



COMMONWEALTH OF AUSTRALIA

# Official Committee Hansard

## SENATE

SELECT COMMITTEE ON AGRICULTURAL AND RELATED  
INDUSTRIES

**Reference: Food production in Australia**

THURSDAY, 5 MARCH 2009

SYDNEY

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**SENATE SELECT COMMITTEE ON  
AGRICULTURAL AND RELATED INDUSTRIES**

**Thursday, 5 March 2009**

**Members:** Senator Heffernan (*Chair*), Senator O'Brien (*Deputy Chair*), Senators Fisher, Milne, Nash and Sterle

**Participating members:** Senators Abetz, Adams, Arbib, Barnett, Bernardi, Bilyk, Birmingham, Mark Bishop, Boswell, Boyce, Brandis, Carol Brown, Bushby, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Farrell, Feeney, Fielding, Fierravanti-Wells, Fifield, Forshaw, Furner, Humphries, Hurley, Hutchins, Johnston, Joyce, Kroger, Lundy, Ian Macdonald, McEwen, McGauran, McLucas, Marshall, Mason, Minchin, Moore, Parry, Payne, Polley, Pratt, Ronaldson, Ryan, Scullion, Siewert, Stephens, Troeth, Trood, Williams, Wortley and Xenophon

**Senators in attendance:** Senators Colbeck, Farrell, Fisher, Heffernan, Nash and O'Brien

**Terms of reference for the inquiry:**

To inquire into and report on:

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

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**Committee met at 9.29 am**

**CHAIR (Senator Heffernan)**—I declare open this public hearing of the Senate Select Committee on Agricultural and Related Industries. The committee is hearing evidence on the committee's inquiry into food production in Australia. I welcome you all here today. This is a public hearing and a *Hansard* transcript of the proceedings is being made. Before the committee starts taking evidence I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee. The committee prefers all evidence to be given in public, but under the Senate's resolutions witnesses have the right to request to be heard in private session. It is important that witnesses give the committee notice if they intend to give evidence in camera. If a witness objects to answering a question the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the ground which is claimed. If the committee determines to insist on an answer a witness may request the answer be given in camera. Such a request may, of course, also be made at any other time. I would also ask witnesses to remain behind for a few minutes at the conclusion of their evidence in case the Hansard staff need to clarify any references, and I remind people in the hearing room, including myself, to ensure their mobile phones are either turned off or switched to silent.

[9.31 am]

**ESTRADA-FLORES, Dr Silvia, Principal Consultant and Manager, Food Chain Intelligence**

**CHAIR**—I welcome Food Chain Intelligence and Dr Silvia Estrada-Flores. As principal consultant, would you like to make an opening statement?

**Dr Estrada-Flores**—I am the principal consultant of Food Chain Intelligence, which is a consultancy firm that provides advice in the supply chain of perishables, particularly fresh perishables, to the food industry. My submission is really about the role of innovation in terms of resolving the problems that food production in Australia and overseas are facing. The ‘food production’ term is probably not encompassing the real issues that are out there. It is not just about food production. It is also about food manufacturing, equality of food distribution and what kinds of products we are offering to the population, so it is a bit wider than just production. An issue that the world is facing now is food security. Food security is really about food supply and food safety. How do we keep the product safe until it reaches the consumer and how do we ensure that chains are resilient to changes in governments and in the economy? The other aspect is sustainability—not only environmental sustainability but also financial sustainability. We cannot tackle one issue without taking the wider spectrum of activities that food chains encompass.

I presented three separate submissions in the last year. One was to the review of innovation headed by Dr Cutler. The second was the Garnaut review. The third one is this Senate inquiry. I am passionate about the subject. It is not a commercial interest. It is simply that I have been working in this area for the past 20 years or so.

When I speak of a ‘whole-of-the-chain’ approach what I am really saying is let us not just believe that a green revolution like what we had in the seventies is going to solve the problems that we have now. All prices are very different from what we had in the seventies. In fact, FAO has recognised that fact and has said, ‘Yes, we want a green revolution, but it’s not just about production, it’s about the entire chain of distribution of food.’ Just to highlight this issue, in 2007 and 2008, about 6.5 per cent of the entire fleet of trucks in the US has basically disappeared, because companies are going bankrupt and getting rid of those assets. The question is: when we finally face an upturn, rather than the downturn in the financial situation that we are facing now, how are we going to distribute foods to the population if we lack the capacity? The US is going to face that issue. I believe that the Australian conditions are different, but we may face the same issue of how we can distribute foods to the population if we do not have enough infrastructure.

There is a very specific case that I investigated in the past, which is the supply chain of fresh mango. Some growers in the Northern Territory, for example, have production but they do not have the means of transferring that production from the Northern Territory to Sydney, Melbourne or the other states. Sometimes it is not an issue of production; it is also an issue of distribution, and that is my entire point.

Food safety is another aspect that we should be putting more attention to. There are studies already under way in the United Kingdom to assess the affect of climate change on food safety. I believe some funds/grants have been made available, but I am not terribly sure that there is the research capacity needed to actually respond to the challenge. That is another issue that concerns me. For example, how would we react in Tasmania if there were a food incident in Hobart? The speed of reaction that we must have in that particular circumstance is very different from what we would do in a Sydney based outbreak of food poisoning. All of those aspects that are related to the centres of population are issues that need to be addressed in the design and research of food distribution systems. I have proposed in my submission a number of measures to tackle those issues. That concludes my introduction.

**CHAIR**—The scientists are telling us that the food task is going to double in the next 40 years and that 30 per cent of the productive land of Asia, where two-thirds of the world's population will live, is going to go out of production. In terms of the interest that you have, which seems to be in the area downstream from production, do you think that refrigeration in the long term will become antiquated and that there will be some other method?

**Dr Estrada-Flores**—I think that refrigeration is still the technology that is commonly used to keep chilled products in their normal state. Production of frozen foods is also important. I guess there has not been a technology that has challenged refrigeration as an equivalent for transporting fresh foods. We have high-pressure processing, but all of these technologies will change the structure of the food. There is currently no replacement for food refrigeration. In a challenging environmental climate we will require more refrigeration because temperatures are bound to rise. For example, if we have a three degree increase in temperatures that means that we will have to keep products safe under more challenging conditions than we currently have. In my view, refrigeration will continue to be an important technology.

**Senator O'BRIEN**—I notice you talk about the use of hydroponics in cities. I am a Tasmanian senator and I know that recently hydroponic wasabi has been produced in a rural area. This is because of flavour, the amount of the product that can be used, soil effects for flavour and so on. How much work is being done in the hydroponics field? I am guessing you are talking about using hydroponics in the cities more for co-locating food production with the population. What is happening there?

**Dr Estrada-Flores**—Hydroponics are being commercially used in Australia for lettuce, herbs and leafy greens. I believe that we can do better. An example is the Netherlands, which has a very small area for production. They have embraced hydroponics fully, because that is probably their only way to keep production of horticultural products, including flowers. I believe Australia has improved but we have a lot of ground to cover with respect to countries such as the Netherlands.

**Senator O'BRIEN**—What about the cost of production versus land based production?

**Dr Estrada-Flores**—Again, the cost of production is probably a question that has to also encompass distribution. For example, if we have a hydroponic centre in Sydney, we will avoid the entire transport chain from, say, rural areas to Sydney. I am not sure how hydroponics will fare because, to my knowledge, there are no studies that actually look at those types of systems. In terms of just purely production, hydroponics is definitely a bit more expensive.

**Senator O'BRIEN**—You talk about downscaling the size of production chains and going away from the major food processing plants to smaller ones. Could you elaborate further on that?

**Dr Estrada-Flores**—Yes. In the past we have looked at how to make things bigger rather than smaller. The outcome of that is that we have bigger centres of manufacturing than we had 10 or 20 years ago, but that also means larger distribution chains. Therefore, a new train of thought is being investigated in Europe as a way of tackling food production. They are actually downsizing the size of food manufacturing to have food manufacturing distributed in a country. For example, rather than having production of mango in the Northern Territory in an exclusive manner, can we actually have other areas of production around the country so the transport decreases? That will impact cost and also the environmental footprint.

**Senator O'BRIEN**—Climatic conditions might limit you with mangos, but there may be other examples you want to give us.

**Dr Estrada-Flores**—Yes, that is probably a bad example, but you get the idea.

**Senator O'BRIEN**—In terms of broad scale agricultural production and making the assumption that, if we do see a rise in average temperatures, we will see a reduction in the amount of productive land, do you have any views on what the impact of that will be on our economy and our domestic food consumption?

**Dr Estrada-Flores**—It is quite hard to tell exactly what will be the impact in terms of numbers. If you have had a chance to read the submission that I sent to the Garnaut review you would see that there are a number of impacts in livestock, agriculture—the entire distribution system. To my knowledge there are no studies into the financial impact. In terms of climatic conditions and their relationship with safe horticultural production, some areas will become useless to grow anything, but some areas will improve production. There is a trade-off in terms of how climate change is going to affect Australia, and the actual outcome of that trade-off is not known. Even CSIRO, which has predicted the changes in climate, has not come up with an answer as to how much this will impact.

**Senator O'BRIEN**—Thank you.

**CHAIR**—Given the global food task and what Senator O'Brien has just referred to, in the future, if the population grows to nine billion people, what will be the change in what people consider to be food? Will people still want meat protein or vegetables? Is there going to be a change in what we eat because of the circumstances we face?

**Dr Estrada-Flores**—The evolution of what we eat is proven. As humans we have become more protein based than vegetable based in our diets. That has been a change that is associated with production. When production started we had vegetables and basically grains and that was the basis for sustenance. Our daily intake was based on grain. As we advanced and we started to produce more animal protein and we started to harness the advantages of having more protein, diets changed. But those changes have happened over a huge number of years. From now to, say, 20 years from now am I expecting to see huge changes in the way that we eat? No. Over a timescale of 50 years, what we were eating 50 years ago is not so different from what we are

eating now. Technologies have changed, but the actual food has not. We are still eating steaks. We are still eating salads. As consumers we do not like change. It has also been proven scientifically that as consumers we do not embrace change that easily.

**CHAIR**—In terms of the family budget concerning the contest between the goods and chattels of the house—what is in the garage and what is in the fridge—do you think food is going to take a larger proportion of the household budget in the future?

**Dr Estrada-Flores**—It will depend on how prices change in terms of the basket that people buy in the supermarket. We are already seeing that people are cutting back on protein a little bit because the prices are high. Yes, you are going to see changes related to price.

**CHAIR**—I am talking about the proportion. A lot of people go to a lot of trouble to buy a car or a flash TV, but do you think that in the future that will be a lesser priority in the household budget than what you are going to eat?

