the coming years as both populations and incomes rise. The United Nations has predicted that the world's population will increase to over 9 billion people by 2050, from the current 6.7 billion.[1] Professor Julian Cribb has noted that:

> ...the world population is going to be around 9.1 or 9.2 billion people by 2050, barring accidents, and food demand is growing at about one per cent per annum on top of that population growth. So there is going to be a requirement for roughly double the amount of food by the mid part of this century.[2]

1.9 The Commonwealth Scientific and Industrial Research Organisation (CSIRO) informed the committee that rapidly increasing global demand will be driven by increasing demand for staples from population growth and high protein foods from rising incomes. CSIRO stated that:

- Demand for cereals is predicted to increase by nearly 50% between 2000 and 2030.
- Consumption of fish, dairy, wheat and meat products all increase as incomes rise. Demand for more animal protein by the burgeoning middle-income classes in India and China has been predicted to increase 85% between 2000 and 2030.
- Food imports are predicted to more than double by 2030 in sub-Saharan Africa.[3]

1.10 Growcom stated that rising incomes in developing nations would have a significant effect on demand:

> Higher incomes in China and India have led to increases in consumption of meat and dairy products rather than staples like rice. These products rely heavily on grains as a feedstock, increasing overall demand. By 2020, the Australian Farm Institute estimates that Asia will be importing an additional 5.2 million tonnes of dairy products, 1.9 million tonnes of beef and 1.1

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1 UN Department of Public Information, *Press release*, 'World population will increase by 2.5 billion by 2050', 13 March 2007, accessed 25 June 2010 at http://www.un.org/News/Press/docs//2007/pop952.doc.htm. The world's current population as referred to above reflects 2007 levels and is expected to have risen to 6.8 billion at 2010.

2 Private capacity, *Committee Hansard*, 12 October 2009, p. 2.

3 *Submission 27*, p. 4.

> million tonnes of chicken. That represents 50% of Australia's current dairy production, 86% of our beef production and 140% of our chicken meat production. Such an expansion would require an increase in feedgrains of 225 million tonnes a year, which combined with bio-fuels, would push world feedgrain demand up to 350-450 million tonnes by 2020.[4]

Food supply

1.11 On the supply side, this increasing demand for food has to be met in the context of considerable capacity constraints and related input cost pressures. These include declining available agricultural land from urban encroachment and alternative fuel needs; reduced water availability from climate change and urban use; likely limits on greenhouse gas emissions to address climate change; and potentially a greater scarcity of crucial inputs such as fertiliser and oil.

1.12 Professor Cribb has taken a pessimistic view about the capacity of the global agricultural system to meet future demand for food. He claimed that doubling output will need to occur when vital agricultural inputs are in decline, nominating water, agricultural land, nutrients, oil, technological advances and suitable growing conditions as likely to be increasingly scarce. He stated:

> City demand is now outrunning irrigation demand worldwide. Groundwater levels are falling in almost every country where water is used to produce food. Five billion people will face water scarcity in 2050.
>
> ...
>
> ...the global stock of good farmland is declining. Twenty-five per cent of the world's farmland is degraded to some degree or other. That is FAO data. We are losing about one per cent per year. So project that into the future and you will see how much we may have left. Urban land use is set to double. That is not only the footprint of the city itself but also all the land in the catchment that it swallows up for recreation and other activities. Basically, it is the world's best farmland because cities are located in river valleys, by and large.
>
> ...
>
> With regard to peak nutrients, the world perhaps passed peak phosphorus in 1987. Peak gas, which is the main source for producing nitrogen fertiliser, is expected to occur some time in this decade. So fertiliser prices are likely to go up very sharply. More than half of all food produced and three-quarters probably of all nutrients are currently being wasted.
>
> ...
>
> The International Energy Agency says that we are heading for peak oil. As you know, half of the world's agricultural industry is entirely dependent on oil to keep the wheels of the tractors turning. Fuel prices are going to go up quite savagely, obviously over the next 20 years or so. If agriculture

4 *Submission 23*, p. 5.

> switches to farm produced biofuels, it will probably involve a penalty of about 10 per cent in food output in order to sustain the actual agricultural activity. If, however, agriculture has to supply the fuel for the trucks that carry the food to the cities, then you can expect roughly 30 per cent of agriculture may well be devoted to producing that fuel.
>
> ...
>
> There is declining R&D...[Since] the early 1970s, the rate of agricultural research has been declining in every major country in the world and internationally. There has not been a real increase in international agricultural research funding since 1974, which is a very long time, and the world population was half what it is today at that time. All the major countries that have invested so much in agricultural research have been pulling back. Even countries such as China have reduced significantly the amount of agricultural research that they are doing. So farmers worldwide are driving into a large technology pothole...
>
> ...
>
> ...the climates are becoming much more erratic, and we ourselves appear to be one of the early witnesses to the sorts of changes that are going on in the climate. Yes, it will rain more in some countries, but not always where you want it to. The general picture is for the large grain growing areas of the world to dry out, particularly critical areas such as India, central Asia, China and so on. [5]

1.13 These challenges as they relate to Australian food production are examined further in the remainder of this report.

Australia's agricultural production

1.14 Australia's agricultural sector is an integral part of the Australian economy and a significant exporter, providing food and fibre for tens of millions of people around the world. Agriculture employs over 300,000 people on 134,000 farms utilising around 60 per cent of the Australian land mass. The industry accounts for just 2 per cent of national GDP, though the effect recent droughts have had on economic growth have demonstrated the importance of agriculture to Australia's overall economic performance.[6]

1.15 The Department of Agriculture, Fisheries and Forestry (DAFF) informed the committee that Australian agriculture is export oriented:

> In 2007-08, food exports were valued at $23.4 billion, accounting for approximately 13 per cent of Australia's total merchandise exports. Imports of food and food products in 2007-08 were valued at around $9 billion, nearly 40 per cent of the value exported. The dependence of Australian farming on exports varies between industries. Over the period 2005-06 to

5 *Committee Hansard*, 12 October 2009, pp 2-3.

6 *Submission 93*, pp 4-6.

> 2007-08, around 56 per cent of the commodities produced on farms were exported...[7]

1.16 Consequently, returns for producers are heavily influenced by global price movements:

> For Australian agriculture, changes in world prices and currency movements have an important impact on producer returns. This is because domestic prices for these commodities will generally be relatively closely correlated with those in international markets. This is particularly relevant for commodities of which a large proportion are exported, or which face competition from imports or domestically produced substitutes that are traded globally.[8]

1.17 DAFF noted that Australia's relatively small and slowly growing population, with already high per capita incomes, means that future growth in Australian agriculture will depend on expanding export markets.[9]

1.18 Another notable characteristic of Australian agriculture is the long term downward trend in farmers' terms of trade. That is, the prices of agricultural inputs are rising faster than the prices received for agricultural outputs they produce. The one factor mitigating declining terms of trade has been productivity growth, which has enabled Australian farmers to use their inputs more efficiently to remain competitive and sustain their incomes. DAFF explained that:

> Productivity of Australian farms, measuring the efficiency of using inputs to produce a specific level of outputs, has risen strongly for cropping specialists and the mixed crop-livestock industry - averaging 2.1 per cent and 1.5 per cent a year respectively from 1977-78 to 2006-07. Beef specialists achieved the same average performance level as the mixed crop-livestock industry over the past three decades. Their productivity growth coincided with high output growth and relatively marginal growth in input use. The sheep industry continues to lag behind the broadacre sector in terms of long-term productivity growth. Between 1977-78 and 2006-07, the industry has experienced a decline in both output and input use...[10]

1.19 However, DAFF warns that broadacre productivity has slowed since the turn of the century, after surging in the 1990s. This is partly attributable to droughts in 2002-03 and 2006-07.[11]

1.20 The committee was also informed that primary producers are receiving a declining proportion of final retail prices. DAFF stated that:

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7 *Submission 93*, p. 8.

8 *Submission 93*, p. 8.

9 *Submission 93*, p. 10.

10 *Submission 93*, p. 17.

11 *Submission 93*, pp 17-18.

> With respect to the farm to retail supply chain, the value of raw commodities has tended to represent a declining proportion of the final sale price of food products, despite competition at all levels of the supply chain (Whitehall Associates, 2004). The growing gap between farm-gate and retail prices is mainly a reflection of the rising cost of services (including transport, storage, handling, distribution and retailing) and the incorporation of additional attributes (packaging, presentation and qualities) in the final product in response to consumer demands.[12]

1.21 Likely future global demand and supply drivers provide both opportunities and challenges for Australian producers. The submission from red meat representative organisations indicated that increasing global demand provided opportunities for local industry:

- Global demand for meat is projected to double by 2050, with this growth highly concentrated in developing Asian countries.
- Even after accounting for growth in domestic production and competing supplies of white meats in these countries, there is a significant gap to be filled by imports of red meats.
- Australia is the world's number two red meat exporter, so this represents a major commercial opportunity.
- It also represents a major responsibility to provide a highly nutritious, affordable, secure and environmentally sustainable food source for the people of the developing world.[13]

1.22 However, increasing demand and prices for agricultural commodities will need to overcome the significant supply-side challenges highlighted by Professor Cribb above at paragraph 1.12. The committee notes that many contributors to this inquiry were broadly pessimistic about meeting the global food task within Australia's current agricultural system. For example, Victorian Eco-Innovation Lab's evidence represented a view that our food systems need to be re-designed to meet the needs of producers, consumers and the environment:

> Our challenge is not just to produce more food, increasing productivity in the way that we have been doing—increasing efficiency in existing systems is necessary but not sufficient—we also need to think about what food it is, who gets it and how and about regenerating our resources to produce sustainable food in the long term. Acknowledging these challenges, we have a choice to continue as we are with farmers increasingly being squeezed between a declining resource base and input costs and being unable to pass those costs up through the supply chain or being able to pass those costs up the supply chain and having more expensive food with the corresponding food security challenges and poor nutrition outcomes for a steadily increasing group of people; or we can take on the challenge of

12 *Submission 93*, p. 19.

13 *Submission 29*, p. 4.

> developing new food and farming systems that are less reliant on these resources and that maximise the nutritional value of food produced from the resources that we have, hopefully while sequestering carbon.[14]

1.23 The specific challenges facing food producers in Australia are examined in the remaining sections of this report.

Committee view

1.24 The global community faces an enormous challenge to feed itself by the middle of this century as the demand for food increases significantly, perhaps doubling, while our capacity to produce food is constrained by water scarcity, declining arable land, declining nutrient inputs, declining agricultural research and development and deteriorating climatic conditions in key food growing regions of the world. If the challenge is not met, the consequences for global peace and security could be grave and Australia will not be immune.

1.25 The committee discusses a number of these specific challenges in further detail in the chapters that follow.

1.26 From Australia's perspective, it is imperative that we maintain a productive base capable of meeting the food needs of the domestic population to ensure food security in the event that other countries become unwilling to trade food grown within their borders. Even more important, however, is the need for Australia, as a major food exporter, to contribute to meeting the global food task and thereby prevent the potentially disastrous consequences of major food shortages.

1.27 The committee is therefore of the view that governments around the world, including Australia's, must plan for the food needs of the population into the long term future. Such planning should begin in earnest as of now. The views expressed by the committee in the remainder of this report reflect changes to our current approach to agricultural food production that must occur if Australia is to meet its food production objective of producing food that is affordable and can be produced viably by farmers in an environmentally sustainable way.

14 *Committee Hansard*, 25 March 2009, p. 30.

Chapter 2

Land use

2.1 A key component of food production is the availability and productive use of fertile agricultural land. Issues raised during the inquiry were focussed on the following aspects of land use for food production:

- competing uses for agricultural land;
- planning measures to maintain agricultural production;
- the cost of agricultural land relative to rates of return from agricultural investment;
- changing agricultural land ownership arrangements; and
- foreign ownership.

Competing land uses

2.2 This inquiry elicited an important debate about the increasing demand for, and use of, fertile agricultural land for purposes other than food production. Concerns about competition for land and the effect on food availability and price were typified by the following comment from the Western Australian Farmers Federation:

> ...there is a lot of pressure on the hard stuff that we use to produce the food, and that is land. The high productive land in this state is being used for urbanisation, lifestylers and tree and wood production, and if carbon trading gets up, that will only continue. The normal agricultural pursuits are being pushed out into the drier, lower rainfall, much more variable areas of the state. The writing is on the wall, but we seem to be completely intransigent about putting in place systems and laws in this country that protect the smaller farmers and agriculture in general.
>
> Unless we do it, and very quickly, another 10 or 20 years and people will go hungry. The price to produce the stuff is going to go through the roof.[1]

2.3 This chapter explores concerns raised about the following competing uses, potentially diminishing the land available for food production:

- urban encroachment;
- biofuels; and

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1 *Committee Hansard*, 24 March 2009, p. 27.

- mining.

Urban encroachment

2.4 The land on the fringes of Australia's major cities has been an important food growing area, due to the arable qualities of the land and the proximity to consumers that ensures food freshness and minimal transport costs. However, population growth and associated housing development in major cities is encroaching into land previously used to provide food for their inhabitants.

2.5 The Planning Institute of Australia noted changing land uses around Australian cities from food production to housing development:

> Historically most early settlements have been established close to productive land and most had market places for selling and distributing food. Traditionally, large allotments also provided opportunities for residents to grow their own produce. As towns and cities grew and new settlements were created, these productive farming areas have been pushed further out as development expanded. Now, increasingly many of the areas of traditional farming at the fringes of our cities and towns are under pressure for development for residential or related purposes.
>
> Since 1945, the expansion of Australian cities has removed more than one million hectares of rural land. If current trends continue, by 2021 Melbourne will have lost another 25,000 hectares of rural land to urban development.[2]

2.6 The NSW Department of Primary Industries (DPI) also noted recent trends affecting productive agricultural land:

> In recent years, competition for agricultural land and water resources has intensified due to increasing population pressures and associated demand for urban and peri-urban development (particularly in coastal areas), the growth of other resource-intensive industries and increasing public concerns about environmental management. This competition for agricultural land will continue to intensify due to demographic changes, such as population growth, the ageing of the population and the migration of people from cities to coastal and regional centres. It is therefore essential that planning mechanisms reflect the range of values held by society generally, rather than specific local interests.[3]

2.7 The DPI submission noted that agricultural interests are often sacrificed for the amenity of new residents:

> Encroachment of agricultural land by urban development and subdivision leads to the potential for conflict between urban and lifestyle use and agricultural activities. Tensions can result at the interface between

2 *Submission 43*, pp 1-2.

3 *Submission 39*, p. 9

> agriculture and residential or 'lifestyle' land uses that can have long term consequences for farm productivity. New rural land owners may object to routine agricultural practices, which may result in constraints being placed on farmers in relation to the use of chemicals, noise, light spill, odours, appearance of buildings and structures, clearance of vegetation, and access to water resources. Farmers may experience problems with issues such as lack of weed control and stray domestic dogs.[4]

2.8 Growcom indicated that, in Queensland, the loss of productive land is an issue of major concern:

> Increasing urban pressure on farming in urban fringe areas is creating land use conflict and marginalising viable farming operations. The pressures on farming enterprises includes meeting the environmental expectations of the urban lifestyle community, who want the lifestyle of acreage properties but are not prepared to accept that normal farming practices need to be carried on around them. These landholders are often unaware of the importance of minimising biosecurity risks, observing quarantine restrictions, preventing the spread of weeds and maintaining essential farm infrastructure such as fencing. At the same time higher land prices, land taxes and Council rates induced by development and lifestyle investors make it increasingly difficult for farms to remain viable or to further develop or expand to maintain or improve productivity.[5]

2.9 The Victorian Farmers Federation expressed concern that the most fertile agricultural land in Victoria is also becoming more popular for residential use because of its amenity.[6] The federation commented that, while planning guidelines require dwellings in farming zones to be necessary for a farming operation, this requirement is loosely interpreted by councils under pressure to fragment land for housing development.[7]

2.10 The Urban Research Centre in the University of Western Sydney informed the committee that an estimated quarter of the value of Australian agriculture comes from peri-urban areas, with 40 per cent of the value of NSW vegetable production coming from the Sydney region. They indicated that encroachment into this land has not been properly addressed:

> While there have been some notable exceptions, protection of peri-urban land for agriculture in Australia has too often been haphazard. This has resulted in agricultural land being lost to housing development.
>
> Protecting and preserving agricultural land close to the city is important when we consider facing a future in which there is decreasing fuel resources that drive current food systems and economies more broadly. The

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4 *Submission 39*, p. 10.

5 *Submission 23*, p. 9.

6 *Submission 22* p. 6.

7 *Committee Hansard*, 25 March 2009, p. 3.

> production of food close to the city markets ensures access to fresh produce that relies less on a fuel intensive distribution chain that requires both refrigeration and long distance transportation of food.[8]

2.11 The Urban Research Centre argued that it is not realistic to shift food production further away from cities, claiming that the spread of housing into arable land may leave nowhere left to move to.[9]

2.12 VicHealth suggested that moving food production away from populated areas risks food security:

> The transfer of land from agriculture to housing increases the food transport distances and increases the vulnerability of populations to food insecurity if there are disruptions in the food supply chain [26]. Peri urban regions comprise less than 3% of the land used for agriculture in five mainland states of Australia, but they have historically accounted for 25% of the total dollar value of agricultural production [28]. The rapid rate of urban sprawl experienced in recent years has resulted in a significant loss of productive agricultural land in per-urban areas.[10]

2.13 The Food Fairness Alliance (FFA) expressed concern about the capacity of Sydney to sustain itself:

> ...it is important that biodiversity & sustainable agriculture is protected in the Sydney Basin, with its fertile soil, access to water, transport, & in close proximity to Sydney, to ensure that Sydney can become a sustainable city nourished by a healthy fresh local food supply.[11]

2.14 The FFA submitted that perishable food grown close to the city is a key component of its affordability for consumers.[12]

Biofuels

2.15 There has also been controversy about incentives to use productive agricultural land for biofuels, where it was previously used for growing food. In 2008 global food prices skyrocketed, causing considerable social upheaval in many countries and leading some governments to place restrictions on the exportation of food. Part of the blame for this spike was attributed to subsidies for ethanol production designed to reduce greenhouse gas emissions and reduce dependence on oil.