**Dr Estrada-Flores**—What you are saying is the entire food basket versus other aspects of daily life?

**CHAIR**—Will supply and demand for food change the dynamic of the average household budget so that getting your food is probably more important than the second TV?

**Dr Estrada-Flores**—Absolutely. Food is a primary necessity.

**Senator NASH**—Thank you for a very thought-provoking submission. You do not necessarily tend to look at these sorts of things from this perspective, so on that basis alone it is very good to see. I am very interested in this idea of arable land, prime agricultural land. You say in your submission that there should be a minimum quota of land that needs to remain dedicated for food production. How would you see that working? Who would make decisions, how would you enforce it and where would it be?

**Dr Estrada-Flores**—This is talking about regulating what area of crops is dedicated to food and what part is dedicated to biofuel. This came from a visit that I did to Mexico about two years ago. I am Mexican; I have dual citizenship, as you saw in my submission. At that time in Mexico people were starting to switch their production of crops to biodiesel rather than food production. Mexico is a country that is hugely dependent on crops, particularly corn. If you saw the news, that led to riots; there was an increase in the price of corn. The diet that we have every day is based on tortillas, which are made with corn. At that time the government was thinking about regulating what part would go to the production of food and what part would go to the production of biodiesel. I am not privy to the details, because they never did that. However, 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. That is the point that I want to address. I am not terribly sure about the mechanisms, because I am not an economist or a lawyer. The actual principle is that the best crops should be reserved for food production because that is a primary necessity. Biodiesel is not exactly a necessity. It is now a necessity to transfer foods themselves and other items, but it is not something that we should pin our survival on. In my view, food is.

**Senator NASH**—That is true. I completely agree. I think this is really a key issue at the moment, because we are seeing the food versus fuel debate right across the world. I understand how farming works in Australia. I am declaring my interests as a farmer. It comes back to the basic principles. If you have a farmer that owns their land and they can get more money for selling their product for biofuel, who is to say that a government or another entity should tell them, no, they cannot use their land to produce those goods, even though they are going to get a higher return, because of the social good aspect? If they are not being compensated for the social good of producing a food at a lower cost, why should we be telling a farmer that they cannot get the best return for their land?

**Dr Estrada-Flores**—It is a complex issue. The farmers themselves are already subjected to other forces, such as supermarket power. They still have to sell at a level of prices and in a structure that benefits supermarkets. They are already being subjected to higher powers to decide how they grow and sell their crops. It is not as if a government resolution about a percentage of land that should be dedicated to food and a percentage of land that should be dedicated to biodiesels will hugely impact their right to produce. I think that they are already subjected to this. It is just that it is not the government.

**Senator NASH**—That is true. That still happens in what I would call a free market environment. That farmer can choose to sell their farm if they are sick of dealing with Coles and Woolworths and they are sick of taking low prices. As a hypothetical and probably simplistic example, if a farmer is told, 'For a percentage of your farm, per acre you must receive a lower return because we're going to designate what you can grow on that', is that fair? I am trying to get back to what is going to be a fair approach. Is it fair to tell a farmer what they can and cannot grow on their land and what return they should get?

**Dr Estrada-Flores**—I am not terribly sure that fairness is more important than food security.

**Senator NASH**—I absolutely agree. If that is going to be the outcome, and whatever the decision is that, yes, we are going to set aside some land for arable food production purposes, I just do not see how that can be done without some kind of compensation, assistance or equivalence on the other side of the ledger for that farmer who is, by these practices, going to have to receive a lower income. That is where the fairness comes in. It is not fair to ask a farmer to do that for the social good and then not have some sort of compensation. Would you like to discuss that a bit further?

**Dr Estrada-Flores**—Yes. It really depends on food prices at the time that such a scheme comes into place. We are seeing that food prices are going down, just because oil prices are going down. This is not going to last forever. The moment that oil goes up again, because there is a stronger demand in Asia, prices of food are going to increase again. There will always be a fight between the price of biodiesel and the price of food, but in terms of food security it is probably something that will need to be enforced if we want to keep feeding the world population. It is a desperate measure for a horrible scenario where food is so dear that we must actually produce food rather than biodiesel.

**CHAIR**—That surely goes back to my point. This is about the market. Once you start to play with the market you will destroy the continuity of supply because you will have this sort of business instead of this.

**Senator NASH**—We have been discussing the issue of arable land and biofuels. Would you extend that out to mining? I ask that on the basis that there is a lot of interest at the moment in mining and where it is occurring or potentially going to occur on prime agricultural land. Would you apply the same principle to mining as you would to biofuels in terms of separating this and making sure that we have a certain amount of land quarantined, if you like, for agriculture?

**Dr Estrada-Flores**—It is hard for me to give an opinion on that subject, because I am not aware of mining being a threat to food production. Now that you mention it, I will investigate that matter.

**Senator NASH**—I would like you to do that, if you could, because your perspective on it would be very good. I have another question on a different issue. In part of your submission you were talking about considering lowering the barriers to food imports to tackle food affordability, and I understand the principle that you are getting at there about lowering the cost of food. Have you looked at what quality assurance regimes either should be in place now that are not or would need to be? Given that we have a very clean, green and safe food that we produce domestically, how can consumers be absolutely sure if we are going to potentially open our borders that the quality assurance will be there?

**Dr Estrada-Flores**—Indeed, that is a concern. You can see examples in the US. One of the outbreaks that they had recently was in lettuce, spinach, tomato and chilli. Tomato and chilli were imported and they are struggling to actually find a quality assurance system that would provide food safety at 100 per cent. The issue there is that when we open our borders we will be looking at probably a higher number of food outbreaks and that is a risk that the US has decided to take, because they need to.

**CHAIR**—Where does the lettuce come from?

**Dr Estrada-Flores**—The lettuce was grown in the US. The tomato and chilli at issue were grown in Mexico.

**Senator NASH**—Thank you.

**CHAIR**—Senator Colbeck.

**Senator COLBECK**—Biosecurity is effectively the key barrier that we have in Australia. We do not have high tariffs. The tariffs average at about five per cent. What effect is lowering our biosecurity barrier going to have in respect of prices? That is effectively the one barrier that we do have? It is not a barrier in the sense of price at all. It is really a barrier in the sense of protecting the integrity of our production systems and the disease levels that we have in the country, and impacting on that biosecurity barrier could in effect increase the cost of food in Australia because of additional issues that we would have to deal with.

**Dr Estrada-Flores**—Yes. I cannot provide a cost-benefit analysis of that, but if Australia is going to be able to increase their offering of food products I do not think that Australia can just rely on itself. Right now there are heaps of products that Australia is importing, and I do not see that trend going down. We will have to face the fact that we will have to increase our level of risk in terms of food being imported from overseas. I do not necessarily believe that biosecurity

has to lower its barriers, but perhaps it needs to increase the speed of response to emerging issues.

**Senator COLBECK**—You have some interesting information with respect to distribution chains. I have seen your work on mangoes, which is very interesting and has value for other sectors than just the mango industry and the issues that they have faced. I know that it has been transferred on and discussed with, say, the fishing industry out of Tasmania and their issues in dealing with some of the same problems. I am interested in the impact of distribution chains in the ratio of the retail price that goes to farmers versus the cost in that actual distribution chain. In one of the submissions—and I am not sure whether or not it was yours—there was some discussion that traditionally about 50 per cent of the retail cost of a product went to the farmer but now it is somewhere near 20 per cent. Do you have any information on the impact of the actual distribution chain and how that may be impacting on the returns to growers versus the cost at the retail level?

**Dr Estrada-Flores**—Those percentages that you mentioned did not come from my submission.

**Senator COLBECK**—I think they are from another submission.

**Dr Estrada-Flores**—The issue of supermarkets and the equality of profit in the retail supply chain has been tackled already by the ACCC. There are a number of submissions there. I have been reading them because that is also something that interests me. We have varied responses from growers saying that retailers get 50 per cent of the profits, and other people saying that they do not get a profit at all or six per cent or less than 10 per cent. It is hard for me to give you a number. What I do know is that growers could get better value for their crops if there was more equality in the retail chain, but for that to happen all the players need to be involved. It is not only the retailers. Think about the risk that the supermarkets face when a product arrives. Think about a piece of meat, which has 10 days of shelf life. Supermarkets get that piece of meat with probably half the shelf life. If that product spoils, who really pays for that spoiled product? Is it the farmer? Is it the transporter? No, it is the retailer. They are increasing their profits because they are raising their risks. The question is: how can we increase the level of risk for farmers but also increase the profit?

**Senator COLBECK**—That is a very interesting point. There would be a lot of people who argue that it is the farmers who actually pay for that, because that risk is built into the price that the retailers pay for the product in the first place. They assess what their risks are through the chain and then that reflects on the price taker, who at the end of the day is generally the farmer. Unless they have something that is quite unique and quite specific, then it is generally the price taker, the farmer, who ends up paying for all of those risks in the price that they are paid. Whether it is at the farm gate or an auction price, those things are all priced in through the process. Again, that is an interesting discussion, but it is the length of the distribution chain, the processes and the centralisation of distribution chains into large distribution centres. For example, processed vegetables that come from my home state of Tasmania are sent here to the north island and then sent back again for distribution into the system. Those centralised distribution services, while they might have efficiencies for the retailer, actually impact on the cost and are effectively paid for by the farmer at the farm gate. I would like to move on to your discussion about innovation systems. I am interested in your comments with respect to the

National Food Industry Strategy. I would like you to expand on your thoughts about that concept. Obviously it has been taken out of the system now, but how do you see that having an impact through the research and innovation element of food production?

**Dr Estrada-Flores**—As I mentioned before, I believe that innovation is going to be the answer to many environmental challenges and financial challenges that we are facing today. The idea of having a national system of innovation and focussing on basically food is that we will have that whole-of-the-chain approach that we are lacking at the moment. Right now you will hear other speakers talking about the same thing. We have had a strong production of funding going to food research and that is going to impact to a degree with innovative products and innovative technologies that we can provide in the timeframe of 10 years from now.

To recover from this time of no funding and pretty much no innovation in the past two years, how can we get synergies happening and open the eyes of people who are just investigating manufacturing and just investigating transport? How can we get them working together? To me NFIS was providing that platform. It was not because it was NFIS. It is simply because they had a whole-of-the-chain approach and they engaged various players in their entire food chain to come up with innovations.

We were talking about the role of supermarkets in the entire food chain. Supermarkets need to be encouraged to be the ones heading some degree of innovation in Australia. We are not doing that at the moment. We are not engaging in research and we are not engaging in terms of developing a framework for innovation. However, they are the ones that are distributing the most food to the population. That to me is a bit disconcerting, because we will not get this right until we involve all the players in the food chain.