2.16 In 2008 the Lead Economist of the World Bank Development Prospects Group released a report on steep price rises in food commodity prices. The report

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8 *Submission 102*, p. 2.

9 *Submission 102*, p. 3.

10 *Submission 28*, p. 5.

11 *Submission 40*, p. 1.

12 *Committee Hansard*, 5 March 2009, p. 51.

stated that although contribution of biofuels policies to the 130 per cent increase in food prices between 2002 and 2008 was difficult to quantify exactly, demand for biofuel was a significant contributor, more so than energy and fertiliser costs. The report concluded that the US and EU-driven demand for biofuels via subsidies and mandates reduced grain supply, distorted production decisions and triggered price rises across grain types, exacerbated by the export bans imposed by poorer countries in response.[13]

2.17 In Australia, the Commonwealth Government encourages ethanol production by subsidising ethanol producers at a rate of 38 cents per litre.[14] Significantly, NSW also imposes an ethanol mandate on fuel retailers, requiring that two per cent of the total volume of petrol sold in NSW is ethanol.[15]

2.18 The Australian Lot Feeders' Association (ALFA) told the committee that state government ethanol mandates will greatly effect local grain supply for other users:

> While Federal Government assistance and protection of the ethanol sector is undoubtedly distortionary, of most concern is the combined grain and food price impact of proposed State Government ethanol mandates. Essentially these mandates will distort grain markets as they provide a guaranteed ethanol related demand for grain which is disconnected to grain supply. This discriminates against other grain users in the market place who have to then pay inflated prices for residual grain supplies that may or may not be available. Plainly speaking mandates will create a perpetual drought with grain stocks indefinitely struggling to meet the food and fuel needs of society. With Australia's climate and hence crop production already inherently variable, the onset of climate change as predicted within the draft Garnaut report will lead to further pressures to meet such food and fuel demands.[16]

2.19 ALFA recommended that state and federal government subsidies for ethanol be removed.[17]

2.20 Mr Geoff Ward predicted that biofuels would be primarily sourced from grain feedstock, affecting food production. He said:

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13 Mitchell, D., 'A Note on Rising Food Prices', *Policy Research Working Paper 4682*, The World Bank Development Prospects group, July 2008, pp 3, 16-17.

14 AusIndustry website, 'Ethanol Production Grants', accessed 12 July 2010 at http://www.ausindustry.gov.au/EnergyandFuels/EthanolProductionGrantsEPG/Pages/EthanolProductionGrants(EPG).aspx.

15 NSW Land and Property Management Authority, Biofuels in New South Wales, accessed 13 August 2010 at http://www.biofuels.nsw.gov.au/.

16 *Submission 8*, p. 2.

17 *Submission 8*, p. 2.

> My estimate of the net grain needed as feedstock to fill an E10 and a smaller biodiesel mandate in NSW could be about 1.4 million tonnes annually.
>
> It would have been difficult to meet this mandated demand for grain in three of the last six years in NSW. If biofuel mandates had been in place existing grain end-users would have been affected to a greater extent and food price inflation more pronounced.[18]

Mining

2.21 In its second interim report the committee examined specific concerns about proposed mining on the Liverpool Plains area of NSW. The committee heard evidence that food producers in that region are deeply concerned about the potential effects of mining development on their land and concluded that the Liverpool Plains should not be subject to mining activities, due to its fertile and drought resistant characteristics and food producing capacity.[19]

2.22 The committee also notes concerns about potential mining in Queensland's prime agricultural regions. AgForce argued that latent exploration permits signify a threat to vast areas of the state's agricultural land, warning that existing agricultural producers are potentially unaware of, and vulnerable to, mining interests:

> ...we have very much a sleeping giant here. Some of these exploration permits of upwards of 50 years old. Indeed, we actually have landholders who are not even aware that there are exploration permits already granted over their properties. Indeed, because of the variations of some of the gas and petroleum resources, rather than mineral resources, you can have multiple permits over your property, depending on the different extraction methods or different items as well.[20]

2.23 AgForce noted the need for a balanced approach:

> ...there will be many of our members and members of other farming organisations around the country who would welcome the opportunity to realise there is a huge asset under their property and may offer them the opportunity to realise on that. We do not want to restrict the trade; we do not want to restrict the opportunities. What we do want to do is make something sustainable, equitable and, in the long run, manageable.
>
> ...
>
> At the moment it is the opposite; it is not a choice. It is the right of a mining company; it is not the choice of a producer. [21]

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18 Private capacity, *Submission 5*, p. 2.

19 Senate Select Committee on Agricultural and Related Industries, *Food production in Australia: Second interim report*, November 2009, p. 22.

20 *Committee Hansard*, 4 March 2009, p. 38.

21 *Committee Hansard*, 4 March 2009, p. 39.

2.24 From the perspective of our food producing capacity, AgForce told the committee that good agricultural land could be lost for good:

> ...the removal of this good agricultural quality land to an open cut system, regardless of whatever indemnities or bonds get put in place for remediation of those systems afterwards, a lot of studies are now coming back to say that it will never get anywhere near the productive capability it once was.[22]

Planning measures to maintain agricultural production

2.25 The committee received a number of suggestions for planning mechanisms to be used to maintain existing agricultural land for the purpose of food production. The Planning Institute of Australia noted the importance of planning to ensure continuing food production, including:

> ...identifying land suitable for food production that should be protected from more intense development and promoting a range of initiatives to support community participation in food production, as is increasingly the case in some parts of Europe through urban micro-farming, edible backyards and productive streets.[23]

2.26 The Planning Institute recommended:

> Areas of productive land should be mapped and this should be used as the primary spatial planning constraint for urban containment so as to protect and enshrine productive land as the most valuable to the any urban areas survival.[24]

2.27 The Victorian Farmers Federation advocated protecting the most productive agricultural land from encroachment to maintain efficient and quality food production systems.[25] VicHealth recommended that:

> An agricultural overlay is needed in Planning Provisions to protect productive land from further urban development'.[26]

2.28 The Urban Research Centre (URC) expressed a similar view, arguing that better planning is required to enable housing and food production around cities to co-exist:

> The current failure to plan for the co-existence of agriculture and housing in peri-urban areas arguably only delays the inevitable. If such planning is done now, however, the co-existence of farms and housing can be managed to ensure best outcomes – environmentally, socially and economically.

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22 Mr Drew Wagner, Senior Policy Adviser, *Committee Hansard*, 4 March 2009, p. 36.

23 *Submission 43*, p. 2.

24 *Submission 43*, p. 2.

25 *Submission 22*, p. 7.

26 *Submission 28*, p. 5; see also Dieticians Association of Australia, *Submission 36*, p. 2.

> While there is still land available governments have the opportunity to plan for the protection and preservation of urban agricultural land. [27]

2.29 The URC that tools be developed to map and assess food producing land on the urban fringe and make appropriate zoning decisions, as well as exploring alternative agricultural options within cities such as rooftop gardens and backyard production.[28] Food Chain Intelligence also recommended that consideration be given to using hydroponics to cultivate horticultural products on the roofs of large commercial buildings.[29]

2.30 The DPI indicated that, although some regulatory approaches are being adopted in NSW to address land use conflict, local solutions may in some cases be the preferable approach:

> The nature of land use conflict means that local solutions are often appropriate, and in many cases it is more effective to address this issue in non-regulatory ways. [30]

2.31 Dr Estrada-Flores of Food Chain Intelligence recommended that a minimum quota of arable land dedicated for food production (as opposed to biodiesel production) be established and enforced.[31] Dr Estrada-Flores argued that food production should take precedence:

> ...in terms of financial aspects for a grower, if I get more money out of biodiesel then I will produce for biodiesel. If I get more money for food production I will produce food. It is just natural...the best crops should be reserved for food production because that is a primary necessity. Biodiesel is not exactly a necessity.[32]

Returns on agricultural investment

2.32 The committee heard that in recent years the price of agricultural land has increased considerably, despite declining terms of trade. One consequence of this has been that farmers are, to varying degrees, converting some of their equity to debt. Currently farmers may therefore be making a reasonable living income, and their land values rising, however, there is concern that rates of return on capital investment are well below other commercial endeavours. This suggests that, over the longer term, land price rises may not be sustainable and, without improved returns, some farm debt positions could deteriorate.

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27 *Submission 102*, p. 3.

28 *Submission 102*, pp 3-4.

29 *Submission 1*, p. 5.

30 *Submission 39*, p. 10.

31 *Submission 1*, p. 7.

32 *Committee Hansard*, 5 March 2009, p. 5.

2.33 Mr Charles Burke of AgForce told the committee that lifestyle is an important consideration for many landowners, which means that land often remains used for food production despite relatively poor returns on investment:

> I am a fourth generation producer on our property, and we have this discussion all the time. Our country is worth more as real estate than it is to run cattle on. But we are still making an income that is sustainable for us and is adequate for our needs. We choose to do what we do because added to the economics there is a lifestyle choice in that.[33]

2.34 The Western Australian Farmers Federation (WAFF) indicated that land prices reflected eternal optimism amongst farmers that seasonal conditions would improve to boost future returns.[34] Mr Michael Norton, President of WAFF, also suggested that banks are reluctant to 'sell up' farmers for fear that resulting property price falls would affect their overall agriculture portfolios.[35]

2.35 The Victorian Farmers Federation (VFF) agreed that current land values are predicated on improved conditions:

> We would have to be concerned in the long term if the current weather patterns hold or got worse about the underlying asset value. At some point the capacity for agriculture to continue to source finance when the annual returns are not there will dissipate. If they cannot source finance to operate their businesses obviously you start to see a large number of 'for sales' and there will be incredible pressure on the land values.[36]

2.36 The VFF indicated that the banking sector was unconcerned at this stage about shrinking land values, but equity problems may create a snowball effect:

> Generally the equity levels in agriculture are quite high and of course as you suggest that is underpinned by land value. A return to good seasons would see those land values shored up even for a couple of years, but obviously we are concerned that if you did see a number of farmers reach a sensitive threshold where they can no longer source finance because there were concerns about increasing debt levels and forced sales occurred ... you may see some significant losses in equity and you might end up with a snowballing effect which would obviously be of grave concern.[37]

2.37 The committee also heard evidence about the effect of agribusiness managed investment schemes on land prices. The effects of tax incentives for managed investments is examined in Chapter 3.

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33 *Committee Hansard*, 4 March 2009, p. 40.

34 *Committee Hansard*, 24 March 2009, p. 39.

35 *Committee Hansard*, 24 March 2009, pp 39-40.

36 *Committee Hansard*, 25 March 2009, p. 5.

37 *Committee Hansard*, 25 March 2009, p. 5

Alternative ownership arrangements

2.38 Another consequence of rising land prices unmatched by rate of returns is that young farmers are faced with borrowing costs to enter the industry that exceed what can be made from farming. The Tasmanian Institute of Agricultural Research explained:

> The age of farmers is rising to the point where in other industries most would be retired. The entry of newcomers is restricted by costs of entry due to the need for large scale farms to be efficient in the existing systems and to the small proportion of the total food value that returns to growers.[38]

2.39 Consequently, alternatives to the traditional family farming business structure are becoming more prevalent as an effective and efficient way to bring capital and expertise together in the agricultural sector. Mr Burke from AgForce suggested that alternatives to these existing ownership structures will become more common:

> I think we are seeing a generational shift within agriculture. Certainly in discussions that I have regularly with the banking sector, it is certainly looking and encouraging people to view alternative ownership systems. Once upon a time, if you wanted to farm a piece of dirt, you went and put a huge noose around your neck and bought it. I think there are a lot of people now who are the average farmer age of 57 or 58 who perhaps have not got somebody coming along in the next generation who want to take it on. Traditionally, those people would have sold that block of land, realised the asset and then taken off. Now those people might view it as an asset because of its capital value. It is still appreciating as a capital asset and they are looking at alternatives in how to use it. We might see more leasing and we might see more sharecropping or share-farming arrangements. I certainly think that needs to be explored.[39]

2.40 The VFF noted that there are few agricultural industries where people can enter 'from scratch' without coming from a farming family whose land is passed on. VFF suggested that, consequently, there would be an expansion of leasing and share farming arrangements in the cropping sector to enable generational refreshment.[40] They did not consider, however, that corporate farming would become more common than the traditional family farm model:

> ...even though there has been quite a lot of commentary in the media over the last probably 10 years about corporate farming, I still believe that the majority of agriculture in Australia will remain in family farm hands. That is the culture of the industry and I suspect it will stay that way. There will undoubtedly be large investments made by non-family farmers, but I think the majority of agriculture will still operate on land and systems conducted

38 *Submission 62*, p. 3.

39 *Committee Hansard*, 4 March 2009, p. 41.

40 *Committee Hansard*, 5 March 2009, p. 6

> by family farms which may by their very nature be corporate in size and structure anyway. [41]

2.41 VFF further commented that the profit incentive for farmers provided through the family farming structure increased the chance of long term capital appreciation and proper stewardship of the land.[42]

2.42 Kondinin Group Ltd (KGL) commented that farming viability required economies of scale of production and new ways of attracting capital to achieve it:

> Farmers over the last five or six years have seen quite an upward swing in terms of land values and the amount of capital employed in running a farm. There has been a lot of consolidation and farms have been growing, but now there are real capital constraints on farmers being able to swallow up neighbouring farms or grow to an efficient scale. That is an area that as a nation we really need to have a proper look at and we need to ask: is there some opportunity for large-scale collaborative investment schemes that could be put in place that do not necessarily mandate but have a function of investment into restructuring agriculture, both from the point of view of a sound investment and the point of view of restructuring our industry at a landholding level and at a supply chain level?[43]

2.43 KGL suggested a unit trust investment scheme in which unit holders would provide the capital investment for agricultural enterprises.

2.44 AACL Ltd discussed their business model with the committee, whereby investors provide capital to existing farmers to produce a crop on their behalf.[44] AACL Ltd explained:

> Our business model is based on a share-farming concept, where we bring together investors and existing farmers—by and large, family owned farming operations—and they enter into a relationship to grow grain over a period of time. The investor provides the money; the farmer provides the farm, the infrastructure and the expertise to do it. The farmer actually grows the grain on behalf of the investor, and the investor carries the production risk and the price risk. The farmer is actually contracting, providing services and putting his infrastructure into growing the grain. So the farmer is providing almost exclusively a service there, but he does have a profit share opportunity. We set, with each farmer, something called a target value, which is a minimum return back to the investor above which the farmer shares in any outperforming.[45]

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41 *Committee Hansard*, 5 March 2009, p. 8.

42 *Committee Hansard*, 5 March 2009, p. 9.

43 *Committee Hansard*, 24 March 2009, p. 61.

44 *Committee Hansard*, 1 July 2009, p. 62.

45 *Committee Hansard*, 1 July 2009, p. 62

2.45 AACL further explained that the farmer gains access to no-risk capital that offers 'a form of multi-peril insurance', and investors diversify their risk by having the grain from contracting farmers pooled.[46]

2.46 The committee notes that a prominent alternative ownership structure that has emerged in recent years is managed investment schemes (MIS). Due to the significant interest in this issue the committee discusses MIS and their effects on agricultural production in the following chapter.

Foreign ownership

2.47 Finally, the committee briefly explored the prospect of foreign ownership of Australian agricultural land, particularly the existing regulatory approach to major foreign land acquisitions.

2.48 The Foreign Investment Review Board (FIRB) informed the committee that investment in agricultural land by foreign investors is generally exempt from the requirement to notify the government in accordance with the *Foreign Acquisitions and Takeovers Act 1975*. Only if the acquisition exceeds 15 per cent of a business or corporation whose Australian interests are valued above $231 million, or where the investment is made by a foreign government or their agency, is it subject to scrutiny from the Australian Government to establish whether any national interest concerns are raised.[47]

2.49 The committee notes that incremental purchases exceeding the threshold amount in aggregate are not required to be disclosed. The committee also notes that in some countries the distinction between foreign governments and companies is not necessarily straightforward.

Committee view

2.50 Land available for agriculture is declining across the globe as expanding populations inhabit fertile land that could otherwise be devoted to food production. Although this problem is not as severe in Australia as it is in countries with a smaller land mass, urban encroachment is nonetheless affecting the capacity of Australian producers to grow food in the areas in which it is demanded, which in turn affects its quality and affordability. Competition for fertile land from mining and biofuels also threatens to reduce Australia's productive capacity.

2.51 The committee recognises that it is difficult for governments to dictate to landowners the purpose for which their land must be used, particularly when agricultural production may not presently be the most profitable possible use. However, Australian governments need to give serious consideration to mechanisms

46 *Committee Hansard*, 1 July 2009, p. 62.

47 *Committee Hansard*, 7 June 2010, p. 40.

for protecting our most fertile agricultural land from alternative uses in the interests of our long term productive capacity and food security.

2.52 The committee also notes the marginal viability of agricultural production and the difficulty for potential young farmers to enter the sector, due to high land prices which combine to leave agricultural production vulnerable to structures that are less desirable than traditional family farming. Corporate farming models have the advantage of attracting extra capital to agriculture, though there are questions about the availability of labour and long term stewardship of the land. More significantly, though, Australia risks foreign companies, many with close ties to their home governments, purchasing substantial strategic interests in Australian land without needing to be vetted for national interest concerns. Australia needs to be careful that Australia's productive capacity is not undermined by foreign interests producing food on Australian land that is not intended for trade, but for direct supply to countries that have not managed their own food security needs.

Recommendation 1

2.53 The committee recommends an audit be undertaken to establish the extent of foreign ownership of commercial agricultural and pastoral land, and ownership of water, in Australia, with particular emphasis on ownership by sovereign and part-sovereign-owned companies.

Chapter 3

Managed investment schemes

Introduction

3.1 An aspect of agricultural land use that attracted significant attention during the inquiry was the emergence of agricultural production via managed investment schemes (MIS), particularly the effect they are having on traditional agricultural enterprises.

3.2 In the first part of the chapter, the committee briefly outlines the structure of agribusiness MIS and related tax arrangements. The committee then specifically discusses the following concerns relating to the preferential tax treatment for MIS:

- whether MIS tax incentives have met their objective;
- the inefficient allocation of capital as a consequence of tax-driven market distortions; and
- the effect of MIS investor capital on land and water availability and pricing, the oversupply of certain agricultural commodities and the social fabric of rural communities.

3.3 The committee notes that investor-related issues concerning agribusiness MIS were examined by the Joint Parliamentary Committee on Corporations and Financial Services. The focus of this committee's inquiry is primarily on the implications of MIS for agricultural production. However, at the end of the chapter the committee briefly discusses the collapse of two major agribusiness MIS, and concerns about corporate governance and disclosure to markets and investors.

Agribusiness managed investment schemes

3.4 The term 'managed investment schemes' (MIS) describes collective investment structures where investors pool their money for a common enterprise. Agribusiness MIS encompass plantation forestry projects, as well as a range of horticultural crops such as olives, almonds, wine grapes, stone fruit, citrus and avocadoes.

3.5 Within the structure of agribusiness MIS, investors receive an interest in an agricultural project on an allocated parcel of land, which entitles them to the proceeds of what is grown or harvested on that parcel subject to management agreements with the scheme's manager. Investors do not own the land on which plantations or crops are grown.

3.6 Investors in forestry MIS typically pay an up-front fee that incorporates annual project costs, while non-forestry MIS combine an up-front fee with annual fees, reflecting different yield patterns between forestry and non-forestry activities.[1]

3.7 The tax treatment of agribusiness MIS investments has been the subject of some uncertainty in recent years, following various court decisions and a revised Australian Taxation Office (ATO) ruling on the tax deductibility of agribusiness MIS fees. The ATO's recently revised view that investments in agribusiness MIS are not allowable deductions was subsequently overturned in the Federal Court. However, the intervening legal uncertainty led to the government to establish separate legislative arrangements for forestry MIS to guarantee up-front tax deductibility for investment in that sector. The upshot is that investment in agribusiness MIS is still an allowable deduction backed by ATO product rulings, albeit under different legislative arrangements for forestry and non-forestry MIS.[2]

Is a tax deduction justified?

3.8 From a policy perspective, tax deductible investment in agribusiness MIS is justified as a means to attract capital to industries where perceived market failure exists. This has been exemplified by the approach taken to forestry MIS, where special legislative arrangements were made to protect tax incentives that attract investment in an industry where the time between investment and return is substantial, discouraging potential investors. Given the previous government's objective of trebling Australia's plantation timber output and declining state involvement in the sector, tax incentives for MIS were central to attracting the investment capital required to meet this objective.

3.9 However, the National Farmers' Federation (NFF) suggested to the committee that this policy intent of MIS has been lost:

> With almost 35% of MIS now accounted for by non-forestry projects, NFF questions whether this indirect form of support continues to effectively deliver targeted assistance to an area of perceived market failure. The NFF firmly supports the provision of direct and transparent mechanisms that provide targeted assistance to those sectors of the market that require help in managing risk. However, the NFF believes that MIS, in its current form, does not meet these criteria in delivering industry support, particularly given that a significant proportion of the initial investment is channelled to promoters, financial advisers, and other peripheral agencies.[3]

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1 For further explanation see Parliamentary Joint Committee on Corporations and Financial Services, *Inquiry into aspects of agribusiness managed investment schemes*, September 2009, pp 3-10.

2 For further explanation see Parliamentary Joint Committee on Corporations and Financial Services, *Inquiry into aspects of agribusiness managed investment schemes*, September 2009, pp 11-13.

3 *Submission 112*, p. 6.

3.10 Avocado farmer Mr George Ipsen agreed that MIS had spread beyond their intended targets:

> ...MIS [have] now crossed over into mainstream agriculture with potential to commercially destroy a [range] of industries. The primary producers, as with all businesses, have lived by the laws of supply and demand. The business model affected by MIS promoters in the plantation timber industry enables them to circumnavigate supply and demand...[4]

3.11 The MS&A submission warned that even more traditional agricultural activities would be 'targeted' by MIS:

> Discussion with researchers and promoters would indicate that the MIS industry will be increasing its activity and influence in more traditional agriculture industries. Currently, the beef industry is being targeted and now the MIS industry is looking to target the dairy industry. This would seem contrary to the spirit of the MIS Act, in that it was enacted to assist the development of agricultural industries, where it was considered a market failure had occurred in regard to capital availability. This is certainly not the case in the wine, cattle and dairy industries.
>
> Even in the case of the almond industry, the fundamentals were so strong that it was attracting capital without the need to overheat the market via the MIS industry.[5]

3.12 In addition, MS&A argued that the original forestry objectives of MIS had proven to be flawed:

> The overwhelming majority of schemes have focused on the short rotation pulpwood industry. There would seem to be a reasonable bodily of evidence to suggest that future international pulpwood demand will become increasingly competitive due to increasing global supply. Very little of the MIS wood has been grown with the saw log end product in mind. The result of this is that is very likely that we will have a glut in pulpwood product with and increasing shortage of saw log product. In summary then the MIS solution is only going to exacerbate the growing trade deficit in wood products as it has not dealt with the growing shortage of the high value timber products.[6]

3.13 Similarly, Dr Judith Ajani argued that the basis for granting forestry MIS tax incentives was flawed, because our major export markets for hardwood chips do not provide sufficient demand. Dr Ajani suggested that Australia is therefore facing a hardwood woodchip glut:

> ...from the mid-1990s there has been virtually no growth in Japan's imports of hardwood chips, and it is unlikely to change in the immediate future. So,

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4 Private capacity, *Committee Hansard*, 1 July 2010, p. 47.

5 *Submission 91*, p. 7.

6 *Submission 91*, p. 17.

> effectively since the launch of the Plantations 2020 Vision to triple Australia's plantation estate, which saw a substantial increase in investment in hardwood plantations, we have seen absolutely no growth in the major market for Australia's hardwood chips—and 85 per cent of Australia's chips are exported to Japan.[7]

3.14 Finally, valuer and agricultural economist Mr Samuel Paton told the committee that governments are subsidising forestry MIS to grow trees in unsuitable locations to produce a product that is made more cheaply in other countries.[8] Mr Paton stated that:

> ...on the mainland there has been this headlong rush to grow blue gums on very marginal land in areas well under the rainfall threshold that ABARE forecast. And they are so many hundreds of kilometres from a processing source. I just wonder where the economics and analysis by government are.[9]

3.15 MS&A rejected the suggestion that the same tax options are available to MIS and traditional farmers:

> It is rather disingenuous of the MIS industry to state that the same tax option is available to your typical family farmer. An MIS is given special rights under product rulings that place them at a distinct advantage to the family farm. Under Division 35 of the ITAA 1997, a venture must pass at least one of four 'objective tests' for the active investor (individual or partner) to have the right to offset losses from the business activity against other income. Under product rulings this is waived for investors in MIS projects under section 35-10.[10]

3.16 MS&A argued that the present MIS arrangements create unequal access to capital:

> ...this is an argument about access to capital. In the MIS case…[investors] can obtain capital which is subsidised by the government up to nearly 50% of the principal, being the top tax rate, while the farmer must buy in capital (from the banks) at full cost and with no subsidy on the principal amount.[11]

MIS tax incentives and capital allocation in rural areas

3.17 The committee recognises deep concern about the market distorting effects of MIS tax deductibility. Evidence submitted to the inquiry suggested that, because investment in MIS may be driven by tax incentives rather than profitability, there has

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7 *Committee Hansard*, 7 October 2009, pp 2-3.

8 Private capacity, *Committee Hansard*, 31 August 2009, pp 34-35.

9 *Committee Hansard*, 31 August 2009, p. 35.

10 *Submission 91*, p. 5.

11 *Submission 91*, p. 6.

been an inefficient allocation of capital in rural areas to the detriment of traditional agricultural enterprises.

3.18 Much of the evidence received suggested that many agribusiness MIS are inherently unprofitable. For example, fruit and vegetable grower representatives Growcom stated that:

> The introduction of [MIS] on a significant scale in horticulture is of concern to our people because their business is not based on getting a profit from their horticultural production. There are other ways of making a profit, so it is not market driven.[12]

3.19 They added:

> One of the positives of the MIS is that it has brought in significant economies of scale and management systems that have been useful in driving efficiency. That can be replicated by other business enterprises without that tax advantage issue. I think we have seen a lot of producers and family farms grow to very big and very professional outfits now without the tax incentive, so why have it?[13]

3.20 MS&A claimed that many MIS are unprofitable due to the incentive for promoters to inflate costs:

> Using independently sourced data the true cost of planting a hectare of land is significantly less than the promoter charges. Based on these figures you can achieve a reasonable return on your establishment costs. However, the current tax policy induces the promoter to highly inflate this upfront cost. Based on this cost, investors are destined never to achieve a reasonable return on their money. Why would the investor invest? For two reasons: firstly, the inducement of the tax deduction – the higher the better as far as the investor is concerned; secondly, the lack of any credible independent analysis about the real returns that investors are likely to receive from the investment and what it should cost.[14]

3.21 MS&A argued that the 'fundamental reason behind investors investing in these schemes can only be explained in terms of tax avoidance', which suggests that the tax avoidance measures in Part IVA of the *Income Tax Assessment Act 1936* should apply to these schemes.[15]

3.22 In addition to these concerns, Mr Ipsen also argued that inflated costs, driven by tax deductions, have made many of the MIS projects unprofitable:

> What is going on in the MIS industry? Why do we need it? Why don't farmers grow trees? There is a simple answer. There is no money in it.

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12 *Committee Hansard*, 4 March 2009, p. 22.

13 *Committee Hansard*, 4 March 2009, p. 26.

14 *Submission 91*, p. 9.

15 *Submission 91*, p. 2.

> There is an example in my area. The MIS promoters next door to me were charging investors $9,000 a hectare to plant a hectare of blue gums. I have planted and grown commercial blue gums. It costs me $1,000 a hectare. You can allow another $500 and say it was $1,500 over that 10-year period. For that $1,500 I get bugger-all taxation deduction. The guy who invests $9,000, the promoter, gets 48c or 45c in the dollar tax deduction for that. It is just a totally inequitable situation. They were paid $9,000. At the end of that 10-year period when I sell my trees they will be doing exactly the same on the property adjacent to me and they will get back about $4,500. The dumb investors put in about $9,000 and they will get $4,500 back.[16]

3.23 The National Association of Forest Industries (NAFI) conceded that there have been 'cases where the performance of plantations has not been good', but noted that the drought had contributed to this underperformance.[17]

3.24 The presence of investment drivers other than commercial profitability has, it is claimed, distorted investment decisions in rural areas. The NFF stated:

> ...in many instances, the MIS mechanism does not promote sound investment decisions in rural and regional Australia. The NFF believes that many MIS projects have created negative distortions of resource allocation in regional areas.
>
> The NFF believes that decisions to invest in MIS are largely based on the tax deductibility of the investment, rather than driven by long-term profitability. As a result, MIS have traditionally been primarily focused on industries with a high proportion of up-front expenses, with little regard given to the output returns generated.[18]

3.25 NFF stressed the importance of agricultural activity being guided by price signals rather than tax incentives:

> ...prices are a fundamental signal for farmers about what to produce, where and in what quantities. Farmers need governments to allow market forces to work, and in doing so, create a global food production environment that is more flexible, reliable and sustainable. As is the case with the current plethora of government distortions within the global trade of agricultural goods, the NFF believes that the MIS mechanism is also acting to mask price signals for farmers, leading to inefficient allocation of the world's scarce resources and exacerbating the global food security issue.[19]

3.26 The NSW Farmers Association also argued that MIS 'send incorrect market signals and distort investment decisions':

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16 *Committee Hansard*, 1 July 2009, p. 48.

17 *Committee Hansard*, 7 October 2009, p. 128.

18 *Submission 112*, p. 3.

19 *Submission 112*, pp 4-5.

> When firms are selling products (i.e. woodlots, olive groves etc.) and investors are primarily focused on buying something else (receiving a tax deduction), issues develop when the financial focus is shifted away from the commercial viability of the business' productive operation. The result sees a business entity not operating under the normal market supply and demand forces that guide sound operating decisions.[20]

3.27 The Sunraysia Horticultural Branch of the Victorian Farmers Federation wrote that MIS investment monies get widely distributed across scheme promotion activities, rather than actually utilising economies of scale for profitable agricultural production:

> Conventional enterprises taking advantage of possible economies of scale are far more likely to achieve a valid economic outcome with respect to the resources consumed than are MIS because the imperative driving conventional enterprises is a return on funds invested directly in the enterprise.
>
> In contrast, the MIS enterprise is one entity in a chain of entities artificially constructed in order to yield tax deductible items for sale in order to yield profits for scheme promoters. Most of the money gets blown in fees, charges and commissions.[21]

3.28 Mr Ipsen argued that MIS create an uneven playing field for traditional enterprises:

> MIS promoters do not borrow funds and incur interest charges for project development, tax driven investor funds. MIS promoters are not constrained by the laws of supply and demand. Investors own the production and therefore carry the risk. MIS promoters are not exposed to industry failure as they made their profit upfront and ongoing through management fees. Non-MIS producers receive their project tax deductions over time, over the life of the crop in my case. Non-MIS producers borrow funds for project development and incur interest costs. Non-MIS producers' projects are constrained by the forces of supply and demand. Non-MIS producers' projects are exposed to industry failure.[22]

3.29 NAFI stated that investment in forestry MIS is not diverting capital that would otherwise be applied to traditional agriculture:

> Retail forestry investment constitutes a very minor part of the greater investment market. Any view that retail investments in forestry or non-forestry divert available funds away from other productive investment in rural and regional Australia is incorrect. Retail investment forest growers are not generally focused on the flow-on socio-economic consequences (such as regional employment) of their investments. Rather they are

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20 *Submission 122*, p. 6.

21 *Submission 100*, p. 3.

22 *Committee Hansard*, 1 July 2009, p. 47.

> motivated by traditional financial growth incentives. The capital that retail forestry projects attract would otherwise be invested in other investment markets such as the share or property markets and may not necessarily result in increased economic activity in rural and regional Australia.[23]

3.30 NAFI noted that, in fact, forestry attracts investment and benefits to areas that would otherwise miss out:

> Retail forestry investment does not 'crowd out' investment in rural and regional Australia, because without retail forestry, rural and regional Australia would not be able to attract a similar level of investment.[24]

3.31 Dr Jacki Schirmer suggested that the effects of MIS-driven plantation expansion on food production needed to be kept in perspective, and observed that MIS-related declines were localised and of negligible national consequence.[25]

3.32 Evidence to the inquiry also suggested that the recent failure of MIS caused investors to lose confidence in the whole agricultural sector as a sound investment.[26]

Effects on agricultural producers and rural communities

3.33 Evidence to the committee suggested that the investment distortions created by tax deductible MIS were having the following detrimental effects on traditional food producers:

- artificially increasing demand for, and prices of, agricultural land and water;
- creating an oversupply in certain commodities; and
- affecting the social fabric of rural communities.

Land and water availability and prices

3.34 A number of submitters argued that the lower cost of capital for MIS distorts the market for agricultural land. For example, NFF argued that the relative advantage of MIS in terms of access to capital caused such schemes to bid up land prices to levels local farmers cannot compete with.[27] The NSW Farmers Association, for example, submitted:

> The Association is aware that land acquisition markets should enable the transfer of title to the highest bidder. However competitive bargaining for

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23 *Submission 128*, p. 5.

24 *Submission 128*, pp 5-6.

25 Private capacity, *Submission 108*, p. 3.

26 See NSW Farmers Association, *Submission 122*, p. 6; and National Farmers' Federation, *Submission 112*, p. 7.

27 *Submission 112*, p. 5.

> land needs to be done between potential bidders from a level playing field. The Association is, therefore, of the view that the lower cost of capital available to MIS affords them an advantage that enables them to outcompete farmers for land acquisitions.[28]

3.35 Further, MS&A suggested that it will cost $2200 per hectare to restore timber country to profitable grazing country, which will in many cases be too expensive for the exercise to be economical, leaving the land unproductive.[29] Mr Sam Paton, a Senior Valuer and Agricultural Economist with Sam Paton & Associates, suggested that the cost of tax incentives for MIS would be better used towards rehabilitating land under failed MIS projects.[30]

3.36 In response to such claims, NAFI commented that forestry still accounted for a very small proportion of agricultural land use:

> Land degradation, urban development and rural residential development are having a far greater impact on land use change than plantation expansion. Although timber plantations are very obvious and do change the appearance of local landscapes, the total amount of rural land being planted is very small.
>
> In the five regions that in 2000 accounted for about 70 percent of total plantations as well as having major timber processing industries, no more than 6 per cent of the land was under plantations. Even in Local Government Areas with the highest concentrations of plantations, maximums of 5 to 20 per cent of agricultural land are used for plantations.[31]

3.37 NAFI argued that rural land prices had been increasing everywhere, irrespective of the presence of MIS:

> Rising values of rural land have been driven by a combination of factors that include low interest rates, high commodity prices, strong international demand for Australian farm products, rationalisation in the rural sector with farm amalgamations, competition for farms from overseas buyer, and multiple changes in land use.
>
> ...
>
> Nationally, average prices of broad-acre farms sold in Australia rose by 34 per cent in 2004-05, following an average increase of 19 per cent in 2003-04. At that time, plantation investment companies had purchased around 3 per cent of the total of around 10,000 broad-acre properties sold in each of the previous four years. It is simply not possible that 3 per cent of sales could drive a 34 per cent increase in land values.[32]

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28 *Submission 122*, p. 5.

29 *Submission 9*, p. 16.

30 *Committee Hansard*, 31 August 2009, p. 37.

31 *Submission 128*, pp 1-2.

32 *Submission 128*, p. 2.