**Senator FISHER**—I have a question following on from Senator Colbeck's earlier questioning of you. You talked about perishable product and suggested that the retailers are bearing that cost. Senator Colbeck was speculating that perhaps it is the farmers. Coming back to what you were just saying about engaging more, do you think there is a way that farmers, by engaging, could make it such that food is less perishable? I cannot imagine how, because they deliver the freshest product they can anyway. But could that engagement lead to a reduction in the perishability risk, irrespective of who is bearing that cost at the moment?

**Dr Estrada-Flores**—It is all about timeframes. In terms of perishable foods it is the timeframe that a grower has to grow the crops, to send them away to the distributor and then from there to the entire supply chain. It is always about timeframes. I do believe that better communication along the chain will improve the chances of actually having those products earlier in the market, which is a great advantage for perishables, because then the window of commercialisation is larger, there is less waste and so on. There are advantages associated with that.

**Senator FISHER**—Lots of advantages.

**Dr Estrada-Flores**—Yes. I see better communication between farmer and retailer will do that. I just do not see the level of trust and commitment in the chain to achieve that, which is why you need a platform. You need an intermediary, if you wish, that brings the parties together and talks

about the issues of the industry, whether it is innovation, regulation, food safety or financial issues. I believe that Australia needs that platform.

**Senator COLBECK**—I will keep going on that process. Again, I reflect on the work that you did with the mango growers. One of the important things that came out of that was their increasing understanding of their distribution network. I am interested to know what your perception is of how well a lot of the growers understand their production chain and also their market.

**Dr Estrada-Flores**—The level of understanding, depending on the industry and the product, can be varied. Horticultural industries are not terribly integrated. It is only if we talk about productions that are really working in a network of growers. For example, lettuce is a good example. They are working at the highest level of networking, but mango and other fruit growers are not. There is obviously a problem in terms of the variety of structures that you have in horticultural industries, meat industries and so on.

**Senator NASH**—Which one did you say was working well?

**Dr Estrada-Flores**—Lettuce is highly integrated and most of them are highly technical, because they face a lot of food safety issues, whereas then you have mangoes. I am talking about mangoes, because there is a study that I performed with other CSIRO researchers in the food supply chains. We studied mango, meats, grains and sugar. To me, mango is one of the most interesting cases because they are highly fragmented. We have mango growers doing it as a hobby. Therefore, they are not interested in what happens with the product after it goes. After the product leaves the farm it is someone else's problem and they do not care. Then you have mango growers that live from that and they are interested in knowing what happens to the product out there, but they do not get that flow of communication to them. You have all levels.

**Senator COLBECK**—I am really interested in your perspectives with respect to research and development. My understanding is that the CSIRO's decision to withdraw from horticultural research was largely an internal one of the CSIRO. Is that a reasonable understanding? The government has made some decisions with respect to funding of CSIRO. They then made some internal decisions about which areas they would fund and gave their reasons for that. What do you see as the drivers for their making that decision?

**Dr Estrada-Flores**—This is an interesting topic, because I did have a discussion about two weeks ago with Dr Joanne Daly, who is the chief of the agribusiness division in CSIRO. Her comments were basically in terms of the budget cuts that CSIRO has gone through and the fact that NFIS has disappeared. With the disappearance of NFIS the FIG grants also disappeared. There was no funding flowing to CSIRO to sustain either horticultural or food research. The food aspect of CSIRO has suffered because there is no funding out there.

**Senator COLBECK**—Effectively, there was a chain of events?

**Dr Estrada-Flores**—Yes.

**Senator COLBECK**—What about their relationship with the research and development corporations?

**Dr Estrada-Flores**—They fund substantial research with CSIRO, but not necessarily into the food side of things. As a researcher in CSIRO I obviously was in charge of developing proposals and so on, and I would say that from 100 proposals that we put in perhaps one per cent or two per cent were granted. Competition is fierce for funds and it is not only competition between CSIRO, universities and other research providers; it is also within CSIRO. CSIRO competes with CSIRO to get those RDC funds. That is one of the drivers and why I feel that a coordinated approach will solve those issues, because then you will not have people competing. Capable people could be doing better things with their time, but they have to compete on sometimes an equal basis.

**Senator COLBECK**—Thank you.

**Senator FARRELL**—I was interested in your comments about shelf life. I had experience with some consumer resistance to greater shelf life with meat products. Some of the companies were vacuum packing the meat, which gave it almost double the shelf life and yet the consumers did not like it, so they went back to alternative systems that were not as fresh as that. I was also interested in your comments about the Supermarket to Asia program, which went from 1996 to 2002. I had some sort of involvement in that myself, but it did seem to peter out. Have there been any reports on the success or otherwise of that scheme and can you access those for us? Or have you had any involvement with it that you might be able to tell us about?

**Dr Estrada-Flores**—It was before my time in CSIRO. I arrived to Food Science Australia in 2001 and Supermarket to Asia at that time was already finishing its operations. There were a couple of projects that CSIRO was involved with in terms of Supermarket to Asia, and one was a study in container transport of fruit to Asia. In the sense of scientific outcomes that was great. I am not aware whether that actually raised the profile of Australia as an exporter or whether there is a financial quantity that can be associated to the outcomes of the project. What I do know is that it encouraged researchers in CSIRO to look at the wider picture and to look at the financial aspects of food distribution in composite. It was an eye-opener for many CSIRO researchers and I know that many research areas grew from that.

**Senator FARRELL**—Can you track down some of those reports to see whether or not there was anything?

**Dr Estrada-Flores**—I am not in CSIRO anymore, but I can put you into contact with some people there.

**Senator FARRELL**—I would appreciate that. Thank you.

**Senator COLBECK**—I would like to follow on from the discussions we were having about the investment in R&D. Do you have any sense of what level of investment in that innovation area might be required? There has obviously been a significant chunk coming out through the withdrawal of CSIRO and the withdrawal of the food innovation grants, but was that at a reasonable level? Would we at least need to go back, say, to that level or a higher factor to be at a reasonable level to be able to promote the outcomes that we are looking for?

**Dr Estrada-Flores**—I believe that I have the figures that NFIS was receiving in, I believe, a four-year timeframe. The FIG program was almost \$35 million over five years.

**Senator COLBECK**—Are they minimum levels that you would see as being necessary to—

**Dr Estrada-Flores**—Reactivate.

**Senator COLBECK**—reactivate where we are to? But that would be at a minimum level.

**Dr Estrada-Flores**—I believe so. NFIS was able to activate research with \$35 million over five years. As much as I would like to see more funding for innovation and research in the food industry I know that the situation is probably not going to let us see that, but \$30 million to \$35 million over five years would definitely go a long way.

**Senator COLBECK**—What about coordination of effort between the research and development corporations as well as the rural R&D corporations that are basically commodity based and some of these other programs? Do you think there has been enough coordination and focus of effort through those particular processes?

**Dr Estrada-Flores**—No, I do not believe that. I think some efforts in terms of, for example, sustainability in horticulture can actually be linked to what the meat industry is doing in terms of measuring their greenhouse gas emissions, water consumption and so on. Food processes are linked to each other and there is no communication flowing from within RDCs. There is no communication flowing from CSIRO to RDCs. I emphasise again the need to have a platform that can serve as a communication bridge to all of these bodies.

**Senator COLBECK**—Even previously there probably was not. An NFIS platform was there, but I would have to say I am not certain that it actually connected in the way that you are talking about it being connected, so that there was that integrated approach and that coordinated look at the research. There was quite a lot of research being done. What about taking it to the other side of the equation, which is of course the extension of that? Do you have any comment on the extension of that research so that the understanding of that actually got out to the production level?

**Dr Estrada-Flores**—There are different levels of networks that we have to look at when we plan a national food innovation system. Who are the players in the real-world food distribution system? That is growers, farmers, transport providers, supermarkets, packaging companies and so on. That is the real world. When I say ‘real world’ I mean those guys who actually do things. Then you have researchers, who are also guys who do stuff, but it is the innovation stuff. In there we have different players as well. We have RDCs, CSIRO, consultants and other bodies doing research. We have different chains within a chain. We have suppliers of innovations and we have receivers of innovations. We need to link each part of that supply chain of innovations, but we also need to link their supply chains in terms of food production and innovation. There are different levels of communication that we will need to have in a national food system. The model that I proposed in the submission to the Cutler review is on pages 25 through to 28. To me there are at least three different levels and we must tackle all the levels if we want to have the levels of communication within different players in the food arena.

**Senator FISHER**—This may not be within your area of expertise, but looking at it in the context of food security, you would no doubt be aware of the debate about the extent to which

our wonderful livestock—cattle and sheep—contribute to carbon emissions. What do you know about that and what are your views?

**Dr Estrada-Flores**—MLA is tendering a contract to investigate the real impact of cattle and sheep production, as in red meat production—not only cattle and sheep but right through the chain.

**Senator FISHER**—Right through the methane producing chain?

**Dr Estrada-Flores**—That is right. The idea is that there are differing points of view on how meat is impacting greenhouse emissions and water consumption. The data that is out there is very diverse because it comes from different countries and different production systems. For example, in Australia we have pasture rather than feedlot and so on. Trying to grab data from other countries and extrapolate that to Australian conditions is basically impossible.

**Senator FISHER**—They essentially eat carbon here in a way that they do not in other countries.

**Dr Estrada-Flores**—Yes, what is the footprint? I do not think that Australia has an answer yet, and that answer will not come until more research is done in terms of the actual carbon footprint that we have in Australia and not overseas.

**CHAIR**—Doesn't that mean we are not ready to make the decision whether agriculture is in or out of trading?

**Dr Estrada-Flores**—Not until there is hard data that shows what that impact is.

**CHAIR**—Senator Nash.

**Senator NASH**—We could probably sit here and ask you questions about your submission all day, because it is very interesting. One of the things I wanted to finish up with was your reference to food waste. It is so interesting in this day and age when we are completely focussed on not wasting water that, as far as I can see, there is no discussion whatsoever about not wasting food. Do you have a comment to make, given that you have raised it in your submission?

**Dr Estrada-Flores**—I have only found one study that has been done here in Australia. The study shows quite a large proportion of food going to waste, but we do not have a series of studies that looks at food waste at home. I challenge you to go today, at lunchtime, and see about five bins around this area to see what is in there. You will find that quite a large proportion is going to be from McDonald's and so on—food waste. We have gone through all the hurdles of bringing this piece of meat, lettuce and tomato to the consumer and it is wasted. We have double waste. We have all the waste and effort before, and then we have that product already there with no valuable use. The question is: can we do something about that product that is being disposed of? Can we educate consumers?