3.38 Dr Schirmer indicated to the committee that her research in Western Australia and Tasmania suggested MIS-driven plantation expansion had partially contributed to land price rises:

> The studies found that during periods of rapid plantation expansion, MIS companies have paid higher than average prices for rural land, and there has been somewhat higher than average land price increase in regions where large areas of plantation are being established.
>
> Land prices have, however also increased rapidly in many other rural areas. In particular, regions where there is considerable demand for 'rural residential' or 'seachange' properties have often experienced greater land price growth than regions where rapid plantation expansion is occurring.
>
> In high rainfall regions, even where few/no plantations are established, there have been some periods of rapid land price growth in the last 20 years similar to those seen in plantation regions during rapid plantation expansion phases, driven by demand from industries such as the dairy industry. This indicates that in the absence of plantation expansion, land prices would have grown but perhaps not as much as particular points in time.[33]

3.39 NSW Farmers' Association complained that MIS plantations are excessive water users, due to deeper root systems than pasture and crops and the depth of contour furrows used by plantation operators.[34] NFF also expressed concern about water use and the capacity for MIS to distort water availability of water through developing water markets.[35] Mr Ipsen told the committee:

> On the next block up the road, Great Southern came in and planted it wall to wall with blue gums. They consume hundreds and hundreds of megalitres of water on that side. They have no licence. There is no restriction.[36]

3.40 Evidence was also provided about the water entitlements being used by irrigated crops grown as part of MIS projects. For example, Mr Paton advised that:

> ...two of the largest recipients of…[MIS] money were olive and almond schemes, which have drawn off huge amounts of water.[37]

3.41 NAFI recognised the potential effects of forestry on water availability and indicated support for further research:

> The effect on streamflow of converting agricultural land to timber plantation is related to the catchment area affected. In smaller catchments, it is difficult to detect an impact when less than 20 percent of the catchment is

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33 *Submission 108*, p. 2.

34 *Submission 122*, pp 5-6.

35 *Submission 112*, p. 5.

36 *Committee Hansard*, 1 July 2009, p. 48.

37 *Committee Hansard*, 31 August 2009, p. 30.

> planted. In major plantation regions, plantations occupy between 1 and 6 percent of large catchments.
>
> Some plantations in some parts of some catchments in some soil and rainfall conditions have the potential to reduce environmental flows.
>
> The retail forestry sector strongly supports and contributes to research that will enable plantations to be more strategically located in different catchments, in the context of the impacts of all land uses on water yield and quality.[38]

Oversupply

3.42 Tax incentives for agribusiness MIS have also been blamed for contributing to an oversupply of certain commodities. Evidence suggested that reduced profit motives for MIS had caused scheme operators to pursue projects where pre-existing market conditions have not justified it. NSW Farmers Association commented that:

> The rapid expansion of non-forestry MIS has significantly affected the supply levels of certain commodities which inevitably has a deflationary effect on the prices received by traditional farm producers of those commodities.[39]

3.43 Grape plantings via MIS have been of particular concern. Wine Grape Growers' Australia argued that MIS were exacerbating existing oversupply problems in their industry:

> ...the continuation of Vineyard Managed Investment Schemes (MIS) under the current tax structures and disclosure regulations would only serve to exacerbate the chronic oversupply of wine grapes and wine within the Australian wine industry, to which Vineyard MIS have been a significant contributor. Vineyard MIS now represents 10% or 16,000 hectares of the national vineyard estate – growing from a zero base little more than a decade ago.
>
> WGGA maintains that the tax-driven nature of many Vineyard MIS has been at odds with the prevailing market conditions within the wine grape sector and Australian wine industry – meaning that despite general indications of the buoyancy of the sector within some Vineyard MIS prospectuses, beyond the initial tax deductions available to investors, there is limited likelihood of generation of profits from many of these vineyards over the longer term.[40]

3.44 The Sunraysia Horticultural Branch of the Victorian Farmers Federation informed the committee that even more grapes are being planted under MIS:

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38 *Submission 128*, p. 4.

39 *Submission 122*, p. 7.

40 *Submission 111*, p. 1; see also National Farmers' Federation, *Submission 112*, p. 5.

> The wine industry in currently in surplus despite the drought, yet currently thousands of hectares are being developed by MIS in Sunraysia and the Barossa Valley and elsewhere, over inflating production capability and destroying the prospects of existing growers and their communities.[41]

Rural communities

3.45 There were concerns raised throughout the inquiry that investment in MIS had altered the social fabric of rural communities, due to the changed personnel and working patterns of those employed by scheme operators.

3.46 Mr Robert Belcher, the Managing Director of Sustainable Agricultural Communities Australia Limited, observed:

> ...you might take a property that was a wool-growing property that was generating, say, $400,000 a year gross. A lot of that money went through the community: there were children getting on the school buses, there was a mail delivery, the grocery store depended on it and so did the doctor and what have you. Once it becomes a plantation and the planting is completed, you have got one employee who is there every now and then every week or so.[42]

3.47 The NSW Farmers' Association noted that the different workforce required by MIS projects affected community participation more broadly:

> Plantation workers, are often transient seasonal workers, and rarely replace the families who formerly lived on the farms purchased by MIS managers. This affects the demographic composition of communities, often undermining local community participation in schools and local services loss of participants and population drift to larger centres.[43]

3.48 However, NAFI claimed that the presence of the forestry industry increased local employment:

> Plantation forestry is more labour-intensive than local agriculture, providing 2.5 jobs for every 1000 ha of plantation, compared with 1.8 jobs per 1000 ha used by other agriculture.[44]

3.49 Dr Schirmer suggested that MIS plantations will increase total employment over time, but shift employment to larger regional centres:

> MIS plantations generate more jobs in total than broadacre sheep and beef grazing and cropping. However, they only generate more jobs once plantations are mature and enter a cycle of harvesting and replanting, and when the downstream processing generated after harvest is included in the

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41 *Submission 100*, p. 5.

42 *Committee Hansard*, 31 August 2009, p. 78.

43 *Submission 122*, p. 7.

44 *Submission 128*, p. 6.

> analysis. Jobs in the plantation industry are typically located in regional towns and cities, whereas agricultural jobs are typically located in smaller towns and on rural land, indicating that a shift to plantations is accompanied by a change in the location of employment.[45]

3.50 Dr Schirmer indicated that the de-population effect from this land use shift is not significant, however, she acknowledged that an influx of new residents can be socially challenging:

> The expansion of plantations, whether MIS funded or otherwise, leads to a small net loss of resident population from properties established to plantation via sale or lease of land to a plantation company. The population loss resulting from plantation expansion at the individual property scale is no larger than that resulting from other trends such as farm amalgamation on other properties, and as such there is no observable impact on rural population at scales larger than the individual property. It is, however, common for previous residents to shift away from properties established to plantation, and for new residents to shift onto these properties. This turnover in population can create significant social change in rural communities.[46]

3.51 Dr Schirmer noted that 'these new residents may not always integrate well into local communities'.[47]

Recent MIS collapses

3.52 In 2009, MIS companies Great Southern and Timbercorp collapsed, generating widespread concern among investors and rural communities about the fate of the schemes for which they were the responsible entity. These included timber plantations, almonds, olives, grapes, citrus, avocadoes and mangoes and between the two companies represented over half the total value of all agricultural managed investment schemes.[48]

3.53 The Australian Securities and Investment Commission (ASIC) informed the committee that the business models of Great Southern and Timbercorp were flawed as they involved the taking of investment capital up-front, and this was not sufficient or well-managed enough to last over the course of projects:

> ...you need to look at the business models, and the business model of Great Southern and Timbercorp: why it declined and the way it was structured in terms of the way they priced the future service delivery—basically, taking it

45 *Submission 108*, p. 4.

46 *Submission 108*, pp 5-6.

47 *Submission 108*, p. 7.

48 Australian Securities and Investment Commission, *Committee Hansard*, 23 October 2009, p. 17; Parliamentary Joint Committee on Corporations and Financial Services, Aspects of a*gribusiness managed investment schemes*, 7 September 2009, pp 14-15.

> up-front. They clearly underestimated what it cost to do what needed to be done and there was also the issue of the way they managed their working capital and not having…[adequate] working capital.[49]

3.54 Mr Ron Willemsen of Macpherson and Kelly Lawyers described the flawed business model of Timbercorp, which he suggested collapsed when new revenue was threatened by the government's proposed changes to the taxation of MIS:

> The significance of early 2007 is the government announcement that the application of the tax laws was going to change for horticultural MIS projects. The up-front tax deduction was no longer going to be allowed, which had a very significant impact on the sales of new MIS projects outside of forestry, and it seems that Timbercorp, and many other agribusiness companies like it, relied heavily on the new sales revenue in order to fund the ongoing operations of their business.[50]

3.55 Mr Willemsen also alleged that Timbercorp deceived new investors about the company's prospects prior to its collapse:

> Investors made fresh financial commitments throughout 2007 and 2008, not knowing the Timbercorp group was on the verge of collapse. Their long-term projects were going to cost the investors a lot of money and were not going to deliver the expected returns, or anything remotely near the expected returns.
>
> ...
>
> The case is essentially about nondisclosure of material financial information that we believe ought to have been disclosed about the viability of the company at the time.[51]

3.56 With regard to Great Southern's forestry MIS, Mr David Mond argued that by 2005 at the latest—when it became apparent that yields were below expectations and new capital would be required to prop up existing schemes—these has become nothing more than a ponzi scheme.[52]

3.57 A former Great Southern board member, Mr Jeffrey Mews, explained that an up-front fee made it easier for the company to attract investors:

> Other companies had an ongoing fee situation. The Great Southern model did not have that ongoing fee situation. It was felt, and I have no difficulty with the logic, that getting smaller fees from relatively small investors on an annual basis over a 10-year period was probably not a good commercial

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49 *Committee Hansard*, 23 October 2009, pp 17-18.

50 *Committee Hansard*, 23 October 2009, p. 63.

51 *Committee Hansard*, 23 October 2009, p. 60.

52 Private capacity, *Committee Hansard*, 31 August 2009, p. 67.

> way of going about things. You get fallout. People have different fortunes on the way through.[53]

3.58 Mr Bruce Dennis informed the committee that actual woodlot yields suggested that Great Southern was providing misleading information about potential results in its marketing material. He commented that:

> ...with the woodlots it had always been marketed as a management objective to get 250 cubic metres per hectare per 10 years of wood growth. Yet it appeared from looking at the GSL investment update for May 2008 that the results were that the 1994 project showed 123 cubic metres, the 1995 project showed 166 cubic metres and the 1996 project showed 197 cubic metres, and it was estimated that the 1997 project would show only 135 cubic metres, the 1998 project 157 cubic metres and the 1999 project 162 cubic metres. So there seemed to be a pattern of actual results very much less than the projected results in the marketing program from Great Southern Ltd. Notwithstanding the riders in the disclosure documents ... the results were so dismal that that really should have been revealed more significantly.[54]

3.59 Mr Dennis also suggested that the practice of the company purchasing underperforming crops masked poor returns to potential investors:

> The 1994 crop, for instance, was bought in full from investors by a Great Southern Ltd subsidiary in July 2005 for $6.4 million. The crop that was harvested gave a loss to that subsidiary of about $4.3 million. That would have meant that investors would have only received $2.1 million if that subsidy had not been put through by Great Southern Ltd. The effect of that was to give credence to new investors after July 2005 to think that the investments were showing a good return.[55]

3.60 Former Chairman of Great Southern Mr Peter Patrikeos informed the committee that he disagreed with that decision to acquire investors' woodlots using a subsidiary of Great Southern, at shareholders' expense.[56] The committee also heard evidence concerning the sale of Great Southern shares by then Chief Executive John Young in February 2005, prior to the company's belated disclosure to the market and investors that crops would not meet expected yields.[57]

3.61 ASIC noted that the current regulatory regime, administered by ASIC, does not preclude investment failure for products ,such as MIS, which are not prudentially regulated. ASIC Commissioner Mr Greg Medcraft stated:

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53 Private capacity, *Committee Hansard*, 1 July 2009, p. 19.

54 Private capacity, *Committee Hansard*, 7 October 2009, p. 24.

55 *Committee Hansard*, 7 October 2009, p. 24.

56 *Committee Hansard*, 1 July 2009, p. 3

57 *Committee Hansard*, 1 July 2009, p. 9; see also Grigg, A., 'How timber chief cashed in his chips', *Australian Financial Review*, 10 June 2009, p. 1.

> ...the Corporations Act regime is premised on an economic philosophy that markets drive efficiencies and markets operate most efficiently when there is a minimum of regulatory intervention, hence the regime administered by ASIC is designed to promote market integrity and consumer protection solely through the conduct and disclosure regulation. Of course, conduct and disclosure regulation does not involve any guarantee that regulated products and institutions will not fail and that promises made to retail investors will be met.[58]

3.62 ASIC informed the committee that it is the responsibility of the regulator to ensure that an MIS constitution and compliance plan meets the requirements of the Corporations Act, and that disclosure material is not misleading or deceptive.[59] It is then for investors to make their own judgment about the MIS business model and likely performance of the investment. Not being a prudential regulator, ASIC stated that it can have a limited preventative role:

> Inevitably, ASIC come in after a collapse has occurred. We are there as an oversight body to see the law is complied with and, as such, we will often arrive at the scene of the accident—that is, after the accident has occurred and to see who caused it. Our powers are limited to act ahead of time. For example, we do not have power to regulate capital adequacy or to prohibit certain business models.[60]

Great Southern's Project Transform

3.63 Although the collapse of Great Southern and Timbercorp affected a great number of individual agricultural projects, one project involved in the Great Southern collapse was significantly prominent during the inquiry, so as to warrant further discussion in this report. That is, the Great Southern scheme called Project Transform.

3.64 Under Great Southern's Project Transform scheme—which was proposed prior to the company's eventual demise—investors were asked to vote in favour of converting their interests in woodlot and cattle MIS into shares in the company. Ultimately, these shares became worthless when the Great Southern group of companies collapsed.

3.65 The circumstances of the cattle MIS related to Project Transform were of particular interest to the committee.

3.66 Project Transform was supported as being in the best interests of investors by an independent report from KPMG, a national company which provides audit, tax and

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58 *Committee Hansard*, 23 October 2009, p. 2.

59 Mr Greg Medcraft, Commissioner, Australian Securities and Investments Commission, *Committee Hansard*, 23 October 2009, p. 3.

60 Mr Greg Medcraft, Commissioner, Australian Securities and Investments Commission, *Committee Hansard*, 23 October 2009, p. 4.

advisory services.[61] In evidence to the committee Mr Gary Wingrove, a National Managing Partner with KPMG, stated that KPMG's role was not to make a judgment on the merits of Great Southern's cattle MIS:

> The fact that particular people might have a view that the cattle schemes were not worth anything because of the way they were set up, of itself, does not mean that a particular transaction was not fair and reasonable. It is a relative assessment of the value of something you hold before and the value you hold after.[62]

3.67 Mr Wingrove told the committee that, with the assistance of advice from cattle experts, KPMG concluded that investors would have more value in the company's shares than in units in the MIS.[63]

3.68 However, the committee notes concerns about the independence of these experts and the quality of the advice provided. In particular, the committee received evidence that Dr Ross Ainsworth of Australian Livestock Services, who was responsible for the independent advice, was also responsible for overseeing the welfare of the relevant cattle stock on behalf of Great Southern itself (uncertainty about the actual existence of the leased cattle is noted below at paragraph 3.70). ASIC advised the committee that it had sought more prominent disclosure of information relating to the low-end nature of the valuations pertaining to the relevant cattle stock, the interest being surrendered and the high-end valuation of the company's shares.[64]

3.69 The committee heard evidence that there may have been significant pressure exerted on some investors to support Project Transform, as well as procedural breaches associated with the constitutional amendments required to enable it.[65] ASIC informed the committee that it had ensured scheme members were given appropriate disclosure material in the lead-up to the meeting and vote, but that it would prejudice ASIC's investigations to make any comment on the question of whether any undue pressure was applied to investors.[66]

3.70 Evidence to the committee also raised concerns about the cattle which were said to comprise Great Southern's cattle MIS. In particular, it was suggested that the cattle were sold as being premium King Island cattle with high calving rates, when the majority were in fact grazed on rangelands in the north of Australia. Furthermore, the committee notes there was also uncertainty about the very existence of all the leased

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61 *Committee Hansard*, 7 October 2009, p. 56.

62 *Committee Hansard*, 7 October 2009, p. 64.

63 *Committee Hansard*, 7 October 2009, p. 65.

64 Mr Greg Medcraft, Commissioner, Australian Securities and Investments Commission, *Committee Hansard*, 23 October 2009, p. 12.

65 See for example Mr Frederick Gulson, Legal Executive, DC Legal Pty Ltd, *Committee Hansard*, 7 October 2009, pp 29-30.

66 *Committee Hansard*, 23 October 2009, p. 14.

cattle that were subsequently traded by investors for shares under the Project Transform scheme.[67]

Committee view

3.71 The committee is of the view that it is now time to reconsider the tax advantages applied to investments in MIS. Tax breaks for forestry are undesirable when there is a looming woodchip glut, and there has never been a reason to provide these incentives for growing horticultural products or beef. The effect of MIS is to distort investment decisions to the detriment of traditional farmers in these industries, and those competing for the same land and water resources. The allocation of resources towards agricultural activity should always be guided by price signals and profitability, rather than by personal tax incentives.

3.72 The committee also holds the view that these schemes have a tendency to develop a ponzi-like character, where new capital becomes constantly required to prop up previous projects' underperformance. This undermines the reputation of agriculture as a sound investment and devastates communities that have become dependent on their existence.

3.73 Finally, the committee wishes to express its grave concern about corporate conduct associated with Great Southern and the Project Transform debacle. These matters need to be examined to the fullest extent possible to ensure that a repeat of this type of reckless corporate behaviour within the agricultural sector does not re-occur.

67 See for example Mr Bruce Dennis, *Committee Hansard*, 7 October 2009, pp 31, 36; Ms Janette Townshend, Director-Accountant, Townshend Prudential and IWC Woodlot Cooperative, *Committee Hansard*, pp 39-40.

Chapter 4

Innovation and productivity

Introduction

4.1 The productivity of Australian agriculture, which refers to the efficiency of using inputs to produce a specific level of outputs, is critical to the viability of farming given the reduced terms of trade outlined in Chapter 1. This section of the report briefly discusses the importance of agricultural research and development to drive innovation and productivity gains in the agricultural sector.