**CHAIR**—We used to feed it to the pigs.

**Senator NASH**—Or our parents put it in the soup.

**Senator FISHER**—As a supplementary to Senator Nash’s question, there is another tranche of waste, which is food that is reaching expiry date. This is food that is packaged but where we have a balancing of health needs and expiry dates. In our food shortage environment, do you have views about balancing the so-called health needs of this very sanitised country that we live in with now the need to preserve and use our food as best we can?

**Dr Estrada-Flores**—We can see the level of waste that exists at retail. This is why I was talking about the risk that retailers take when they take on perishables. They say it is less than 10 per cent, but I have not seen a firm study that actually shows values of food waste at retail level. Retail is not the last frontier. As you said, we have the consumers. We do not know the level of waste due, say, to inefficient domestic refrigerators or inefficient practices of consumers. It will be really interesting to have firm data on the different levels of the chain. We have waste at all levels. Let us not think that the consumer is doing all the damage. The food waste is across all levels, from production right through to consumption.

**Senator NASH**—It really is an education-type scenario. We look at water now and everyone thinks water is scarce so they are careful with it, but nobody really considers that food might one day at some point be scarce. People walk into the supermarket and think that it is always going to be there. Educating people where they do not think there is a problem and there is no potential scarcity might be difficult, but it is obviously something we should be looking at doing now before it is an issue, if it is going to be an issue.

**Dr Estrada-Flores**—I agree. One of the aspects we are raising awareness of is the food prices that we were experiencing about six months ago. Many of my friends were looking very carefully at what they had in their domestic fridge and ensuring that they did not waste, because it was painful. Luckily pain is sometimes required to actually put value on things that we take for granted.

**Senator NASH**—And change behaviour.

**CHAIR**—Thank you. Our time with you is up and we are grateful for a very thought-provoking submission and presentation.

**Dr Estrada-Flores**—Thank you. I hope that is useful. Good luck.

**Proceedings suspended from 10.30 am to 10.47 am**

**GREGSON, Mr Andrew, Chief Executive Officer, New South Wales Irrigators Council**

**CHAIR**—You are aware that we are under privilege and you can ask for questions to be taken in camera. I welcome the Irrigators Council. If you would like to make an opening statement, we will ask you some questions after that.

**Mr Gregson**—My humble apologies for my delayed arrival this morning. I have just come from a meeting with Hon. Carmel Tebbutt, Deputy Premier of the state of New South Wales. It was on a matter of some importance not only to irrigators in New South Wales but also to this inquiry. It is a matter that has been raised in the last couple of weeks in the time that it took to negotiate Senator Xenophon's package as part of the stimulus deal and it is an issue that will devastate irrigation and communities reliant on irrigation right across New South Wales. Please accept my apologies, but it is a matter that is relevant to you and I will go through it today.

Thank you very much for the opportunity to address the inquiry today. We greatly appreciate it. We have lodged a written submission, which I am sure you have all taken the opportunity to read thoroughly, make notes on and be prepared to ask questions on. I apologise for not having numbered the pages, but I would like to turn to section 1 of that paper, which is on about page 3. There is a heading in italics that probably sums up the submission we would like to make. It states that the 'Price of water equals price of food'. We have included in our submission some of the details in terms of the contribution of irrigated agriculture to Australia's total agricultural production and indeed to its production of food. In the context of the current federal policy debate, that sentence that the 'Price of water equals the price of food' is perhaps the most telling thing that we could submit to this inquiry.

The New South Wales Irrigators Council has long been a champion of the recognition of water as a property right separate from that of the land. As a result, we have not negotiated with the government over their intervention in the water market and the Commonwealth's intention to purchase water licences. In fact, we support that as a means of returning water to the environment as a policy aim of the Commonwealth government. That said, we have asked long and hard that any intervention in the market takes into account the impact that that intervention will have on price and, importantly for this committee, the result that will have on the price of food. It goes without saying that water, of course, is an important input and in fact the primary input for irrigated agriculture. As a result, any increase in its price will have a direct increase on the price of food that Australia produces. Of course Australia does not operate within the confines of its own border. We are part of an international market. As a result, any dramatic increase in the price of water that is not matched by a resultant increase in the price of the output of an irrigated agricultural entity will result in their ceasing to produce, which of course means that Australia therefore has to import more of its food.

To come clearly to the point that I am talking about in terms of the price of water, Senator Xenophon negotiated with the Commonwealth recently a package to bring forward funds to purchase water entitlements. We have long held the view that intervention in the water market to purchase entitlements should be matched by funds to upgrade infrastructure to ensure maintained productivity. That did not occur as part of the negotiated package with Senator Xenophon. What did occur was simply a decrease in the time span in which those funds will be spent to purchase

water. The Commonwealth did not recognise, despite the efforts of the New South Wales Irrigators Council, and Senator Xenophon did not recognise, again in spite of our efforts, that there are significant barriers to trade that remain in place across the water market in the Murray-Darling Basin. I will not pull any punches in this respect. Victoria has in place two specific barriers to trade that mean that the water purchased by the Commonwealth will not come from that state. In fact, of a total purchase at \$2,400 a megalitre as a nominal figure, some 791 gigalitres will be purchased for that over the four years of the \$1.9 billion package. Less than 25 gigalitres—in other words, less than 10 per cent—will come from Victoria.

**Senator FISHER**—Can you say those numbers again?

**Mr Gregson**—At \$2,400 a megalitre, as a nominal figure—

**CHAIR**—Is that high security?

**Mr Gregson**—That is water. In other words, if you take into account the cap factor equivalent, for example, a licence of 1,000 megalitres at 50 per cent would deliver 500 megalitres of water.

**CHAIR**—That is a net delivered figure?

**Mr Gregson**—That is correct.

**CHAIR**—What is the gross figure?

**Mr Gregson**—It depends entirely on what form of licence it is that you are purchasing.

**CHAIR**—Do you have the modelling that allows you to arrive at that figure?

**Mr Gregson**—It comes from the Commonwealth's first purchasing program of \$50 million, which saw an average of \$2,400 a megalitre paid for real water based on, for example, Victorian high security water, which has an annual net delivery of close to 100 per cent. What we are basing our figures on is an actual megalitre of water rather than an entitlement which might represent only a portion of an actual megalitre of water. In that context, at \$2,400 a megalitre, \$1.9 billion would buy 791 gigalitres.

Given the caps that are in place in Victoria, less than 25 gigalitres will be available from that state. Therefore, it is our contention that, if the Commonwealth proceeds with its purchasing program, the vast majority of that 791 gigalitres—we expect in excess of 90 per cent—will come from New South Wales. That will have two implications. Firstly, it will have a devastating impact on the regional communities, economies and social fabric of this state, as opposed to any others. Secondly, it will serve to drive up the price of water in the short term. That has two implications. Firstly, irrigators recognise that in 2011 there will be a cap reduction right across the Murray-Darling Basin, that is, less water will be available for extraction, which means that there will be less water allocated to each individual entitlement. Efficient irrigators, those that hold sufficient entitlement based on current allocations to run at optimum efficiency, recognise that in light of a cap reduction they will need to purchase more entitlement to ensure a continued flow of the same volume of water. If the price of entitlement extends to the extent that they

cannot afford to buy it, then those that we will see retiring from irrigated agriculture will in fact be the most efficient operators, and that is of no use to anybody in terms of both fibre and, importantly for this inquiry, food production. The last thing that we want is to see efficient operators removed from irrigated agriculture.

The second impact of the price increase is that it is a temporary spike in the market. As each of you would understand better than I, the last thing that markets want is shocks. We will see a shock in terms of a spike in the market in the first instance, but over the course of the four-year purchasing program there is no tail-off as currently designed. The result will be that prices will collapse at the end of four years, a second shock to the market in a short-term period.

The asset base of an irrigation entity is not only the land and the infrastructure; it is also more increasingly their water entitlement. If the value of that water entitlement drops considerably in a short space of time, you are going to see the equity in their operations eroded dramatically, and unfortunately we will then see financiers of those entities start to take further interest. Those that are leveraged the most are often those that have engaged in infrastructure upgrades and, as a result, the double whammy effect is again felt on the most efficient producers.

I will not take up any more of your time with an introductory statement. I did want to point out that the Commonwealth purchasing program at the moment is skewed dramatically towards New South Wales. It is skewed on the basis of trade barriers that are in place in another state, and unless that situation is resolved in a very short time New South Wales will face devastation in its regional and rural communities and its contribution to food production in a national context.

**CHAIR**—Is the 791 gigs that you say is going to come out of that expenditure an allocation and not entitlement?

**Mr Gregson**—That is correct.

**CHAIR**—That is a very short-term solution in any event.

**Mr Gregson**—The Irrigators Council has not opposed government involvement in the water market as a method of returning water to the environment, as is their policy aim. We have always said that a far more efficient means of achieving that is through infrastructure upgrades that allow water to be returned to the environment whilst maintaining productivity. But we do not oppose a measure for the Commonwealth to enter the market if that is what they want to do to achieve their aims. We agree with the underlying sentiment of your question that that is removing productivity. We do not believe it is in the best interests of food production, but if that is what the Commonwealth wants to do then we will not oppose it.

**CHAIR**—The most efficient spend for the dollar in the longer term is to remove a proportion of the entitlement that is in the market, rather than the annual allocation of that entitlement.

**Mr Gregson**—It depends entirely on the outcome that you are seeking. If what you are seeking is to increase the reliability of existing entitlement then, yes, we most certainly agree with you. If what you are seeking is to divert entitlement to environmental use, that is another issue entirely.

**CHAIR**—Say I have 30 megs or whatever on the Lachlan River, which has bugger all for five or six years, then you are only buying this year's water. What is the point of that?

**Mr Gregson**—We may be at cross-purposes. In terms of a nominal figure of \$2,400 per megalitre, that is a megalitre of permanent entitlement that delivers a cap factor equivalent of 100 per cent. The volume of entitlement you need to purchase, depending on what that entitlement is to deliver the equivalent of 100 per cent, the nominal figure is \$2,400.

**CHAIR**—I would have thought the government would be making a serious blue if they went around just buying allocation, because it is like just fixing it up for tomorrow, rather than for 10 or 20 years.

**Mr Gregson**—We agree with you on that front, but I do not believe that the Commonwealth is buying annual allocation.

**CHAIR**—They indicated they would not. I am sorry to take up the committee's time, but where do you think the 791 gigs is going to come from in New South Wales?