4.2 The Department of Agriculture, Fisheries and Forestry (DAFF) explained that:

> Productivity growth has been the main driver of growth in agricultural output in Australia, enabling farmers to remain internationally competitive and sustain their businesses and incomes.[1]

4.3 A combined submission from red meat industry organisations stated that 'rising input costs and the Australian dollar are severely impacting on producer margins and viability', and that 'productivity improvements are essential to maintain affordability for consumers and viability for producers'.[2]

4.4 The Commonwealth Scientific and Industrial Research Organisation (CSIRO) also commented that a long-term decline in terms of trade meant that 'increases in productivity are essential to maintain the viability of production'. The CSIRO submission stated that improvements to input use efficiency and yields are essential:

4.5 To increase, or at least maintain, the economic viability of production agriculture a number of major issues need addressing. In essence, the immediate economic viability of agriculture is determined by the balance struck between the farm gate returns obtained as a result of yield and quality of the commodity produced, and the total cost of inputs needed to generate that yield. Hence, economic viability for growers may be achieved by tackling either of these factors, but only by controlling or reducing input costs per unit of product and increasing farm gate returns (by greater yield and or quality) are we likely to maintain economic viability as well as tackle the problem of food security.[3]

4.6 In this chapter the committee considers research and development (R&D) as a productivity driver; current agricultural R&D arrangements in Australia; recent

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1 *Submission 93*, p. 17.

2 *Submission 29*, p. 10.

3 *Submission* 27, p. 6.

productivity trends; concerns about declining investment in R&D; and proposals for specific areas of R&D need. At the end of the chapter, the committee discusses concerns raised about the effect of plant gene technology and related patenting activities on future food production.

Research and development driving productivity

4.7 The Rural Industries Research and Development Corporation (RIRDC) told the committee that innovation through R&D is a key driver for diversifying into new rural industries and achieving strong productivity growth in traditional ones:

> In the face of climate change, new industries may provide greater resilience for Australia's agricultural regions, through:
>
> - greater diversity of agricultural options better suited to future climates
>
> - greater water use efficiency
>
> - better heat tolerance
>
> - a lighter greenhouse footprint.
>
> Through well-targeted R&D, new industries can also provide alternative crops and farming systems for irrigation areas in crisis; more drought resistant crops and animals for dryland situations; and more greenhouse efficient and heat tolerant crops and systems to enable us to make better use of our water-abundant tropical northern areas.[4]

4.8 The DAFF submission explained the contributing factors to productivity growth, highlighting the importance of technological advancement through innovation as a key component:

> Productivity growth has come from expanding outputs, while increasing efficiency in input use. This may include using fewer inputs overall, different input combinations, changing the output mix (e.g. shifting into cropping, away from sheep). Factors external to farm businesses that have influenced long term productivity over the past thirty years provide an indication of potential drivers of future productivity growth. These include:
>
> - Drought, which has caused significant downturns in productivity
> - Overseas demand - significant growth in overseas demand for Australian agricultural products has provided strong incentive to innovate and expand output
> - Policy - for example, deregulation during the 1980s and 1990s caused dramatic adjustments in the agriculture sector, and policy action can stimulate or slow down productivity
> - Water allocations and water markets, which continue to influence farm decision making and potential productivity gains

4 *Submission 42*, p. 1.

- Access to new technologies - facilitating access can enable productivity growth

> Technological progress in particular is a major driver of productivity gains through shifts in the composition of inputs used. Most notable, labour use in agriculture has fallen at an average rate of 1.7 per cent a year over the last thirty years. Rates of growth in capital and land use (per unit of output) have also fallen. In contrast, there has been a notable rise in the use of materials and services in agricultural production. Use of these inputs - including fodder, seed, fuel, chemicals and fertiliser - have increased by 2.4 per cent a year over the last three decades.[5]

4.9 CSIRO told the committee that wheat productivity is comprised of two elements:

> ...when you look at historical productivity trends—this is in terms of yield of the Australian wheat crop—we do about a two per cent increase in productivity per year. About one per cent of that is in direct genetic gain for yield. The other per cent or so is from improved management practices.[6]

Agricultural research and development in Australia

4.10 DAFF outlined the Commonwealth's contribution to agricultural innovation through research and development funding:

> Through diverse programs and organisations the Commonwealth contributes over $500 million to the more than $1.3 billion worth of primary industries R&D conducted annually in Australia. The principal vehicles are:
>
> - Rural Research and Development Corporations and Companies (RDCs) ($224 million in Commonwealth funds in 2007-08);
> - Cooperative Research Centres (CRCs) ($105 million in direct funding);
> - The Commonwealth Scientific and Industrial Research Organisation (CSIRO) (>$250 million);
> - The Bureau of Meteorology (BoM);
> - Australia's Farming Future administered by DAFF: the Australian Government's climate change initiative for primary industries. It provides $130 million over four years for a number of programs to help primary producers adapt and respond to climate change.[7]

5 *Submission 93*, p. 18.

6 *Committee Hansard*, 12 October 2009, p. 85.

7 *Submission 93*, p. 25.

4.11 Industry levies on producers are also a major contributor to research and development funding through rural research and development corporations and industry owned companies.[8]

4.12 CSIRO is a major source of innovation utilised by Australian producers for productivity growth through its Livestock Industries and Plant Industry divisions, as well as its Food Futures and Climate Adaptation National Flagships.[9] In evidence to the committee, CSIRO provided an overview of research undertaken in the following areas, as part of its 'new focus' on food security:

- improving water use efficiency in wheats to improve yields under dry conditions;[10]
- transferring genes to improve fertiliser use efficiency of wheat and barley;[11]
- protecting wheat from stem rust;[12]
- improving plant yields by manipulating photosynthesis and making roots deeper and more efficient;[13]
- genetic markers in livestock to help select for productivity, quality, net feed intake, tick resistance and methane production traits;[14]
- research on livestock efficient feed conversion and reducing methane emissions;[15]
- researching carbon sequestration in soils, particularly effective measurement;[16]
- improving aquaculture techniques to maximise yield.[17]

Recent productivity trends

4.13 DAFF outlined recent productivity trends in Australian agriculture:

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8 *Submission 93*, p. 25.

9 *Submission 27*, p. 8.

10 *Committee Hansard*, 12 October 2009, pp 59-60

11 *Committee Hansard*, 12 October 2009, p. 85.

12 *Committee Hansard*, 12 October 2009, p. 60.

13 *Committee Hansard*, 12 October 2009, pp 60-61.

14 *Committee Hansard*, 12 October 2009, p. 62.

15 *Committee Hansard*, 12 October 2009, pp 63, 65.

16 *Committee Hansard*, 12 October 2009, p. 65.

17 *Committee Hansard*, 12 October 2009, pp 80-82.

> Agricultural productivity growth consistently exceeds productivity growth in other sectors with agriculture, fisheries and forestry productivity growth averaging 3.1 per cent over the past 20 years, compared with 1 per cent economy wide.
>
> Productivity of Australian farms.. has risen strongly for cropping specialists and the mixed crop-livestock industry - averaging 2.1 per cent and 1.5 per cent a year respectively from 1977-78 to 2006-07. Beef specialists achieved the same average performance level as the mixed crop-livestock industry over the past three decades. Their productivity growth coincided with high output growth and relatively marginal growth in input use. The sheep industry continues to lag behind the broadacre sector in terms of long-term productivity growth. Between 1977-78 and 2006-07, the industry has experienced a decline in both output and input use...[18]

4.14 Unfortunately, productivity growth has slowed recently following a spurt, with drought a major contributor:

> Broadacre productivity growth appears to be slowing since around the turn of the century. Similar to most industries, agriculture experienced a growth spurt in the 1990s, with broadacre productivity growing by 3.4 per cent on average during the 1990s compared to an average of 1.5 per cent over the last 30 years (1977-78 to 2006-07). In the last decade (between 1997-98 and 2006-07), there appears to be a possibility that productivity growth has slowed, falling to an average rate of 1.4 per cent a year. Recurring drought has most likely had a significant impact on productivity growth with severe downturns in output during drought years 1994-95, 2002-03 and 2006-07.[19]

Declining agricultural research and development

4.15 Although drought has had a significant effect on agricultural productivity in the past decade, evidence to the committee conveyed considerable concern that funding for research and development had reached insufficient levels to maintain necessary productivity improvements in the future.

4.16 Dr Barry McGlasson, Adjunct Professor with the Centre for Plant and Food Science at the University of Western Sydney, expressed his concern over recent cuts to CSIRO funding for agricultural research:

> In the May 2008 budget, CSIRO's budget was cut by $63 million over four years. CSIRO announced that it was closing some research stations including beef cattle at Rockhampton Qld, the 90 year-old Horticultural Research Centre, Merbein, Victoria and further reducing its footprint at the Food Science Laboratories at North Ryde, NSW. CSIRO no longer conducts work on the postharvest physiology and technology of fresh foods, and technology of refrigerated transport. CSIRO management justified these cuts by stating that it spent 29 per cent of its budget on

18 *Submission 93*, p. 17.

19 *Submission 93*, pp 17-18.

> agriculture whereas agriculture only contributes 12 per cent of GNP. This ignores the fact that agriculture generates 30 per cent of Australia's export income and provides many jobs in food services, processing and distribution.[20]

4.17 He commented that important scientific capability in the area must be retained:

> These short term responses of Federal and State Governments to reduce spending on agricultural R&D ignore the fact that our agricultural success and competitiveness depends on comprehensive and cumulative programs, over decades. It cannot be traded from year to year in CRCs and CSIRO Flagships. Once these capabilities are lost it will take decades to recover.[21]

4.18 The Rural Industries Research and Development Corporation (RIRDC) suggested that recent R&D cuts could limit essential alternative agricultural options:

> Research capacity for rural industries has declined in Australia over the last five years and there is concern that this is worsening. State agencies are rationalizing and concentrating their R&D interests, in some cases resulting in reduced co-investment in research. This will have a significant impact on the provision of pertinent R&D for food industries, and will have a considerable negative impact on the delivery and development of alternatives to current food industries that are becoming unsustainable.[22]

4.19 A combined submission from red meat industry organisations claimed that declining public expenditure on R&D threatened future productivity growth:

> Public expenditure on rural R&D grew strongly from the 1950s through until the late 1970s but has been flat (on a constant dollar basis) since then. As a percentage of agricultural GDP, public expenditure on rural R&D has declined from five percent in 1986 to three percent (Mullen, 2007). Notably, the contribution of rural RDCs to public rural R&D expenditure has grown from 15 percent in the 1980s to currently 50 percent. This indicates that there has been a very significant decline in direct expenditure in rural R&D by Federal and State Governments. If, as is likely, trends in expenditure on R&D in the red meat industry reflect those in agriculture overall, then given the long lags involved in the take up of R&D results there is a real possibility that the acceleration in productivity growth achieved over the past 10 to 15 years may not be maintained in future decades.
>
> ...
>
> If the Australian red meat industry is to take advantage of the opportunity offered by growth in global demand for meat over the next few decades then the relative decline in expenditure on R&D, especially by Federal and

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20 *Submission 47*, p. 1.

21 *Submission 47*, p. 2.

22 *Submission 42*, p. 4.

> State Governments, must be reversed to ensure productivity growth is at least maintained.[23]

4.20 Growcom stated that:

> There has been a slide in government investment in R&D over the last, I would say, 10 to 15 years. There has been greater emphasis put on industry contribution to R&D. That has happened and it is still happening—and that is happening at both a state level and a federal level. Most state departments of agriculture around the country have had their budgets slowly eroded, so their R&D capacity has been decreasing. Federally, an organisation like CSIRO has found it difficult to continue a major investment in agricultural R&D. We see that as a challenge in itself, but it also misses the opportunity that is coming in front of us for Australia to position itself as an agrifood producer into the future. We see it as a real risk for the future, and also we are missing opportunities for the future, if there are not substantive increases in R&D.[24]

4.21 Agforce claimed that the global food task and looming supply constraints justified increased R&D investment:

> With the impact of climate change, increased population growth, reduced land available for agricultural production and global food shortages, there is an urgent need for the Government to increase its investment into research and development.[25]

4.22 Further, Agforce argued that rural research funding is vital to ensure exporting industries can compete internationally:

> It is clear that growth in the productivity of rural production systems can be directly connected to the percentage value of production versus investment in R&D, For example the grains industry has one of the highest investments to value ratios of any commodity in Australia and also has a high productivity growth, The livestock industries of beef and wool have relatively low investment levels and similarly low productivity growth.
>
> ...
>
> This trend of reduced productivity following reduced investment is evident in the fodder industry. This is the forgotten industry of Australia's food producing enterprises as no statutory levy exists for the production of fodder and investment from organisations such as GRDC, MLA and AWL is also very low in the fodder industry...[26]

4.23 The Grains Research Foundation Ltd also argued that declining R&D needs to be addressed, and proposed that growers increase their contributions to R&D in the

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23 *Submission 29*, p. 18.

24 *Committee Hansard*, 4 March 2009, pp 19-20.

25 *Submission 51*, p. 5.

26 *Submission 51*, p. 6.

face of state governments exiting the field.[27] Kondinin Group Ltd (KGL) told the committee that R&D spending needs to be driven more by the end users (farmers), rather than by scientific institutions and the bureaucracy. KGL also suggested that there is too much duplication of R&D.[28]

4.24 From a global perspective, Professor Julian Cribb recommended international spending on agricultural research be quadrupled, as this could reduce defence spending necessitated by conflicts related to food shortages:

> We are currently spending about $30 billion or $32 billion a year on agricultural research. If I could contrast that, we are spending $1.3 trillion a year on weapons. Weapons presumably are intended to prevent wars, or maybe to cause them. But if we invested more in agricultural science—I am suggesting about $130 billion or $140 billion worldwide per year—we would have the capacity to prevent wars. So this is actually a form of defence spending. It is an investment that every wise country needs to make if we are to prevent the sort of population displacements and the conflicts that arise from them.[29]

Research and development proposals

4.25 The committee heard evidence proposing that increased investment be directed to R&D in specific areas, as well as some recommendations for alternative R&D structures.

4.26 To improve innovative solutions from scientific research, CSIRO suggested that the following areas require further development:

- Ensure greater co-operation and integration of the science capacity and capability of research groups in State and Commonwealth agencies and in the Universities. Such integration is essential to generate critical mass, to ensure effective use of limited resources, and to ensure problems of major significance are tackled. ...
- Integrate the flow of information between basic and production science ... The transition of information and breakthroughs along the chain from genome studies to applications in breeding is often incomplete or fractured with small groups working in isolation to one another. ...
- Achieve greater acceptance by industry of the global nature of agriculture and the need to work with other countries and multinational companies to achieve aims.[30]

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27 *Committee Hansard*, 4 March 2009, p. 3.

28 *Committee Hansard*, 24 March 2009, p. 60.

29 Private capacity, *Committee Hansard*, 12 October 2009, p. 5.

30 *Submission 27*, pp 6-7.

4.27 CSIRO also noted that declining advances in cereal yields need to be addressed with further research:

> Over the past 10 years, annual gains in yield from cereal breeding programs have plateaued to less than a third of those seen between 1960 and 1988. There is a clear need for a transformational advance in cereal yields over and above the incremental annual increases afforded by current plant breeding technologies. Evidence is mounting that cereal yields are now becoming limited by the capacity for the plant to fix sufficient carbon during its lifecycle and translate this carbon in to harvestable grain. A major focus needs to be aimed at maximizing yield in a water-limited environment.[31]

4.28 With regard to animal production, CSIRO noted that 'technology adoption by growers is often a larger hurdle to productivity gains than is scientific discovery'. However, a focus on leading enterprises rather than the whole farmer population would be the more effective R&D approach.[32] CSIRO also identified as priorities research into more efficient fertiliser use and agronomic and genetic responses to climate change. On crop productivity, CSIRO noted:

> Studies of climate change effects on crop productivity and quality have not investigated the opportunities for plant breeding solutions, and have only superficially investigated the interactions of the multiple climatic effects with each other and with agronomy. Based on existing knowledge, there is a reasonable expectation that some of our wheat varieties will differ in their yield response to climate change conditions. However, our understanding is currently poor regarding the key morphological and physiological traits that will definitively contribute to high yield and quality under conditions of elevated CO2.[33]

4.29 A combined submission from red meat industry organisations emphasised the need for further research on livestock emissions:

> Although the current measurement and accounting standards for net greenhouse gas emissions from livestock are underdeveloped, the red meat industry acknowledges that emissions is an issue for the industry to further research. Almost all of the emissions from livestock are in the form of methane released during the digestion of feedstuff in the rumen of cattle and sheep. A key to reducing emissions is to maximise an animal's growth rate through converting as much as possible of the energy lost through methane emissions into meat – i.e. through more efficient feed conversion.[34]

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31 *Submission 27*, p. 7.

32 *Submission 27*, p. 7.

33 *Submission 27*, p. 8.

34 *Submission 29*, p. 2.

4.30 Professor Cribb called for a more concerted research effort towards providing more efficient water use systems for irrigation farmers:

> The amount of science going into making them more water use efficient or giving them alternative enterprises is pretty small. I think we should be investing massively. It is our opportunity to be the first country in the world to solve the problem of critical water shortage in agriculture. We have that opportunity, but we will not do it without science.[35]

4.31 The Victorian Farmers Federation (VFF) warned against too much R&D funding going towards carbon reduction measures:

> We are a bit concerned at the moment that the majority of the R&D funding will end up going towards carbon mitigation programs, which we are not suggesting is unimportant but we cannot avoid adaptation. We are adapting now and we need to make sure that our capacity to adapt or the R&D that is aimed at adapting and increasing productivity is also looked at and is not forgotten in the push to reduce the carbon footprint.[36]

4.32 Murray Goulburn Cooperative commented that producers should be provided assistance to utilise and benefit from innovations on the ground once they have been developed:

> ...the government should really start to look at helping us out with and encouraging and supporting farmers to try out [new irrigation] technologies because there is an equity issue, a cash availability issue and there is the issue of confidence to go ahead with technologies. We are not going to get rapid uptake of that kind of thing with the way we stand today.
>
> ...
>
> Governments tend to underestimate the market failures when you get quite close to doing something. We have used the example of liquid natural gas. It is a proven technology. It reduces emissions and reduces cost, yet it is really struggling as a sector to get off the ground because there is no production infrastructure and no pumping and filling station infrastructure. The market for innovation can fail quite close to where the technology is going to be adopted, and that is true with some of the irrigation technologies. It is particularly so when you get into drought and get cash strapped, that can slow it down even further.[37]

4.33 Other evidence proposed altering the structural arrangements for conducting agricultural R&D in Australia, in order to obtain as much scientific innovation as possible from each dollar invested. Food Chain Intelligence proposed a central strategic organisation to co-ordinate the introduction of new technology into the

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35 *Committee Hansard*, 12 October 2009, p. 12.