**Mr Gregson**—There has been a cap of four per cent on irrigation districts in New South Wales, as there has been across the Murray-Darling Basin. With the rules that have been implemented by the Australian Competition and Consumer Commission, ACCC, transformation away from a bulk entitlement for a New South Wales corporation will mean that an individual within that district will hold a water access licence which cannot be calculated in terms of the four per cent cap. In other words, the four per cent cap, under the ACCC rules, is now redundant in New South Wales. That means that it will come from right across the state, be it inside corporations, be it from direct diverters on the Murray or the Lower Darling or the Murrumbidgee, or even right across the north of the state from the central rivers.

**CHAIR**—Is it going to be real water?

**Mr Gregson**—It depends on whether it rains.

**CHAIR**—My point is that the Goulburn system could go down to 300 gigs this year from 3,600 and the pipeline will take half of that to Melbourne next year. If it does not rain this autumn and winter, the Murray is going to fail, so it is not going to come out of those systems with real water, otherwise the fish are going to have to walk. Where is it going to come from? The Murrumbidgee has a bit of slack in it.

**Mr Gregson**—The Commonwealth has indicated it will continue with a tender process that is on the basis of willing sellers. We most certainly support that. Compulsory acquisition, as far as we are concerned, is one of the big evils. Where are they going to purchase entitlement from? They are going to purchase it from willing sellers. Obviously there is a supply curve involved in this market. They will purchase it from right across the state.

**CHAIR**—With great respect to everyone, I asked the Murray-Darling Basin Commission and anyone else that was in the room, and the minister, about the ridiculous purchase they made of the supplementary water at Tandou, which I thought was crazy. That water should never have been a financial instrument. You would have a different view from me on that.

**Mr Gregson**—Yes, we do.

**CHAIR**—I think the supplementary water in Victoria should never have been a financial instrument that flowed on to New South Wales. That water, which is only really available when there is excess flow in the system, which was worth a bugger all at the time, has been sold for \$34 million, which will deliver 28 gigs net to the Murray out of 250,000 megs. I asked the department and the minister about the \$4.8 million worth of allocation water that was sold by Tandou the other day, for which they put out a press release. I asked: where did it come from and where was it? No-one knew. Where was it? I asked: where was it stored so that you could allocate it?

**Mr Gregson**—As you would appreciate as well as anybody, the Australian river system is not one that delivers 100 per cent on an annual basis. The Australian river system is one that is either in a situation of drought or a situation of flood. Our rivers are not like pipelines. You cannot put water in one end and have it come out the other. We have to have in place a system for managing shares of an available resource, which is exactly what New South Wales has in place, and until the resource is available of course it cannot be used by anybody.

**CHAIR**—If you make a sale of \$4.8 million worth of water, surely we the taxpayers, who pay for it eventually, or whoever purchases it is entitled to know where it is in the system?

**Mr Gregson**—I am not aware of the facts around the \$4.8 million that you are talking about.

**CHAIR**—You will be pleased to know that neither is the government.

**Mr Gregson**—Was this an annual entitlement or a permanent entitlement?

**CHAIR**—Yes, it was an allocation.

**Mr Gregson**—It is an allocation, which means the water exists.

**CHAIR**—Which means it is supposed to be in the system, but no-one can point to where it is.

**Mr Gregson**—I would imagine under a system of due diligence if the entitlement holder did not actually have that water sitting in their account the Commonwealth would not go through with the purchase.

**CHAIR**—If you are the overseeing body, which the new Murray-Darling Basin Authority is, you would think they would be able to give you the answer.

**Mr Gregson**—Not every system in New South Wales, nor across the basin, is currently on zero per cent allocation. There is some water being allocated.

**CHAIR**—I realise that, but you would think you would know the answer. Senator Nash.

**Senator NASH**—Before I move on to some other things I would like to ask you about the issue of willing sellers. You are quite right in that it should not be compulsory acquisition. Are you finding in your role what is termed 'willing sellers' is at all distressed sellers?

**Mr Gregson**—Of course it is, particularly around those systems that have been on record low allocations for a long period. That includes the New South Wales Murray. It includes in particular rivers such as the Lachlan, general security on the Murrumbidgee, and in fact right across the state. Sellers that had, in particular, borrowed to upgrade infrastructure arrangements who found themselves leveraged have now found themselves with no income over multiple years, yet obviously their costs continued. One of the things that we find most disconcerting is that some of that cost stream continues to be government charges. Of course, that is at a state level and not the responsibility of the Commonwealth.

**Senator NASH**—Which is outrageous, for the record.

**Mr Gregson**—We are finding fixed charges bills on systems with zero allocation, in some instances, upwards of \$100,000. But as I said, the Commonwealth certainly cannot do anything about that. However, we did appreciate the irrigation management grant that was made available during the course of the last 18 months that was available to be applied to fixed charges. Yes, the concept of willing sellers is one that is stretched in the context of stressed sellers, and we would expect, particularly over the course of the next six months as the government's buying program is brought forward, to see a lot more stressed sellers in the market and there is a question of whether they do indeed represent willing sellers.

**Senator NASH**—A better term for it would really be non-compulsory sellers rather than willing sellers.

**Mr Gregson**—To be fair, it remains at their discretion, but obviously that discretion is seriously limited by externalities.

**Senator NASH**—Exactly; like the banks breathing down their neck. I am very interested in your thoughts on the issue of food security. I would like to talk about the first \$50 million buyback. My understanding is that about 24,000 megs of that will return to the environment. It will be taken from agricultural production and will go to the environment. I guess my concern is that in the long term if we are going to remove that much water from agricultural production—which is only in the first buyback; I think in your submission you refer to it as being a small percentage of the \$3.2 billion that the government has earmarked—in your view, if that is just a small parcel of the water that is going to be removed, what work have you done or what views do you have on the impact that will have on productivity, if any? Also, what is your view about the minister's view? When questioned about this, her view is that drought is the worst thing and this is a drop in the ocean compared with the drought that we are going through. I say that in the context of that is a fair enough point for this year, but some of the northern irrigators made the point to me some months ago that by removing that water on a permanent basis from those communities it would indeed be a government induced drought in the long term. Can I have your thoughts on those particular issues?

**Mr Gregson**—Yes. Thank you for the question. There are two concepts in terms of water. Obviously, there is permanent and there is annual allocation. There is a permanent entitlement, which provides you with a share in a resource, and there is an annual allocation attached to that. Food is grown, obviously, on the annual allocation, but if you take the permanent entitlement out of the system you have also taken the annual allocation out of the system. Even though on a permanent entitlement in some years you cannot grow food, in other years when water is

available you can grow food, and in the context of the availability of carryover, that is, storing your water from one year to another, you can continue not only to keep permanent plantings alive but continue to grow annual crops. In the context of this inquiry that is important. There are two types of foodstuff, effectively, that are grown within the Murray-Darling Basin. They are either permanent plantings or annual crops. Permanent plantings require water every year in order simply to keep them alive and not necessarily to produce. Annual cropping, of course, can go for several years, depending on the business arrangements, without availability of water.

If you take out of productive capacity annual entitlement, it is not available either for annual production of crops when water is available or available in the carryover context to support the continued existence of permanent plantings. What that means is that in dry years, such as they are at the moment, permanent plantings have to pay even more for temporary water simply to keep their operations running, and we suspect that will be a key to the retirement of even more permanent plantings and a shift potentially in what it is that Australia produces.

That brings me to the point of the emissions trading scheme, if I can divert just for a moment, because this potentially has an enormous impact on productivity and indeed in terms of what irrigated agriculture produces. As we understand the design of the emissions trading scheme, a plant that has the capacity to grow to in excess of two metres and has the capacity for more than 20 per cent groundcover will, in fact, be considered forest and hence be eligible to earn carbon credits. Some of those plants include things like almonds, walnuts, grapevines, pecans and other sorts of tree nuts and stone fruits. All of those sorts of plantings require permanent water. They have to have high security water and have it delivered to them on an annual basis, which means that you have increased the spike in dry years in what happens to the annual price of water, which doubles the impact then of withdrawing permanent entitlement from the market.

**CHAIR**—You are referring, in terms of the Murray-Darling, to wetland farming and not the bulk of farming, which is dry land.

**Mr Gregson**—We represent irrigated agriculture.

**CHAIR**—It is \$4.2 billion, which is roughly \$350,000 to \$360,000 a gigalitre production from one gigalitre of water, compared with, say, \$7 million per gigalitre of water from Carnarvon. Won't the market sort that out? I notice you are talking about MIS production, of which I am a great enemy.

**Mr Gregson**—Permanent plantings do not reside solely within managed investment schemes.

**CHAIR**—I realise that, but at \$17 a tonne for carbon irrigated dairy farmers are insolvent. If the science on the weather is as predicted and we lose between 3,500 and 11,000 gigs out of the Murray-Darling anyhow, regardless of all the buybacks, we are going to have a zero allocation for general allocation water after the buyback. If the weather stays the way it is in most river systems there will be a zero allocation in most years for ordinary entitlement water, not high-security water, so won't that change what happens, as you said earlier?

**Mr Gregson**—My point was that if government policy encourages permanent plantings, the demand on high-security water increases, but that also dramatically changes the agricultural production in Australia.

**CHAIR**—There is no need to fantasise about that. What we have been doing, if the science is right and we lose between 25 per cent and 45 per cent of runoff over the next four years, is not only going to reconfigure what we do; it is going to reconfigure the way we have settled the joint.

**Mr Gregson**—The science to which you refer also suggests that there will be more severe events, in other words, there will be more peaks and troughs in terms of the climate. That is exactly the system that Australian irrigated agriculture is set up for. When there are peaks, in terms of availability of water, we grow certain crops, particularly, for example, rice and cotton. When there is a trough in the availability of water we do not grow those sorts of annual crops.

**CHAIR**—How do you maintain the infrastructure between the events?

**Mr Gregson**—That is exactly what irrigated agriculture is set up for. It is to store water to be able to be used over a longer period of time than simply waiting for it to rain.

**CHAIR**—I meant like the rice mills. Rice will be an opportunity crop, but it is just a question of how often will the opportunity be there.

**Mr Gregson**—That is a question that only time will be able to tell. What we need in place is infrastructure to ensure—

**CHAIR**—We all have to wake up to the possibility of the science being right. The science for the next four years is for slightly better seasons than we have just had. But with somewhere between 3,500 and 11,000 gigalitres out of 23,000, of which there was 16,000 gigs overland flow water and 1,800 gigs of groundwater available last year, if the science is right there is going to be a considerable fall-off regardless of return to the environment or wherever else for work. There is a disproportionate return to the system of the river for freight and all the other things away from the work. If the science for the future is right, there is absolutely no chance that we can be anywhere near where we have been for the last 50 years.

**Mr Gregson**—It serves to underscore exactly what it is that we are saying. We need to upgrade our infrastructure to achieve more with less.

**Senator NASH**—That is right.

**CHAIR**—We can do that. But the Murray-Darling Basin produces, say, at about \$350,000 per gigalitre, and the Ord at about \$190,000, which is half as efficient again. And Carnarvon, with the Spanish/Israeli, technology, is \$7 million per gigalitre. There is hope in the future with science against the science of the weather.

**Mr Gregson**—Yes.

**Senator NASH**—I would like to follow on with what I was raising before. I am trying to drill down into the amount. Did you say that 791 gigs of water overall is going to come out of the system? Just to be absolutely clear, that is going to go from agricultural production to the environment?

**Mr Gregson**—That is based on a nominal \$2,400 per megalitre. I expect that price will, in fact, increase.

**Senator NASH**—In the view of the Irrigators Council, can you remove that much water from agricultural production to the environment and not have an impact on the productivity level and the availability of that water to be able to provide a level of food? That might be a bit simplistic, but the next question is: even with all the will in the world to improve efficiencies, can you improve efficiency enough to compensate for removing that much water and still maintain the same food production?

**Mr Gregson**—Firstly, the amount of water that is required for the environment has not yet been identified by the Commonwealth. We would have preferred to have seen a number identified as how much is required to then proceed in the best fashion to obtain that. It has always been our position that there are sufficient infrastructure based savings to be made to satisfy whatever that number is as an environmental requirement. However, we understand that it is the policy of the government to move faster towards that number by purchasing entitlement. We do not necessarily dispute that but, yes, of course, it will have a severe impact on Australia's capacity to produce both food and fibre, and as a result is going to have an impact on the price that we must pay for it.

**Senator NASH**—Thank you.

**Senator COLBECK**—How does that figure of 791 compare with what is available? That is the potential total purchase and you are suggesting that about 90 per cent of that may have to come from New South Wales based on the parameters that you have explained to us. It is anywhere from about 750 gigs that you are talking about. How does that compare with what is going to be there to be able to be taken out?

**Mr Gregson**—The question is: what percentage does the 791 represent of—

**Senator COLBECK**—Of what might be available.

**Mr Gregson**—Can I take that on notice?

**Senator COLBECK**—Yes.

**Senator FISHER**—It is clearly not 100 per cent?

**Mr Gregson**—No, it is not 100 per cent.

**Senator COLBECK**—I am interested in the impact. Senator Nash is talking about the impact on production, and that is a reasonable question. But I am interested in what the—

**Senator NASH**—The quantum of it?

**Senator COLBECK**—Yes.

**Senator NASH**—To me that is part of the crux of what we are trying to do here. We are trying to figure out, in terms of the future food production for the country, what impact are various things going to have on our ability to produce food for this nation. I would suggest that removing water from agricultural production and giving it to the environment is a core part of the impact that we are going to see.

**Mr Gregson**—In that context, it would also be useful to recognise how much of Australia's agricultural production is in fact exported and the effect that has on Australia's national economy and also on the food security and availability of our trading partners.

**Senator NASH**—That is exactly right. One of those areas, through export, is our assistance to developing nations. What I wanted to talk about now was what is becoming a global issue, the food versus fuel debate, and the use of food crops for fuel. Should there be a requirement on farmers to produce a certain good or a certain commodity for a certain end point? Simplistically, should farmers have to produce crops for food when it is a free market? If they can get a greater return from producing something that is not food, should there be any requirement on farmers to do that, if we are talking about overall food security. If so, should there not be some compensation? Interestingly, at the moment there is a one-sided debate that farmers should produce their crops for food, but in reality in a free market why should they have to, to be the devil's advocate?

**Mr Gregson**—It is not so much a devil's advocate position as one that we completely agree with. It has always been our position that farmers should not be told what to grow or where to grow it. An ideal example of that would be Russia. Their agricultural sector did not turn out to be particularly secure for the production of food for that country and we certainly would not want to see a replication of that anywhere. In terms of the diversion of foodstuffs for biofuels, it is our position that a market should be able to operate freely, not only in water but also in what that water produces. An irrigator ought to be able to sell his or her production for whatever value they are able to obtain in a free market. This inquiry ought to be cognisant of the fact that government involvement in that market, in terms of mandating minimum levels of biofuels, has a significant impact on the price of fuel. In looking at the corn price in North America, in particular, you will see that mandating a minimum level of biofuels has resulted in a spike in the corn price, which of course is a foodstuff in meat production, and you have seen an overall impact in the price and availability of food. I am sure this inquiry is cognisant of that, and we are not able to provide a great deal of further expertise on it.

**Senator NASH**—On the broader issue of food security, especially in this country over decades people have been expecting low cost, healthy and fresh, green food. How do we reconcile the will and desire of people to have that environment of low cost fresh and healthy food with, as the chair said the other day, farmers actually having a reason to get out of bed in the morning and make a profit? In the broader issue of this food security environment that we are talking about they do not necessarily marry up. People want very low cost, fresh and healthy food, yet farmers need a profit to be sustainable to make sure that we have food security. Do you have a view on that?

**Mr Gregson**—Yes, we most certainly do. As you would appreciate, there is a disconnect in the Australian psyche between its demands as to the way water is used for environmental use and its recognition of what it must pay as a result of that. In so much government policy, for

example, the taxation system, there is a direct recognition between outcomes and inputs. You have to pay in order to achieve a certain aim. That disconnect in Australia between the price of water and the price of food is going to have to reconnect in the short term lest we find ourselves reversing the sorts of policies currently being put in place.

It comes back to what I said in the opening statement. If we alter the water market such that the demand is increased for usage outside of food, the price goes up and the result is that the price of food and fibre goes up. If the Australian public is willing to pay for that then the policy will be successful. If there is not a recognition of that increase in the price then the policy stands the chance of being reversed as the Australian public recognise the implications of pursuing it.

**Senator NASH**—That is a key point.

**Senator FISHER**—Surely it is not purely price. It is price and availability at the moment. There is also a disconnect between price and availability. If availability were a direct feed into price, surely your equation would stand alone. But at the moment is not availability in there as well because of the imperfect relationship between price and availability?

**Mr Gregson**—Of course. What I am referring to is over a medium to longer term period, as opposed to that shorter term impact of a drought. In a lot of circumstances that shorter term impact of a drought is overcome by stockpiles, as you would appreciate. For example, the world rice stockpile at the moment is at the lowest level that it has been in well over two decades.

**Senator FISHER**—I was talking about the availability of water as well.

**Mr Gregson**—Yes. Given that water has a direct input into the availability of food, that is where I made that connection.

**Senator NASH**—You stated that you may well have farmers go out of production if that disconnect remains. Does that not lead to the broader discussion about importing food into the country, and the myriad things attached, and to whether or not as a nation we want to move towards being an importer of food and some of the difficulties there? Again, I think that is a bigger issue that we need to look into. What is the balance there and what quality assurance will we have if we open even further to greater imports, if we cannot provide it ourselves?

**Mr Gregson**—Interestingly, it brings the debate full circle. The reason we are retiring water from agricultural production is for environmental use. If that results in our being a net importer of food we face biosecurity issues, which then have a serious impact on environmental considerations as well. It is a far more complex debate, particularly in terms of food security, than simply the division of water between agriculture and environment. It is a far more complex environment than just that.

**Senator O'BRIEN**—We are talking about food security, and Adelaide is talking about water security, hence Senator Xenophon's focus in recent negotiations and your reactions to that in terms of consequence. Looking down the track, you are talking about the nominal price of water, a nominal amount to be purchased in a nominal period of time, and at the end of that time a collapse in the price from what you expect will be a lot higher than the nominal price you quote. That is what I understand from what you just said.

**Mr Gregson**—It all sounds a bit nominal.

**Senator O'BRIEN**—It is all very theoretical. When you put it that way it is theoretical. You are asking us to accept your theory as to the outcomes so I thought we should, in part, test that. A prudent investor with reasonable market knowledge would delay investment if there was a likely spike and then reduction in price. A prudent irrigator would not be likely to want to upgrade their infrastructure until and unless they thought they could get a return from a lower price. Would that be a reasonable proposition?

**Mr Gregson**—To a certain extent, yes, but to a certain extent, no, particularly if that upgraded infrastructure was to do with permanent plantings. They do not really have a choice. In light of the impending cap reduction they have to maintain a minimum volume of water in order to keep their operations not only at peak efficiency but at the very minimum as a profitable operation.

**Senator O'BRIEN**—There are some people who will not have the money to buy more water and will not have the capital in the short term in any case, whether it is a nominal price or a much higher price, to get additional water for their plantings or to install drip irrigation or something like that to be more efficient with their water. I am making assumptions about what you think the investment required will be and what sort of capital will be required to make some of the irrigators currently using water less efficiently more efficient.

**Mr Gregson**—It depends entirely on what it is that you are looking to upgrade. I would point out that drip irrigation is certainly not the most efficient technique for a whole range of crops. You would struggle to grow a rice crop on drip irrigation.

**Senator O'BRIEN**—Of course. You probably will struggle to grow a rice crop with the prices of water at record highs for the next four years, wouldn't you? You would be selling your water rather than growing rice.

**Mr Gregson**—It probably was remiss of me not to make this distinction very much clearer. The price that we are talking about is of permanent entitlement as opposed to annual allocation.

**Senator O'BRIEN**—Do you think that will have an impact on temporary water prices?

**Mr Gregson**—It depends entirely on whether the entitlements that are held by the Commonwealth are traded on the temporary market over the course of the buying program. We have not had any indication yet as to whether the Commonwealth Environmental Water Holder intends to be part of the temporary market in the short term. We know under the constraints of the Water Act that they are entitled to be part of the temporary market. However, we do not know what their intentions are. The price spikes that I am talking about are in terms of permanent allocation, and on figures that have been provided to us by a major water broker the Commonwealth will need to take up in excess of 75 per cent of the total available market in order to meet the funding commitments that it has made to the water market.

**Senator O'BRIEN**—Is that based on trading history?

**Mr Gregson**—That is correct.

**Senator O'BRIEN**—How much is traded annually?

**Mr Gregson**—It has changed considerably in the last few years. As you will appreciate, the water market is still a very young market and in fact the \$50 million tender that was taken over last year was in fact greater than the previous year's entire permanent market. We recognise that there will be rapid growth in the market as that market develops and as tagged entitlement becomes a more efficient transfer process. I might mention that one of the major barriers to trade at the moment is the time taken between states to approve interstate transfers. We are aware of some permanent entitlement transfers that have been taking in excess of six months.