36 *Committee Hansard*, 25 March 2009, p. 11.

37 *Committee Hansard*, 25 March 2009, p. 74.

marketplace and strategic direction for public R&D.[38] Dr McGlasson recommended that agricultural R&D be consolidated in one Commonwealth department, including that currently residing in CSIRO, and co-locating research laboratories and staff on or adjacent to university campuses.[39] The Tasmanian Institute of Agricultural Research noted the benefits of its own model, a joint venture between the Tasmanian State Government and the University of Tasmania, and proposed that a similar approach be utilised nationally.[40]

Plant gene technology issues

4.34 The committee also heard strong concerns about the implication of plant gene and related biotechnology patents on the availability and cost of the base materials used for food production.

4.35 Genetically modified (GM) crops are a key aspect of the technological advances that will increase agricultural productivity by reducing the need for inputs such as fertiliser and pesticides, and increasing yield. A number of individuals wrote to the committee expressing concern about these developments, primarily about the consequences for human safety and the contamination of non-GM crops.[41]

4.36 DAFF emphasised the importance to food producers of the use of genetically modified crops:

> Biotechnology is expected to play an increasing role in helping farmers produce affordable food, while remaining competitive and viable, ensuring farm sustainability and adapting to the challenges of climate change. Biotechnology has already provided benefits in many countries around the world, including Australia, particularly through the uptake of genetically modified (GM) crops.[42]

4.37 The committee acknowledges the concerns people have about the safety of GM food and a perceived lack of consumer information that would assist people to choose foods that do not contain GM ingredients. The committee is of the view, however, that GM technology has the potential to make food more affordable and nutritious for the world's population, as we enter a time in which global food security is likely to become increasingly tenuous.

4.38 However, the committee was particularly interested in evidence provided to the inquiry concerning the patenting of plant gene and related biological technology,

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38 *Submission 1*, p. 2.

39 *Submission 47*, p. 3.

40 *Submission 62*, p. 2.

41 See Mothers are Demystifying Genetic Engineering, *Submission 18;* Ms Madeleine Love, *Submission 32*; Mr Murray Brooker, *Submission 56*; Ms Diane Evers, *Submission 58*; Ms Bee Winfield, *Submission 59*; and Ms Linda Andrews, *Submission 116*.

42 *Submission 93*, p. 23.

and the implications this may have for future food supply and pricing. These concerns relate specifically to plant seed suppliers potentially being able to restrict competition by using the intellectual property system in ways it was never intended to be used, by patenting biological discoveries (rather than inventions) and preventing others from commercially utilising critical plant research infringing on that patent.

4.39 Professor Richard Jefferson emphasised that 'every patent must reflect an invention—a human creative step'. He indicated that patents unable to demonstrate this characteristic are not validly granted.[43]

4.40 IP Australia explained that the law is applied in the following way:

> An isolated gene sequence for which an industrial or practical use has been identified is considered an invention under the Australian patent law.
>
> ...
>
> ...if you have isolated a molecule, and you have identified a practical use, an industrial use, for that molecule, then you are entitled to claim that molecule.
>
> ...
>
> ...If all you did was isolate the molecule, then all you have is a discovery. It is the application of the molecule with a practical use that puts in into the field of invention.[44]

4.41 Professor Luigi Palombi told the committee that patent regulation in Australia is guided by a 1959 High Court decision on the ability to patent a weed control method.[45] According to IP Australia, their approach to granting patents in this field is founded on existing legislation and legal precedent.[46] Respectively, these are the *Patents Act 1990* and the Australian High Court's decision in *National Research Development Corporation v Commissioner of Patents* (1959).[47]

4.42 Professor Peter Drahos suggested that patent offices were approving patents invalidly because they had been overwhelmed with applications:

> All offices are struggling with the quality issue. The problem is that the large number of patents puts pressures on patent examiners in terms of time. Most patents at the most will get about 20 hours of attention from a patent office. That it is not very much time in which to do a careful analysis

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43 Chief Executive Officer, Cambia; Director, Initiative for Open Innovation; and Professor of Science, Technology and Law, Queensland University of Technology, *Committee Hansard*, 30 April 2010, p. 8.

44 *Committee Hansard*, 30 April 2010, p. 25.

45 Private capacity, *Committee Hansard*, 30 April 2010, p. 17.

46 *Committee Hansard*, 30 April 2010, p. 30

47 *National Research Development Corporation v Commissioner of Patents* (1959) 102 CLR 252; *Committee Hansard*, 30 April 2010, pp 30-31.

> of the many complex patent claims contained in a patent relating to a gene sequence or a biological process.[48]

4.43 Professor Drahos added that a poor patent decision in a larger country would tend to be followed in Australia:

> Most companies do not begin patent applications in Australia. The Australian patent office is not an office of first filing. Most companies will begin a patent application in the United States, within a country in Europe or in Japan, and will then proceed to obtain other patents in other countries, usually using a process known as the patent cooperation treaty. Australia's office is a second tier office and it is a follower rather than a leader. If the patent quality work of the major offices is poor then Australia will tend to follow that poor quality.[49]

4.44 Professor Palombi provided the committee with an example of a patent granted by IP Australia where no actual invention exists, but the patent holder can control how that gene is used by others. The patent related to an environmental stress tolerance gene sequence.[50]

4.45 The Network of Concerned Farmers expressed concern that GM technology is being used as a vehicle to create a supply monopoly of plant seed:

> The drive stems from multinational corporations, such as Monsanto, manipulating control of seed supplies and food supply. The research industry is trading knowledge and germplasm in exchange for funding and alliances with multinationals, enabling corporate companies to own patents over farmers' crops.
>
> Competition is currently retained in the food supply because farmers have the choice to buy and sell from their business of choice. If plant breeders have agreements with Monsanto to add a Monsanto gene to all new varieties released, and farmers are required to purchase new seeds every year, all farmers could be locked into being a contract grower for a single supply chain. This would effectively remove all opposition, as no alternative supply chain will be able to access food. What will be the choice and price for food if controlled by a single supply chain?[51]

4.46 Similarly, Ms Frances Murrell argued that GM technology provides opportunities for market control rather than productivity benefits for farmers:

> …the credible scientific and research literature shows that genetic modification does not increase the productivity or health of crops...There are only two commercial traits:

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48 Private capacity, *Committee Hansard*, 30 April 2010, p. 15.

49 *Committee Hansard*, 30 April 2010, p. 15.

50 *Committee Hansard*, 30 April 2010, pp 18-19.

51 *Submission 33*, p. 3.

- Herbicide resistance – the crop can be sprayed with a herbicide and not die
- Insect resistance – the crop is poisonous to certain types of insects

> Herbicide resistance can be created by non-GM breeding for example Triazine Tolerant canola is resistant to the herbicide Triazine and is a non-GM crop.
>
> Insect resistance has been created by the transfer of a gene from a soil bacterium...[52]

4.47 With regard to publicly funded research, Professor Jefferson warned against upstream researchers being driven by the incentive of recovering money for their institution:

> If intellectual property is looked at as a tool to monetise at the expense of the ability to create wealth downstream then it is doing a disservice to society. [53]

4.48 Professor Drahos advocated greater transparency for existing plant technology patents, via a register system:

> ...a country like Australia, which is an importer of technology, should create a transparency register system. Under this system, what would happen is that a regulator or a policymaker could declare a register of technology in a particular area. For example, the department of agriculture could choose a particular crop and require under law all patent owners to disclose the technology that they hold in relation to that particular plant or that particular process, so that the department of agriculture would know exactly what the position was. And there would be penalties for failing to disclose. This would be a simple and dramatic way in which to increase the transparency of the system.[54]

4.49 Professor Drahos also suggested that Australian patents should be audited by an external committee of experts to ensure patents are granted appropriately.[55]

Committee view

4.50 Innovation through research and development is a key driver of productivity growth in the agricultural sector, which is in turn absolutely critical in ensuring that agriculture remains a viable commercial pursuit in the face of declining terms of trade. It is of considerable concern to the committee that productivity growth may be affected not only by drought, which is beyond anybody's control, but by a declining commitment from governments at both state and federal level to agricultural R&D. It

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52 Private capacity, *Submission 37*, p. 7.

53 *Committee Hansard*, 30 April 2009, p. 11.

54 *Committee Hansard*, 30 April 2009, p. 15.

55 *Committee Hansard*, 30 April 2009, pp 15-16.

is also worth noting that innovation is in fact a critical element required to maintain productivity in climatic conditions that Australian farmers have not experienced for one hundred years. The committee especially encourages greater investment in water use efficiency techniques and developing plant varieties better equipped to resist dry conditions.

Recommendation 2

4.51 The committee recommends that the Rural Industries Research and Development Corporation (RIRDC) report to the Senate on the current level of agricultural research in OECD countries as a percentage of GDP and the trend for investment over the last ten years.

4.52 The committee is also concerned about the potential for plant gene and related biotechnology patents to be misused, thus limiting the competitiveness of the market supplying base materials used for food production. It is of great concern that the evidence to this committee suggests that patents are being granted with respect to biological discoveries, rather than inventions, which is clearly contrary to the intended purpose of the intellectual property system. This issue appears to have been allowed to escape unchecked by intellectual property regulators, including those in Australia. Whether this is a function of IP Australia being unable to properly investigate the deluge of patent applications they receive, or a lack of legal clarity in this area, it is an issue that must be resolved immediately to ensure that patented biological discoveries do not prevent important technological innovation.

Recommendation 3

4.53 The committee recommends that IP Australia advise the Senate what patents, if any, have been granted over biological discoveries as opposed to inventions, with reasons for them being granted.

Chapter 5

Supply chain issues

5.1 This chapter briefly considers a variety of supply chain issues that affect the viability of agricultural production and the affordability of food for consumers. These include:

- rising input costs;
- the availability of water for food production;
- deteriorating transport infrastructure;
- food waste along the supply chain; and
- retail issues.

Input costs

5.2 Input costs for producers are an important determinant of whether it is viable for farmers to continue taking financial risks to produce food, as well as influencing the price of food for consumers where these costs are able to be passed along the supply chain.

5.3 Red meat representative organisations highlighted steeply rising prices for fertiliser, labour and fuel as making it difficult for Australian farmers to compete globally.[1]

5.4 Growcom raised labour shortages as being of critical importance:

> Horticulture producers continue to face labour and skills shortages that threaten their future viability. Access to sufficient labour is essential as labour is the most critical factor in ensuring the smooth running of field preparation, planting, maintenance, harvesting and packing activities. It follows that human resources are growers' most valuable resource. The future viability of the industry is heavily reliant on securing and retaining sufficient human resources. The trial of a seasonal labour scheme may be a positive forward in achieving this goal, however will not solve the issue.[2]

1 *Submission 29*, p. 9.

2 *Submission 23*, p. 8.

5.5 The Victorian Farmers Federation told the committee that drought and opportunities in other industries had caused a loss of labour that would be hard to replace when full agricultural production is re-established.[3]

5.6 Fertiliser costs were discussed at length during the committee's hearing in Canberra on 30 April 2010. This issue was also examined extensively during the committee's previous inquiry into pricing and supply arrangements in the Australian and global fertiliser market, which was tabled in August 2009.

5.7 The committee raised the issue of using grain for biofuels in its discussion about land use in Chapter 2. Concerns about the effect of biofuel demand on input costs for livestock producers were raised by both the Australian Lot Feeders Association and Australian Pork Limited.[4]

5.8 A number of submitters also warned of the effect of input cost increases associated with an emissions trading scheme. [5]

Water availability

5.9 Another critical input for food producers is water, which has been increasingly scarce for many Australian farmers over most of the past decade. Reductions in rainfall or water available for irrigation inevitably affect the level of agricultural production.

5.10 According to the Department of Agriculture, Fisheries and Forestry (DAFF), 65 per cent of the water used in Australia is used for agriculture, which means that any decline in the availability of water affects food production more than any other commercial activity.

5.11 Evidence to the committee related to the questions of the likely future scarcity of water and the most effective way to ensure the water that is available is allocated as productively as possible, within the constraints imposed by human and environmental needs.

5.12 DAFF suggested that climate change is likely to reduce water availability and, consequently, agricultural output.[6] The Commonwealth Scientific and Industrial Research Organisation (CSIRO) stated that environmental change, including variability of rainfall, will require significant changes to agricultural systems in

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3 *Submission 22*, p. 7.

4 *Submission 8*, p. 9; *Submission 15*, pp 3-6.

5 See for example: AgForce, *Submission 50*, p. 2; CSIRO, *Submission 27*, p. 4; New South Wales Department of Primary Industries, *Submission 39*, p. 5; Victorian Eco Innovation Lab (VEIL), *Submission 46*; VEIL Research Report: No. 1,' Sustainable and Secure Food Systems for Victoria', April 2008, p. 25.

6 *Submission 93*, p. 14.

Australia, highlighting the need to improve agricultural water-use efficiency as requiring particular attention.[7]

5.13 Currently, the Commonwealth Government has committed funds to assist farmers to use water more efficiently and to purchase water entitlements from willing irrigators for environmental flows.[8]

5.14 The NSW Irrigators' Council emphasised that the price of water for producers directly affects the cost of food for consumers, and this fact needs to be considered when assessing how water is to be allocated among multiple users.[9] The council indicated that while government purchases of water for the environment would increase the cost of food, it supported this market mechanism. However, it did not support compulsory acquisitions.[10]

5.15 The Victorian Farmers Federation was strongly critical of agricultural water in the north of that state being diverted for metropolitan water supplies, arguing that alternative sources for urban water use should be found, instead of reducing water used to produce food. They referred to recycled water and stormwater capture as two possible options.[11]

Infrastructure

5.16 One of the key aspects of the supply chain is transport infrastructure that allows food to be transported from producers to processors to consumers in an efficient, timely and economical way.

5.17 Agforce told the committee that infrastructure bottlenecks are affecting competitiveness:

> One key element which is sadly lacking is the infrastructure to be able to transport the food to market domestically and for export. Rail is a key area of limitation and one which demonstrates a quantifiable impact - $20/t less for grain in QLD than NSW due to transport issues. Market forces cannot dictate our competitiveness as long as infrastructure bottlenecks prevent the movement of products. These bottlenecks also serve to limit the availability of input supplies at competitive rates...[12]

5.18 Agforce emphasised that rail and road transport integration is a significant problem in Queensland:

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7 *Submission 27*, pp 9-10.

8 Department of Agriculture, Fisheries and Forestry, *Submission 93*, p. 29.

9 *Submission 11*, p. 4.

10 *Submission 11*, p. 5.

11 *Submission 22*, p. 5.

12 *Submission 51*, p. 3.

> The rail network in Queensland is currently unable to cope with the transport needs of both the agricultural and resources sectors with increasing volumes being pushed onto the road network. This has resulted in increased pressures on major feeder roads such as the Warrego Highway and bottlenecks accessing the Port of Brisbane by road, particularly from Toowoomba.[13]

5.19 In Victoria, the VFF commented that the 'rail network in Victoria has become increasingly inefficient due to significant underinvestment in the network', as well as arguing for standardisation of gauges across the rail network to ensure 'the long term sustainability of efficient and competitive rail freight'.[14] With regard to roads, the VFF stated that the poor condition of local roads in their state adds costs to the supply chain that are ultimately passed on to consumers.[15]

5.20 Red meat representative organisations also noted problems with integrating different transport modes:

> Governments have been slow to upgrade land transport infrastructure to keep pace with improvements in sea transport. In particular road transport infrastructure has not been upgraded to accommodate the change from 20 foot to 40 foot containers that has been implemented by the globalised shipping industry.[16]

Waste

5.21 The committee also heard about supply chain inefficiencies that are caused by waste. Food Chain Intelligence claimed that:

> Food waste in Australia is estimated to be 3.3 million tonnes annually, worth about AUD $5.3 billion. The reasons for food waste are numerous and encompass all food chain players, from producers to consumers.[17]

5.22 Professor Julian Cribb suggested that addressing food waste was a critical part of feeding the entire human population:

> ...we are wasting half the world's food at the moment. We actually waste enough food to feed three billion people worldwide at the moment. There are one billion starving people in the world at the moment. So technically this is an issue that can be solved. We have seen a lot of focus on this in Britain in the last year or so—the waste of food and ways to curb it. But it

13 *Submission 51*, p. 9.

14 *Submission 22*, pp 2-3.

15 *Submission 22*, p. 3.

16 *Submission 29*, p. 20.

17 *Submission 1*, p. 4.

> seems to me that if we want to save our water and save our land, we have to save the food. That is the most economical way to do it.[18]

5.23 Professor Cribb cited the conflict between strict health regulation and food waste as being an important aspect of the problem, in addition to food that has been disposed of not being recycled in order to close the nutrient loop.[19]

5.24 Population Health Queensland noted the wastage that occurs before food reaches consumers:

> During production and processing there is often significant wastage of food. For example, over-supply of processed lettuce into convenience packs can result in greater wastage than transporting and selling the lettuce unprocessed. Processing and transportation of surplus produce incurs costs that may make it more economically to simply dump the extra produce rather than distribute it – to food banks for instance. This practice could have an increasing negative impact on national food security and population nutrition in the future.[20]

5.25 Interestingly, FoodLegal suggested that supply chain efficiencies and associated minimal inventories could lead to food shortages in the event of a major crisis.[21]

Retail issues

5.26 Finally, the interaction between food retailers, consumers and those further up the supply chain has a major effect on returns to growers and the retail price of food for consumers.

5.27 Growcom told the committee that a concentration in the retail market had negative consequences for farm viability:

> There is a concentration of the domestic fresh food market within the two major retailers, with serious concerns being raised about their increasing market power and opportunities for unconscionable conduct. The clear trend of these retailers is to use their market power to push costs, risks and responsibilities back down the supply chain. Anecdotally, ten years ago growers worked on a rule of thumb of farm gate return being around 50% of the retail price. Today, this margin is generally less than 20%. Growers' profit margins continue to decrease, while the profit margins of the major retailers remain at record highs.[22]

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18 Private capacity, *Committee Hansard*, 12 October 2009, p. 6.

19 *Committee Hansard*, 12 October 2009, p. 13.

20 *Submission 38*, p. 5.

21 *Submission 6*, p. 4.

22 *Submission 23*, p. 8.

5.28 DAFF informed the committee that:

> In 2007-08, supermarkets accounted for around 61 per cent of sales in the retail sector. The large supermarket chains are increasingly contracting some of their requirements for fresh horticulture directly from larger growers and meat from feedlots with integrated processing facilities. However, packaged products such as cereal foods and frozen foods and pre-prepared meals are typically sourced from processor intermediaries.[23]

5.29 DAFF indicated that food retailing in Australia is 'highly competitive' although 'the value of raw commodities has tended to represent a declining proportion of the final sale price of food products'. The submission stated that this was attributable to the following:

> The growing gap between farm-gate and retail prices is mainly a reflection of the rising cost of services (including transport, storage, handling, distribution and retailing) and the incorporation of additional attributes (packaging, presentation and qualities) in the final product in response to consumer demands.[24]

5.30 DAFF also commented that prices for consumers had not been found to have risen because of concentration in the retail sector:

> The ACCC found that the grocery retailing market in Australia is workably competitive with the rising global price of food, increases in costs of production and domestic weather conditions largely responsible for the 21 per cent rise in Australian food prices over the past five years. Less than five per cent of the increase in food prices over this time was estimated to be directly attributable to increased supermarket margins. The ACCC found little evidence to support the proposition that retail prices have risen while farm-gate prices have stagnated or declined, contrary to the claims of some rural lobby groups that made representations to the inquiry. In general, the ACCC found that movements in shelf prices broadly reflect changes in wholesale prices over time.[25]

5.31 The Tasmanian Institute of Agricultural Research suggested that retailers are often reluctant to adopt strategies that would maximise value for producers:

> A critical issue here is the ability to embody...value in the product and thus create consumer awareness of the value. For example via provenance labelling, "buy Australian", "buy local", "buy Low input production", "buy ethical production". These require regulation at point of sale and accurate labelling. As many impose imposts on retailers and the value chain and create educated consumers, they are often unpopular in concentrated marketing systems (such as the food retail system in Australia) or in global systems where buyers want undifferentiated products to allow substitution.

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23 *Submission 93*, p. 19.

24 *Submission 93*, p. 19.

25 *Submission 93*, pp 26-27.

> Potentially they also require recognition by the elements of the chain of the value proposition and creation of methods to retain the value. [26]

5.32 The submission from the University of Sydney's Urban Research Centre stated that alternative sources of food distribution are necessary for producers to gain a greater share of consumer spending and for consumers to get more affordable and better quality food.[27]

Committee view

5.33 The committee considers that the supply constraints identified in this report need to be considered as part of a broad strategic food plan for Australia, as discussed at the conclusion of Chapter 1.

5.34 The committee notes that it would have liked to examine a number of issues relating to food production in more depth. However, the intervention of the 2010 federal election has prevented this from occurring. It is therefore the intention of the committee chair to seek from the Senate the re-establishment of this committee in the new parliament, in order to pursue these matters further. This would include any proposed emissions trading scheme and its implications for food production in Australia.

Recommendation 4

5.35 The committee recommends that the Senate re-establish the Select Committee on Agriculture and Related Industries in the new parliament to further examine issues relating to food production, including the implications of any proposed emissions trading scheme for affordable, sustainable food production and viable farmers.

Senator the Hon. Bill Heffernan

Chair

26 *Submission 62*, p. 3.

27 *Submission 102*, p. 5.

Labor Senators' dissenting comments

Labor Senators must express their disappointment on the outcome of this inquiry.

Referred to the Select Committee on the 25th June 2008, and having had its terms of reference expanded and its reporting date repeatedly extended by the Senate, this inquiry has failed to generate a report worthy of the time and effort that many Senators have given to the inquiry.

After 17 hearings, 162 submissions and hundreds of pages of Hansard, the Committee has produced three short interim reports and now this short final report.

It is probably fair to say that given the extremely broad subject matter of the inquiry a wholly satisfactory outcome was always going to be hard to achieve. Nevertheless we feel that the majority report now being presented to the Senate falls well short of the standard of report that could have been produced.

The Federal election campaign falling in the month before the report was due to be presented has no doubt impacted on the amount of time that Senators have been able to give to consideration of the document. In our view however this has exacerbated the problem, not caused it.

The fact is, the subject matter before the inquiry is vitally important. However, a lack of focus in the pursuit of this issue has led to the inquiry jumping from issue to issue without effectively drawing them all together to allow the Committee to present a cogent set of findings which thoroughly addresses these vital issues.

That is not to say that evidence received by the Committee is not valuable or that issues touched upon during the course of the inquiry were not important. They were. To that extent the inquiry process had value. However the Committee did not find itself (was not) able to make findings or recommendations on vital issues such as:

- The value of rural land and the ability of farmers to make a reasonable return on their investment
- The impact of the supply chain, transport costs and market opportunities on the farmers on the one hand and the consumers on the other
- The impact of trade practices law on the farming community and the issue of the dominance of the retail food sector by two companies, including the likely impact of the marketing of the home brand products on the Australian food manufacturing sector
- The viability of current farming practices and the long term sustainability of farming in some regions given the challenges of climate change

This is far from an exhaustive list of issues the Committee should have pursued.

It is our suggestion that “digestible” parts of this inquiry should be further pursued by the Rural and Regional Affairs and Transport Reference Committee - the Committee that the Senate intended would, in ordinary course of events, deal with these matters. There is a significant amount of evidence presented to this inquiry which future inquiries could adopt for their purposes and this would be a cost effective method giving value to this Committee’s work over the last two years.

We do not support the recommendations in the majority report which in our view require significantly more consideration than the committee has been able to give them. We would be happy to consider these issues further in future inquiries into relevant areas of the terms of reference of this inquiry conducted by the appropriate committee.

Senator Kerry O'Brien **Senator Glenn Sterle**

APPENDIX 1

Submissions Received

Submission Number	Submitter
1	Food Chain Intelligence
2	Ms Elizabeth Lambert
3	Mr Michael Sobb
4	Mr R.J. Bennett
5	Mr Geoff Ward
6	FoodLegal
7	Mr Chris Hilder
8	Australian Lot Feeders' Association
9	The Western Australian Farmers Federation (Inc.)
10	Maribyrnong City Council
11	NSW Irrigators' Council
12	Ricegrowers' Association of Australia Inc
13	Mr Robert Lemon
14	Mr Simon Emmott
15	Australian Pork Limited
16	Citizens Electoral Council of Australia
17	Ms Kate Lawrence
18	MADGE Mothers are Demystifying Genetic Engineering
19	Horticulture Australia Limited
20	Enniskillen Orchard
21	Australian Canefarmers Association, Herbert Region
22	Victorian Farmers Federation
23	Growcom
24	Australian Dairy Industry
25	Curtin University of Technology
26	Mr Michael Carmody
27	CSIRO Government Relations
28	VicHealth
29	Cattle Council of Australia, Australian Lot Feeders' Association, Sheepmeats Council of Australia, Meat & Livestock Australia Ltd
30	Victorian Local Governance Association
31	Mr Gavin Chirgwin
32	Ms Madeleine Love
33	Network of Concerned Farmers
34	Australian Conservation Foundation
35	Pure Harvest [Ceres Natural Foods Pty Ltd]
36	Dietitians Association of Australia
37	Ms Frances Murrell

38 Population Health Queensland
39 NSW Department of Primary Industries
40 Sydney Food Fairness Alliance
41 Ms Sue Wilmott
42 The Rural Industries Research and Development Corporation's
43 Planning Institute Australia
44 Mr Jeff Bidstrup
45 Ms Janet Cox
46 Victorian Eco-Innovation Lab University of Melbourne
47 University of Sydney
48 Murray Goulburn Co-Operative Co. Ltd
49 Mr Kevin Tresselaar
50 Fonterra Australia Pty Ltd
51 AG Force
52 Mr David Byard
53 Mr Louis R. Cook
54 Mr Russell Holland
55 Ms Estelle Ross
56 Mr Murray Brooker
57 Mr David Sheil
58 Ms Diane Evers
59 Ms Bee Winfield
60 Ms Susan Stewart
61 The Environment Association (TEA) Inc.
62 Tasmanian Institute of Agricultural Research
63 Meander Valley Council
64 Ms Prue Lee
65 Ms Marilyn Carter
66 Mr Marcus Kuhn
67 Ms Sue Wilmott
68 Ms Martine Traill
69 Ms Susan Lyle
70 Ms Julie Prowse
71 Ms Sue Patchett
72 Ms Pauline Roberts
73 Mr and Mrs Grant and Kaye Chambers
74 Ms Colleen Gardner
75 Mr and Mrs John and Vicki Brassil
76 Ms Lisa Barber
77 Wilmott Pastoral Pty Ltd Ms Margaret Wilmott
78 Ms Sue Cudmore
79 DAMA Partnership Mr and Ms David and Marguerite Alderice and Uther
80 Mr and Mrs Rod and Kelly Grant
81 Ms Petrina Ronald
82 Mr Derek Blomfield
83 Ms Susan Willis

84 Ms Peta Craig
85 Ms Rosemary Nankivell
86 Moonrocks Australia
87 Don’t walk, Run. PKL
88 Mackerras Pastoral Company
89 Dr Pauline Roberts
90 Ms Patricia Duddy
91 MS&A
92 T Bowring and Associates Pty Ltd
93 Department of Agriculture, Fisheries and Forestry
94 Cuthbertson Bros
95 Mr Philip Henty
96 Mr Geoff Brown
97 Ms Wendy Bowman
98 Smithson Planning Mr Neil Smithson
99 Mr Douglas Costello
100 Mr Bill McClumpha
101 Name Withheld
102 Sustainable Agricultural Communities Australia (SACA)
103 Growcom
104 AAPI Spinz
105 CONFIDENTIAL
106 Mr Rod Davies
107 Mr Ken Pattison
108 School of Environment and Society
109 Mr Tim Whincorp
110 Mr Daryl Weston
111 Wine Grape Growers Australia
112 National Farmers' Federation
113 Mr David Mond
114 University of Western Sydney
115 Mrs Carol MacKee
116 Ms Linda Andrews
117 Mr John Lawrence
118 Mr Gary Jackson
119 Mr Timothy Duddy
120 UNALLOCATED
121 University of Tasmania
122 NSW Farmers’ Association
123 Fair Dinkum Food Campaign
124 Mr Warren Buntine
125 Mr and Mrs Richard and Meg Bignell
126 Limberlost Dairy
127 R W Hodge and Son
128 National Association of Forest Industries
129 Tasmanian Suppliers Collective Bargaining Group

130 Circular Head Dairy Farmers
131 Julian Cribb and Associates
132 L & B MacFarlane
133 Stroud Dairies
134 Mr Don Lawson
135 Mr Will Hodgman, MP
136 National Foods
137 Lake River Dairy
138 Department of Primary Industries, Parks, Water and Environment
139 Ms Colleen Dibley
140 Mr and Mrs Llew and Elaine Carter
141 SBS cibus
142 Mr John Hassen
143 Mr Tim Whincop
144 Ms Fiona Lake
145 Mr Gary Jackson
146 Shenhua Watermark Coal Pty Ltd
147 Name Withheld
148 Independent Dairy Farmers Ltd Franchisee
149 Mr Chris Russell
150 Doctors for the Environment Australia
151 Australian Conservation Foundation
152 Mr George Williams
153 Ms Dee Margetts
154 The Gloucester Project
155 Santos Limited
156 Plantations 2020 Program
157 Australian Food & Grocery Council (AFGC)
158 Tasmania Farmers & Graziers Association (TFGA)
159 Uta Bauer
160 Mr Andrew Helps & Jemena Gas Networks response to submission
161 CONFIDENTIAL
162 Dr David Pearson

Additional Information Received

- Received on Committee site visit, 19 May 2009, from Mr Tim Duddy. Fact sheet on the proposal to mine the Liverpool Plains;
- Received at committee hearing in Canberra on 30 April 2010, from Mr Andrew Helps.
  - Information sheet on *'The Role of Fertilizers in Agricultural Mitigation Strategies'*;
  - *'TVA fertilizer technology used worldwide –but few new products since 1970s'* article, dated 28 August 2008;
- Received on 3 May 2010, from Dr Luigi Palombi. Additional information for committee:
  - *'Plant Gene Patent Briefing'* PowerPoint Presentation;
  - *'Australian Patent Publication – Plant having altered environmental stress tolerance'*;
  - *'The Genetic Sequence Right: A Sui Generis Alternative to the Patenting of Biological Material'* report by Luigi Palombi;
- Received on 4 June 2010, from the Department of the Treasury. Correspondence outlining the foreign investment rules applying to agriculture;
- Received on 25 June 2010, from AUSBUY. Answers to questions taken on notice on 7 June 2010;

Tabled Documents

4 March 2009, Brisbane QLD:

- Tabled by Mr Robert Lemon. *'Appeal by Rob Lemon, to all Australians, for "a shift in societal values, needed to maintain a habitable planet and extreme weather events highlight the risks of in action (Ian Dunlop, CSIRO)"'.*

5 March 2009, Sydney NSW:

- Tabled by Sydney Food Fairness Alliance (SFFA).
  - Biographies or presenters from SFFA;
  - SFFA PowerPoint presentation printouts; and
  - SFFA Expressions of Interest pamphlet.

25 March 2009, Melbourne VIC:

- Tabled by Ms Kristen Larsen, Policy Research Manager, Victorian Eco-Innovation Lab (VEIL), Faculty of Land and Environments, University of Melbourne.
  - Submission to Outer Suburban Interface Services & Development Committee inquiry into Agribusiness in Outer Suburban Melbourne; and
  - Addition resources document;
- Tabled by Victorian Health Promotion Foundation. *'Food for All – How local government is improving access to nutritious food'* brochure;
- Tabled by Victorian Local Governance Association (VLGA).
  - *'The Food Security Project Municipal Food Security Dimensions and Opportunities – Summary Report of the trial RAP survey – City of Greater Geelong – Corio Norlane, City of Wyndham – Heathdale'*; and
  - VLGA *'Land Use Planning & Community Food Security Project'* Literature Review October 2008.

1 April 209, Launceston TAS:

- Tabled by Cuthbertson Brothers. Faxed document received by Mr Wayne Jones, Cuthbertson Brothers from Mr Ian Richards, Richards Livestock dated 19 March 2009;
- Tabled by Mr George Mills. Documents dated 31 March 2009 regarding 'Lamb Skins' and 'Marketing Prospects for Farmers';
- Tabled by Mr David Byard.
    - Copy of the Australian Securities & Investments Commission's (ASIC) *'Examination of the prices paid to farmers for livestock and the prices paid by Australian consumers for red meat – A report to the Minister for Agriculture, Fisheries and Forestry*' February 2007;
    - Extract from Freshlogic: *'Factors affecting category pricing'* March 2008, Submission to ACCC Grocery Inquiry; and
    - Tabled by Mr Andrew Ricketts, Environmental Association Inc. *'Land Tenure Statistics for Tasmania – as at 1 Jan 2008'*.

19 May 2009, Gunnedah NSW:

- Tabled by Mr Robert Banks. *'Physical Environment Liverpool Plains – Geomorphology Soil, Why is it unique in Australia, What are the issues in Brief'* PowerPoint presentation printouts;
- Tabled by The Hon. Robert Hunter, QC.
    - Fact Sheet from Committee Site visit; and
    - Information report on the Liverpool Plains;
- Tabled by Mr John Lyle. Background notes for hearing.

1 July 2009, Perth WA:

- Tabled by Mr Jeff Mews. Correspondence from Mr Jeff Mews to The board of Directors, Great Southern Plantations Ltd;
- Tabled by Mr Peter Patrikeos. Copy of Great Southern Plantations Ltd Board Paper 2004;
- Tabled by the Chair, (Senator the Hon. Bill Heffernan). Copy of *'Great Southern Plantations – Grower Returns: Questions & Answers'* paper;
- Tabled by Mr Mike Calneggia. Background notes and *'Managed Investments Scheme – Vineyard with ATO Product Ruling'* data;
- Tabled by Mr George Ipsen. Copy of 'open letter to Media, Federal & State Parliamentarians';
- Tabled by Mr Robert Melville, AACL Ltd. AACL Grain Co-Production Pamphlets:
    - *'Key Differences from other Managed Investments Schemes;*
    - *'Grain Co-Production Timeline';*
    - *'Company and Product Overview'* booklet;
    - 2009 *'Crop Locations'* map;
    - Information sheet;
    - *'Farmer background document'*;
    - Information booklet
    - *'Product Disclosure Statement'*;
    - *'Adviser Edge – Independent Assessment'*; and
    - *'Product Ruling – Income Tax 2009'*;
- Tabled by Conservation Council of WA:
    - *'Frequently Asked Questions – For Landowners'* document;
    - Synopsis of submission submitted to the inquiry;
    - *'Dry land Salinity in Australia – Key Findings'* document.

31 August 2009, Canberra ACT:

- Tabled by Ms Janette Townshend. *'Great Southern 2006 Beef Cattle Project and Great Southern 2007 Beef Cattle Project, Product Disclosure Statement'* and *'Great Southern Beef Cattle Project overview and tour'* CD;
- Tabled by Mr Sam Paton. *'Issues in relation to MIS Agriculture Schemes'* notes page;
- Tabled by Mr David Mond. *'Great Southern Managers Australia Limited – Explanatory Memorandum, Great Southern Plantations 2002'* and opening statement.

18 September 2009, Canberra ACT:

- Tabled by BHP Billiton. Opening statement;
- Tabled by Santos Limited. *'Gunnedah Basin'* overview information & charts.

6 October 2009, Devonport TAS:

- Tabled by Mr John Wilson. *'Limberlost'* Financial projections documents;
- Tabled by Mr R. Oliver. Letter & supporting documents from Mr Hermann Kibler, regarding Lake River Dairy.

7 October 2009, Canberra ACT:

- Tabled by Dr Judith Ajani, Fenner School of Environment & Society, The Australian National University. *'Australia's Soaring hardwood plantation chip supply'* paper;
- Tabled by National Association of Forest Industries (NAFI). Opening statement;
- Tabled by Mr Jim Adams, CEO, Timber Communities Australia Limited (TCA). Opening statement.