**Senator NASH**—What is the hold-up on those? I am sorry. You can keep going.

**Senator O'BRIEN**—In terms of the price of water, we have seen those who want to remain in agriculture and with the option trading temporary water rather than, for example, irrigating pasture and the like because of the economics of it. Your suggestion is that it will be the distressed seller who gets into the market. They are distressed because, I presume, they do not have the capacity to become more efficient or they do not see a future in the enterprise that they are in. Is that a bad thing? Is it not providing them with a way out at the top of the market, effectively?

**Mr Gregson**—Yes, I think it is potentially a bad thing. It is potentially punishing those that are the most efficient operators when water is available. To be honest, water is going to be available again in the future. This is a drought.

**Senator O'BRIEN**—One would presume that you are taking out of the market those people who are the least efficient or who do not want to be there, and ultimately in the longer term you are going to take pressure off those who want to remain in the market because there will be fewer competitors for the water.

**Mr Gregson**—With due respect, absolutely not. It is certainly not taking out those that are the least efficient. In some instances you will be taking out those that are the most efficient. The reason that people are distressed is their capacity to service debt and their capacity to service ongoing costs, despite the fact that they have no revenue flow. We mentioned this in terms of fixed costs earlier. Those that have over the course of the last few years invested heavily to upgrade their infrastructure to put them towards the pointy end of efficiency are the ones that now are distressed in having to service the debt on that efficiency. They are the ones that are distressed and, unfortunately, they are the ones that are likely to be forced into the market to sell out their water.

**Senator O'BRIEN**—They will be distressed anyway if the price remains high. If we see low water inflows, the price of additional water or the price of debt, subject to interest rates, is still going to be there for those people. I am not sure how this impacts on those people in the market.

**Mr Gregson**—The reason that they invested is to be able to maintain their productivity with less water being available, that is, to be able to fund that higher debt level through a higher productivity level and a better margin.

**Senator O'BRIEN**—They have invested and they have got higher productivity, so why is this going to force them out of the market?

**Mr Gregson**—They will have higher productivity when water is available to put through that infrastructure.

**Senator O'BRIEN**—Are you saying this is because they have invested without having the water to put through the systems?

**Mr Gregson**—No. Again, we are talking about annual allocation as opposed to permanent entitlement.

**Senator O'BRIEN**—Yes.

**Mr Gregson**—It does not matter how much permanent entitlement you own; if your allocation is zero, your infrastructure is not doing anything.

**CHAIR**—Isn't the greater force mother nature?

**Senator FISHER**—Or the GFC.

**Senator O'BRIEN**—Mother nature is going to be the bigger impact. Interest rates are lower, so I suppose depending on whether you have any water and depending on what your bank has done with your loan interest rate, you may or may not be in a better position. There are a whole lot of factors involved.

**Mr Gregson**—There are, and unfortunately, as you allude to, the banks have not been as generous in terms of rural lending as they have in terms of lending in the housing sector in urban centres.

**Senator NASH**—Can we highlight that in *Hansard*?

**Senator O'BRIEN**—I think business is saying that generally if only it was as simple as the TV show, where you ring your bank, put a bit of pressure on them and they will lower your credit card or your mortgage rate. That does not seem to be working for business. In terms of irrigated agriculture as a contribution to food production, is it fair to say that with the volumes of food we produce much more is produced in the dry land farming area than in irrigated agriculture?

**Mr Gregson**—In general terms they are producing different things as well. Obviously you will not see irrigated beef cattle.

**Senator O'BRIEN**—No, you will not, and you will see irrigated dairy, but it is not just the Murray-Darling Basin in which we are growing dairy, and we are talking about water buybacks in the Murray-Darling Basin and not a whole lot of other catchments around the country. We are talking about a proportion of the nation's food production. It is not as if we are talking about a system that impacts on every catchment.

**Mr Gregson**—That is correct, but at the same time we are talking about the majority of Australia's irrigated agricultural production, as I am sure you would appreciate. It is a significant contributor to overall agricultural production.

**Senator O'BRIEN**—It is ironic that the volume of water that flows through that system compared with the rest of the water available throughout Australia is a very small proportion.

**Mr Gregson**—At the same time, water is not the only requirement for irrigated agriculture production. As you would be aware, a number of crops have been trialled in irrigated areas elsewhere in Australia and for various reasons have not been as successful as they have been in the Murray-Darling Basin. One of the key reasons is, of course, proximity to markets. The further you have to transport your production—

**CHAIR**—It depends on which market you are talking about.

**Mr Gregson**—Of course, but the majority of Australia's domestic market is in its east coast areas.

**CHAIR**—The north is closer to where two-thirds of the world's population is going to live.

**Senator O'BRIEN**—If you want to distil down to the contribution to Australia's food production, the point I make is that we should not get it out of perspective, but at the moment there is a lot of irrigated agriculture. Historically, there has been a bit of a government initiated drive to make water available for irrigation in those parts of regional Australia for political or other reasons. That is why we are in that situation, isn't it?

**Mr Gregson**—We certainly do not dispute that there is irrigation outside the Murray-Darling Basin. In fact, we represent irrigators outside the Murray-Darling Basin as well. The basin still is the major centre for irrigated agricultural activity. It is the place where many billions of dollars have been invested in infrastructure and, as a result, we do not see that it would be sensible to simply abandon that.

**Senator O'BRIEN**—As a bit of an aside, I am not sure how grapes would comply with your two metre high, 20 per cent of ground coverage given annual pruning, which normally takes them down a lot lower than two metres.

**Mr Gregson**—I suspect there may be some trellising in excess of two metres if carbon credits are available.

**Senator O'BRIEN**—There is a lot of trellising, but it is not permanent because of the pruning of grapes.

**Mr Gregson**—I understand.

**Senator O'BRIEN**—The other side of it is that partly grapes, certainly at high value levels, are tending to be grown in some areas without irrigation because of the availability of groundwater and the depths to which the grapes penetrate with root systems. It is the Murray-Darling Basin where irrigation is important because of the nature of the soils and the climatic

conditions and which saw in the last few seasons a negotiation between growers and winemakers about the price of product given the need to buy water. Is that an indication that it is the value of the crop that is going to determine what is grown in places such as the Murray-Darling Basin, with the high price of water?

**Mr Gregson**—Yes, absolutely, because the value of what is grown effectively dictates the revenue at the end of the production cycle. If the costs go up, of course the revenue has to go up, or the crop is not grown any longer. I suspect that is what is happening in the wine grape industry at the moment. There is an oversupply of it and we would suspect, therefore, that if water is a result of some of the reduction in oversupply it will go to areas of higher value. As you would appreciate, if a market is left available to work, agriculture will sort itself out. It is when there is intervention in that market that you find yourself facing some serious consequences.

**Senator O'Brien**—Intervention from government as to the total availability of water or the market in terms of the price of water?

**Mr Gregson**—The market overall. If, for example, the emissions trading scheme means a higher demand on high-security water, it obviously has an impact on other users of high-security water.

**CHAIR**—It is going to reconfigure the whole Murray-Darling in the longer term. I am trying to focus people on the science for the future rather than the history of the past, and your job is to keep everyone happy. You are an irrigator and, if you do not get paid, you can't keep the home mortgage up. Against the science of non-paddy rice farming, have you done a cost-benefit analysis on dry land rice farming?

**Mr Gregson**—The Rice Growers Association of Australia is a member of the Irrigators Council and they are probably the best people to talk to in terms of research.

**CHAIR**—I have a drop dead question. You are the Irrigators Council, representing the irrigators, on behalf of irrigators. Do you think the Queensland government, given the science that is available now, should knowingly issue a 269,000 megalitre water licence for Cubbie for overland water harvesting knowing that they are going to have to buy it back and pay \$175 million to do so?

**Mr Gregson**—With respect, we represent irrigators in New South Wales.

**CHAIR**—That is in the interests of irrigators in New South Wales.

**Mr Gregson**—We stand right behind the interstate water sharing agreement and believe that should remain in place.

**CHAIR**—No-one is prepared to answer the question I have just asked. It is a dodgy deal.

**Senator FISHER**—You have concerns about a price spike in the current context in terms of the so-called stimulus package. You have also said you are not against the government entering into the water market. In your view, how can the government enter into the water market without causing a price spike of some sort?

**Mr Gregson**—There will be a price spike no matter how you look at it. It is in terms of the size of that spike in the first instance that we are concerned about. If water cannot be bought out of Victoria, then it means that New South Wales is effectively targeted. That means that the supply curve is obviously lower and the price ends up going up because of the fact that there is a limited supply available and yet the same amount of money is going to be spent. By ensuring that the barriers to trade in Victoria are removed, ensuring that there is a level playing field, you will limit the impact of the price spike in the first instance. The downside of that price spike in the medium term concerns us equally as much. The way to avoid that is to build a tail-off effect into the government's purchasing program rather than simply withdrawing from the market from one year to the next.

**Senator FISHER**—That is one scenario. What about compacting even further the period for which the government is in the water market, say, 90 days which has been floated by irrigators elsewhere and in South Australia in particular?

**Mr Gregson**—It has. I would be interested to hear the answer to that question if you were to ask it to them again now. It is fundamental economics. If you are going to spend the same amount of money, the shorter the period of time the higher the price you are going to have to pay. That not only has the impact of a price spike in the market and the associated problems with that; it also has the impact of a greater cap reduction necessity. We understand that the amount of water that is purchased through the purchasing program will lower the amount of water that has to be removed through a cap reduction. If you pay a higher price and effectively buy less water, the cap reduction is even greater. That, of course, is a problem for all irrigators and particularly for those that are operating at the efficient end of the spectrum.

**Senator FISHER**—My second question is about the cap reduction, but I have another question before that. Recast your answer such that the government were in the marketplace for a much more compact period, for example, 90 days, without the assumption that it will be to spend the amount they now have to spend over four years? Is there an acceptable scenario to your organisation that contemplates government in the market for a very compact period with an amount of money?

**Mr Gregson**—I am sorry to do this to you but, as you would appreciate, I speak on behalf of 26 organisations and that is not an issue that we have considered as a council.

**Senator FISHER**—Could you?

**Mr Gregson**—Yes.

**Senator FISHER**—If you could take that on notice it would be helpful.

**Mr Gregson**—Yes, we will. In fact, our council meets three times a year and the next meeting is next week.

**Senator FISHER**—Thank you. My final question is around the four per cent cap in Victoria. I am a bit confused with the swapping of words 'allocation' and 'entitlement'. What is the federal government buying in terms of allocation versus entitlement?