12 October 2009, Canberra ACT:

- Tabled by Ms Tina MacFarlane.
  - Discussion paper: *'Urgent Action needed water reform – northern Territory Future Development at Risk'*;
  - *'Mataranka Water Allocation Plan'* map;
  - *'Daly Roper Water Control District'* fact sheet;
  - *'Land Unit Mapping – "Stylo" Mataranka'* map;
- Tabled by Mr Sid Clarke. Extract from Resume;
- Tabled by Professor Julian Cribb. Opening statement;
- Tabled by Commonwealth Scientific and Industrial Research Organisation (CSIRO).
  - Presentation summary document;
  - *'CSIRO's response to food security – An overview'* presentation printouts.

23 October 2009, Canberra ACT:

- Tabled by Mr Ron Willemsen, Macpherson & Kelley Lawyers.
  - Extract from *'Timbercorp Limited Annual Report 2008'*;
  - Copy of ASIC report – 2008 Timbercorp Olive Project lodgement papers submitted 17 August 2008;
  - Copy of ASIC report – 2008 Timbercorp Olive Project lodgement papers submitted 12 March 2009;
  - *'Timbercorp Group of Companies – Report by Administrators, 18 June 2009'*;
  - Financial Statements for 2008 Timbercorp Olive Project.

18 November 2009, Canberra ACT:

- Tabled by Senator the Hon. Richard Colbeck. Letters from National Foods to suppliers dated 13 November 2009.

30 April 2010, Canberra ACT:

- Tabled by Mr John Martin. Copy of GrainCorp's Delivery Note from Hi Fert, dated 13 Match 2009;
- Tabled by Professor Richard Jefferson. *'Patent Lens - Setting Patent Information Free'* brochure;
- Tabled by New South Wales Farmers Association. *'Current world fertilizer trends and outlook to 2011/12'* report.

7 June 2010, Canberra ACT:

- Tabled by Professor Julian Cribb. *'The Coming Famine – The Global Food Crisis and what we can do to avoid it'* book;
- Tabled by Ms Lynne Wilkinson, AUSBUY.
  - Copy of submission submitted to Food Labelling and Policy Review, May 2010;
  - Copy of submission submitted to Senate Inquiry into Truth in Labelling, October 2009;
  - Copies of AUSBUY brochures.

APPENDIX 2

Public Hearings and Witnesses

BRISBANE, QLD – 4 MARCH 2009

- BURKE, Mr Charles, Vice President/Treasurer,
  AgForce Queensland Industrial Union of Employees
- JENSEN, Dr Nicole, Executive Officer,
  Grains Research Foundation Ltd
- KRIEG, Mr Lindsay Robin, Grains Policy Director,
  AgForce Queensland
- LEMON, Mr Robert Alan,
- PANITZ, Mr Mark James, Manager,
  Policy and Advocacy, Growcom
- PEARSE, Mr Oscar Alan, Policy Director, Cattle,
  AgForce Cattle Board, AgForce Queensland
- SCANLAN, Mr Damien, Chairman, Grains Research
  Foundation Ltd
- van LIESHOUT, Mrs Joan Doris, Mayor,
  Tweed Shire Council
- WAGNER, Mr Drew, Senior Policy Adviser,
  AgForce Queensland

SYDNEY, NSW – 5 MARCH 2009

- DUDDY, Mr Timothy, Spokesman,
  Caroona Coal Action Group
- ESTRADA-FLORES, Dr Silvia, Principal Consultant and Manager,
  Food Chain Intelligence
- GREGSON, Mr Andrew, Chief Executive Officer,
  New South Wales Irrigators Council
- MACMILLAN, Ms Catriona Morag, Member,
  Management Committee, Sydney Food Fairness Alliance
- McGLASSON, Dr William Barry,
- MILLEN, Ms Elizabeth Jane, Secretary,
  Sydney Food Fairness Alliance

- PARKER, Dr Frances Edith, Member,
  Sydney Food Fairness Alliance; and Adjunct Associate Professor, University of Western Sydney
- SAVILLE, Ms Lynette Murella (Lynne), President,
  Sydney Food Fairness Alliance

PERTH, WA – 24 MARCH 2009

- BARRON, Mr William Graham, Chairman,
  Kondinin Group Ltd
- BERGIN, Mr Neville Keith, General Manager,
  Projects Development, Minemakers Ltd
- HILL, Mr Alan, Director of Policy,
  Western Australia Farmers Federation (Inc.)
- McMILLAN, Mr Andy, Chief Executive Officer,
  Western Australia Farmers Federation (Inc.)
- NEWMAN, Mrs Julie Helen, National Spokesperson,
  Network of Concerned Farmers
- NORTON, Mr Michael, President,
  Western Australia Farmers Federation (Inc.)
- POLLARD, Dr Christina Mary, Adjunct Research Fellow,
  School of Public Health, Curtin University of Technology; Co-convenor, Food and Nutrition Special Interest Group, Public Health Association of Australia
- PRICE, Mr Richard, Chief Executive Officer,
  Kondinin Group Ltd

MELBOURNE, VIC – 25 MARCH 2009

- COOK, Mr Louis, Robert,
- EXINER, Mr Ron, Policy Officer,
  Victorian Local Government Association
- FORD, Mr Graeme, Executive Manager, Policy,
  Victorian Farmers Federation
- HARPER, Mr Todd Andrew, Chief Executive Officer,
  Victorian Health Promotion Foundation
- HARRISON, Mr Darryl, Senior Policy Adviser,
  Victorian Farmers Federation
- HOLLAND, Mr Russell George,

- KERR, Mr Paul, Chief Operating Officer,
  Murray Goulburn Cooperative
- LARSEN, Ms Kirsten Anne, Policy Research Manager,
  Victorian Eco-Innovation Lab, University of Melbourne
- McKENZIE, Mr Alex,
- POOLE, Mr Robert, General Manager, Industry and Government Affairs,
  Murray Goulburn Cooperative
- TESSELAAR, Mr Kevin,
- WATTS, Mr Michael Corey, Healthy Country Campaigner,
  Australian Conservation Foundation
- WOOD, Dr Margaret Beverley, Food Security Officer,
  Victorian Local Government Association

LAUNCESTON, TAS – 1 APRIL 2009

- BARKER, Mr John, Consultant,
  Cuthbertson Brothers
- BYARD, Mr David,
- DICKINSON, Mr Doug, Managing Director,
  Cuthbertson Brothers
- JONES, Mr Wayne, Manager,
  Cuthbertson Brothers
- LOONE, Mr Robert George (Bob),
- McNEIL, Professor David Leslie, Director,
  Tasmanian Institute of Agricultural Research
- MILLS, Mr George Duckett,
- OLDFIELD, Mr Chris, Chief Executive Officer,
  Tasmanian Farmers and Graziers Association
- RICKETTS, Mr Andrew, Convenor,
  Environment Association Inc
- STEEL, Mr Nicholas, Commodities Manager,
  Tasmanian Farmers and Graziers Association
- TOWNSHEND, Mr Beecher, Consultant,
  Cuthbertson Brothers

GUNNEDAH, NSW – 19 MAY 2009

- BANKS, Mr Robert,
- BLOOMFIELD, Mr Derek, Executive Officer,
  Liverpool Plains Land Management
- BLOOMFIELD, Ms Kirrily
- BOWMAN, Mrs Wendy Georgina, President,
  Minewatch New South Wales
- BROWN, Mr Geoffrey William,
- CLIFT, Mrs Phoebe,
- DUDDY, Mrs Patricia,
- HUNTER, The Hon. Robert Leslie, QC,
- LYLE, Mr John Ranken,
- MACKERRAS, Mrs Carol,
- NANKIVELL, Mrs Rosemary Margaret, Chairman,
  Methane Gas Subcommittee, Caroona Coal Action Group
- ROBERTS, Dr Pauline,
- STRANG, Ms Ruth
- WALKER, Mr David
- WILMOTT, Ms Margaret

PERTH, WA – 1 JULY 2009

- BOULTER, Ms Sandra Louise, Delegate,
  Conservation Council of Western Australia; Western Australian Forest Alliance
- CALNEGGIA, Mr Michael James,
- HILL, Mr Alan, Director of Policy,
  Western Australian Farmers Federation Inc. (WAFarmers)
- IPSEN, Mr George,
- LONGHURST, Ms Annora, Planting Liaison Coordinator,
  Carbon Neutral
- MELVILLE, Mr Robert, Director,
  AACL Ltd; and Director, Macro Funds Ltd
- MEWS, Mr Jeffrey Arthur Sydney,

- NORTON, Mr Michael, President,
  Western Australian Farmers Federation Inc. (WAFarmers)
- PATRIKEOS, Mr Peter John,
- ROHDE, Mr Stephen Charles,
- STONEY, Mr Trevor, Director,
  AACL Ltd

CANBERRA, ACT – 31 AUGUST 2009

- BELCHER, Mr Robert Douglas, Managing Director,
  Sustainable Agricultural Communities Australia Ltd
- BRAY, Mr Ron,
- McCLUMPHA, Mr William Thomas, Member,
  Victorian Farmers Federation Sunraysia Horticultural Branch
- MOND, Mr David,
- PATON, Mr Samuel James, Senior Valuer and Agricultural Economist,
  Sam Paton & Associates
- TOWNSHEND, Ms Janette, Director-Accountant,
  Townshend Prudential; and IWC Woodlot Cooperative

CANBERRA, ACT – 18 SEPTEMBER 2009

- CRAFTER, Mr Samuel James, Senior Adviser, Public Affairs,
  Santos Ltd
- CUMMINGS, Dr Jason, Assistant Director, Environmental Policy,
  Minerals Council of Australia
- DAVID, Mr Stephen, General Manager,
  BHP Billiton Caroona Coal Project, BHP Billiton
- GRANT, Mr Martin, Chief Development Officer,
  BHP Billiton Coal, BHP Billiton
- HOOKE, Mr Mitchell Harry, Chief Executive Officer,
  Minerals Council of Australia
- KELEMEN, Mr Stephen Gyula, Manager, Coal Seam Gas,
  Santos Ltd
- MILHAM, Mr Nick, Director, Socioeconomic Evaluation,
  Industry and Investment NSW
- MULLARD, Mr Brad, Executive Director, Mineral Resources,
  Industry and Investment NSW

- PURTILL, Mr James Anthony, Manager, Community and Environment, Santos Ltd
- WOOD, Mr Ian, Vice-President, BHP Billiton Environment and Community Relations, BHP Billiton.

DEVONPORT, TAS – 6 OCTOBER 2009

- ABBOTT, Dr Angelique, Representative, Circular Head Dairy Farmers
- BARKER, Mr John Scott, Consultant, Tasmanian Suppliers Collective Bargaining Group
- BEATTIE, Mr Philip Cameron, Spokesman and Executive Member, Tasmanian Suppliers Collective Bargaining Group
- BOVILL, Mr Richard, Coordinator, Fair Dinkum Food Campaign
- CARTER, Miss Tracey,
- DIBLEY, Mrs Colleen May, Partner, Preolenna Chestnuts
- EVANS, Mr Kim Ronald, Secretary, Department of Primary Industries, Parks, Water and Environment, Tasmanian Government
- FERGUSSON, Mr Mark, Dairy Adviser, Tasmanian Institute of Agricultural Research
- GRIBBLE, Mr Dave,
- JONES, Mr Symon,
- LAWRENCE, Mr John,
- McCALL, Dr Tony,
- OLIVER, Mr Richard Ernest,
- OLIVER, Mrs Josephine Margaret,
- PERKINS, Mr Kemball Lewis, Chairman, Tasmanian Suppliers Collective Bargaining Group
- ROGERS, Mr Grant William,
- SYNFIELD, Mr,
- TYSON, Mr Peter Russell, Leader, Dairy Industry Development, Tasmanian Institute of Agricultural Research
- WILSON, Mr John Phillip,

CANBERRA, ACT – 7 OCTOBER 2009

- ADAMS, Mr Jim, Chief Executive Officer,
  Timber Communities Australia
- AJANI, Dr Judith Ingrouille, Economist,
  Fenner School of Environment and Society, Australian National University
- BAKE, Mr Glenn Keith, Farm Services Manager—South,
  National Foods Ltd
- CORNISH, Mr David Robert,
- DAVENPORT, Mr Alan John, Chairman of Dairy Council,
  Tasmanian Farmers and Graziers Association
- DENNIS, Mr Bruce,
- GULSON, Mr Frederick Theodore, Legal Executive,
  DC Legal Pty Ltd
- HANSARD, Mr Allan, Chief Executive Officer,
  National Association of Forest Industries
- O'MALLEY, Mr Conor Stephen Francis, Group Executive,
  Corporate Services and Logistics, National Foods Ltd
- OLDFIELD, Mr Chris, Chief Executive Officer,
  Tasmanian Farmers and Graziers Association
- SCHIRMER, Dr Jacqueline, Research Fellow,
  Fenner School of Environment and Society, Australian National University,
  and Cooperative Research Centre for Forestry
- STEPHENS, Mr Michael, Deputy Chief Executive Officer,
  National Association of Forest Industries
- THOMAS, Mr Kerry James,
- WAUGH, Mr Ashley James, CEO and Managing Director,
  National Foods Ltd
- WILLIAMS, Ms Penelope Jane,
  Private consultant
- WINGROVE, Mr Gary, National Managing Partner, Advisory,
  KPMG

CANBERRA, ACT – 12 OCTOBER 2009

- BELL, Professor Alan William, Acting Chief of Division,
  Food and Nutritional Sciences, Commonwealth Scientific and Industrial
  Research Organisation

- BURDON, Dr Jeremy, Chief, Plant Industry,
  Commonwealth Scientific and Industrial Research Organisation
- CLARKE, Mr Sydney Ralph,
- CRIBB, Professor Julian Hillary James, Principal,
  Julian Cribb and Associates
- DALY, Dr Joanne, Group Executive,
  Agribusiness, Commonwealth Scientific and Industrial Research Organisation
- GRIBBLE, Mr David,
- JONES, Mr Symon,
- KEATING, Dr Brian Anthony, Director,
  Sustainable Agriculture Flagship, Commonwealth Scientific and Industrial Research Organisation
- LEE, Dr Bruce Thomas, Director, Food Futures Flagship,
  Commonwealth Scientific and Industrial Research Organisation
- MacFARLANE, Ms Tina
- MORELL, Dr Matthew, Theme Leader, Future Grains,
  Food Futures Flagship, Commonwealth Scientific and Industrial Research Organisation
- PRESTON, Dr Nigel, Theme Leader, Breed Engineering,
  Food Futures Flagship, Division of Marine & Atmospheric Research,
  Commonwealth Scientific and Industrial Research Organisation
- PRIDEAUX, Dr Chris, Acting Chief, Livestock Industries,
  Commonwealth Scientific and Industrial Research Organisation

MELBOURNE, VIC – 23 OCTOBER 2009

- DONNISON, Mr Bruce, Managing Director,
  Fonterra Ingredients Australia, Fonterra Australia Pty Ltd
- HANRAHAN, Dr Pamela, Senior Executive Leader,
  Investment Managers Group, Australian Securities and Investments Commission
- MALLINSON, Mr David, Financial Officer, Australia New Zealand,
  Fonterra Australia Pty Ltd
- MEDCRAFT, Mr Greg, Commissioner,
  Australian Securities and Investments Commission
- RAINSFORD, Dr Katrina,
- WILLEMSEN, Mr Ron Gerard, Principal,
  Macpherson and Kelley Lawyers

- WILSON, Mr Robert Thomas,

CANBERRA, ACT – 18 NOVEMBER 2009

- EVANS, Mr Paul, Director, Government and Regulation, National Foods
- JEFFREY, Mr Murray, General Manager, Milk Procurement and Inbound Logistics, National Foods
- O'MALLEY, Mr Conor, Group Executive, Corporate Services and Logistics, National Foods

CANBERRA, ACT – 24 NOVERMBER 2009

- CLAYTON, Mr Graeme (Joe), Project Director, Shenhua Watermark Coal Pty Ltd

CANBERRA, ACT – 30 APRIL 2010

- AMERY, Mr Russell, Grains President, Victorian Farmers Federation
- BEATTIE, Mrs Fatima, Deputy Director General, IP Australia
- DRAHOS, Professor Peter
- DREW, Mr Nicholas James, Executive Manager, Fertilizer Industry Federation of Australia
- HARVEY, Mr John, Executive Manager, Varieties, Grains Research and Development Corporation
- HELPS, Mr Andrew, Managing Director, AgroEco Systems Pty Ltd
- HOSKINSON, Mr Mark, Chairman, Grains Committee, New South Wales Farmers Association
- JEFFERSON, Professor Richard, Chief Executive Officer, Cambia; Director, Initiative for Open Innovation; and Professor of Science, Technology and Law, Queensland University of Technology
- MARTIN, Mr John Graham
- MASON, Mr Benjamin James, Policy Manager, Cropping and Business, Economics and Trade, New South Wales Farmers Association

- McCLUSKEY, Ms Su, Chief Executive Officer,
  Council of Rural Research and Development Corporations
- O'KEEFFE, Mr Leo John, Director,
  Domestic Policy, IP Australia
- PALOMBI, Professor Luigi
- PRESS, Ms Lexie, Senior Examiner of Patents,
  IP Australia
- SHERIDAN, Mr Stephen Francis, Grains Manager,
  Victorian Farmers Federation

CANBERRA ACT – 7 JUNE 2010

- COLMER, Mr Patrick, General Manager,
  Foreign Investment and Trade Policy Division, Department of the Treasury
- CRIBB, Mr Julian Hillary James, Principal,
  Julian Cribb and Associates
- FLEMING, Ms Robyn, General Manager,
  Office of Northern Australia, Department of Infrastructure, Transport, Regional Development and Local Government
- NIXON, Mr Roy, Senior Adviser,
  Foreign Investment and Trade Policy Division, Department of the Treasury
- ROSSER, Mr Michael, Senior Adviser,
  Foreign Investment and Trade Policy Division, Department of the Treasury
- WILKINSON, Mrs Lynne, Chief Executive Officer,
  Ausbuy