**Mr Gregson**—They are buying entitlement, which is the permanent licence.

**Senator FISHER**—In your language that is permanent?

**Mr Gregson**—Yes.

**Senator FISHER**—Where does the four per cent cap fit into that?

**Mr Gregson**—The four per cent cap is not only in place in Victoria, it is in place in New South Wales and South Australia as well. It is accounted for differently.

**Senator FISHER**—That is right. It is not the same. I am asking about the four per cent cap in Victoria because it has been put up as a barrier to spending the money by Minister Wong. I want to drill down into that a bit more, because I am not convinced that that is so. I am trying to ask questions to work out whether that is right.

**Mr Gregson**—I understand. It is a four per cent cap on the transfer of permanent entitlement. In other words, it is a cap on what the government is trying to buy.

**Senator FISHER**—A transfer from one state to another?

**Mr Gregson**—No, a transfer out of a district, even if it is from one district in Victoria to another.

**Senator FISHER**—Can water be purchased and parked?

**Mr Gregson**—The transfer of the entitlement from one entity to another cannot proceed. For the transfer of the entitlement from one entity to another requires the sign-off of government.

**Senator FISHER**—Does it then feed into the cap?

**Mr Gregson**—If it is beyond the four per cent threshold, the government will not approve the transfer.

**Senator FISHER**—The government cannot buy and park for a period so as to not violate the cap but buy water nonetheless?

**Mr Gregson**—In order to, in your words, park it they would need to own it and they are precluded by the four per cent cap from owning it in the first instance.

**Senator FISHER**—Thank you.

**Senator COLBECK**—The government presence in the Victorian market could actually limit the capacity of the market to effectively operate, because if the government buys up to the four per cent level it would restrict any other player from operating in the market. It could effectively destroy the Victorian water market.

**Mr Gregson**—Absolutely.

**Senator FISHER**—Why isn't Victoria concerned?

**Mr Gregson**—There are also irrigators within Victoria who would like to sell their water, be it to government or to other irrigators, who are unable to.

**Senator COLBECK**—With the inevitable reduction in the amount of water available, have you done any work on the higher unit cost of irrigation asset management—and that could be on farm or within system and within, say, the irrigation districts and their own assets—and what impact that might have on the viability of those systems then feeding down into the impact on the price of food and, if the market is controlling the price of food, the returns to growers versus the cost of production?

**Mr Gregson**—No, we have not. I may be able to refer you to some work from particularly some of the major operators in the southern connected system. Can I take that question on notice and get back to you if we can uncover any research?

**CHAIR**—Thank you very much. We are very grateful for your submission. Could you also take on notice my final question. Have you blokes done a study on what will happen if the science is right?

**Mr Gregson**—No, we have not. In terms of both of those questions, can I point out that us 'blokes', the New South Wales Irrigators Council, are the two of us sitting in front of you at the moment.

**CHAIR**—I appreciate that, but when you go back to the wider body someone ought to come to terms with what happens if the science is right.

**Mr Gregson**—Yes.

**CHAIR**—Thank you very much.

[11.49 am]

**McGLASSON, Dr William Barry, Private capacity**

**CHAIR**—You have read the statement outlining your rights. Would you like to make an opening statement and we will then go to questions?

**Dr McGlasson**—Thank you for the opportunity to appear this morning at this inquiry. I understand that all you really want from me at the moment is just a brief introduction as to what I am really on about. I guess the real issue that I am concerned about is that there is so much talk and discussion about harnessing our resources to deal with the many challenges that we face in relation to food production. My focus is more particularly on horticultural crops, because that is my particular background. We have heard people say that they want to do R&D, this and that and so on, but there has been very little reference around anything that is happening lately to who is actually going to do the work that is required and where in the longer term are the appropriately trained people going to come from. That is a very critical issue that has concerned me for a long time and I think the situation has continued to get worse. Even as of yesterday Minister Burke, in opening Outlook in Canberra, was again talking about all the issues but made absolutely no mention of the human resource issue and where the trained people will come from to do the work required. I heard only last week that the minister has announced the formation of the rural research and development R&D council. It has some pretty high powered people on it. Again, it talks a little bit about capacity building but does not really refer to the human resource issue. There are some very good people on that committee. Following on a little bit from what Dr Estrada-Flores had to say this morning, too, there is no mention or reference to a peak body representing the downstream food distribution or processing side of it in that committee. It is all about the production issues and not dealing with the rest of it down the track as well. That is really the basis of my submission to you, trying to do something about the fragmentation of resources that we have in this country in relation to both R&D and the teaching and training side. We have got only 21 and a half million people. I think we can do a much better job with the resources that we have, but we also need to make it a much more attractive area to draw good people into in the future.

I think you are aware from the numbers that the student numbers coming into universities and generally into tertiary training have fallen away very badly. I quoted examples there from my own university as to what has happened in horticulture in the last 12 years, from 1994 to the present. That is not atypical of what has happened elsewhere in Australia as well. It is of very deep concern to me and that is why I sought to have the opportunity to meet with you this morning.

**CHAIR**—We heard yesterday—and we certainly referred them to you—from AgForce about the concerns in recent times. We have been resting on our laurels, as it were, on research and development in agriculture, especially against the challenges for the future with the weather, population growth, et cetera. Would it be fair to say that you think we may have to reconfigure the way government goes about this? You mentioned CSIRO is in no man's land now with agricultural research. Could you give us your thoughts on what would be the new bureaucratic enhancement process?

**Dr McGlasson**—Like everybody else, I am always scared stiff of creating new bureaucracies, but the brainwave I have had is really how to get a new focus and give food and in general agricultural production the status it really should have in this country now. That is why I am coming forward with I think the fairly radical suggestion that we create a new Australian department of agriculture—whatever you want to choose to call it—in the future that will do two things. Firstly, it would take over the activities that DAFF has at present, which is all the regulatory and policy side. They have got some very good people. They have been employing people with PhDs in training and research, including some from my own institution. They have very good people on that side. But on the other side I think we need a second division, which would be an R&D division, which would take over what is left of CSIRO in terms of agriculture and put a new focus on it and get away from the contractual approach that CSIRO has had for the last little while. People might say I am being disloyal to my old organisation. I do not believe I am, because the organisation I worked for does not exist anymore. It is a totally different cat today from what it was in those days.

By getting that better national focus we could start to achieve a better use of the resources that we have. But it has to be genuinely national. I am one of those people who think that the lines drawn on our map that designate states are an impediment in many respects. I really think we should have a much more national approach to what we are doing. We have only got 21 and a half million people. I think in many respects we have too much fragmentation and too many individual organisations trying to do the job. I keep holding up the example of California, where there are 38 million people. One University of California system is a land growing college. It has the whole continuum, from farm extension advisers right through to Nobel Prize winning academics, all within the one organisation. It is not free of bureaucracy, in-fighting and so on, but it has stood the test of time and it is still doing so. That is serving a population of 38 million people whereas we have all this fragmentation with just 21 and a half million people.

**CHAIR**—Have we got something to learn from the USDA?

**Dr McGlasson**—I think so, yes. The USDA has been pushed and pulled by congressmen over the years. It has had plenty of equivalents to senators wanting to interfere with the USDA over the years as well, but it has really stood the test of time. It has been one of the main vehicles by which the US government has disseminated money for R&D, et cetera, out through the individual states and the state research organisations and university organisations. It also has its own good research facilities, but in most cases it has not just scattered those around the country. It has located those research facilities either on or adjacent to university campuses and in many cases has embedded some of its own research staff in individual departments with the universities as well. I am very familiar with the USDA system at least in my own field. I am a graduate of the University of California a long way back and I still have lots to do with our American colleagues. I know it is still working very well. I can actually quote you examples of people in my own field who across the fence with USDA and University of California who are doing very good joint work for their industries in their own state.

**CHAIR**—In due course would you, with the assistance of people such as AgForce and others, be able to present a directions paper on what you think should happen in terms of a model?

**Dr McGlasson**—I would certainly be willing to help and to be involved with others to do something like that, yes.

**Senator FARRELL**—You are talking about the national perspective on this and I do not think anybody necessarily disagrees with that. I suppose the difficulty, particularly for the outlying states, is how they get some recognition in a national scheme.

**Dr McGlasson**—Yes.

**Senator FARRELL**—What tends to happen, rightly or wrongly, in a national scheme is that the big states, particularly New South Wales, tend to dominate and the concerns of the smaller states get left behind. In your proposal how would you say you might address that issue?

**Dr McGlasson**—You obviously have to look at capabilities, resources and needs in the individual areas. But I think we have examples already of how some of the smaller states are actually showing the way. I hold up South Australia as an example. You have the Waite Precinct, for example. Are you familiar with the Waite Precinct?

**Senator FARRELL**—I walk through it every morning when I am in Adelaide.

**Dr McGlasson**—I really think that is a marvellous set-up and a great example of how the other states can operate as well.

**Senator NASH**—For the non-South Australians would you mind just giving us a quick précis of what that is?

**Dr McGlasson**—The Waite Precinct is the University of Adelaide Waite Agricultural Research Institute. It is the original agricultural campus, which was bequeathed to the University of Adelaide many years ago. I did my undergraduate agricultural science degree at Adelaide University. It now has at the Waite Precinct laboratories of the CSIRO. It has the Australian Wine Research Institute's brand-new laboratory. It is a beautiful laboratory. It has SARDI, the South Australian Research and Development Institute, which has marvellous facilities. There are a number of other research groups, including commercial related groups, that have an interest in the kind of work that goes on there that are co-located there as well. What is more, you do not pay any parking fees there, too, which is great. Everything is just literally across the road from each other. You could walk from one lab to the other very easily, so the opportunity is there for people to interact much more easily all in the one place.

South Australia is focusing particularly on wine grapes and wine research. Under the national scheme, the council of ministers of agricultural DPIs and the subcommittees going down that path we are seeing some sensible rationalisation, at least on paper, of the responsibilities around the country. South Australia has wine grapes, because that is the logical thing; New South Wales is responsible for citrus; Victoria for stone fruit and pome fruit; and, of course, Queensland, tropical. I am not sure what Western Australia has taken on board particularly at this stage. That is an example of a good process to ensure that we do draw on the human resources and the economic capabilities in the particular regions according to their needs in that regard. Tasmania established some years ago a centre as well.

**Senator FARRELL**—Sorry to interrupt you, but is that not running counter to your argument?

**Dr McGlasson**—No, not really.

**Senator FARRELL**—Could the fact that the states are able to do these things—and that there is recognition of the diversity, I suppose, that you get as a result of individual states looking at their own particular specialities—not be lost in a national scheme?

**Dr McGlasson**—No, I do not think so, because you are still operating within the national fabric or framework by doing that. You are recognising the capabilities, but they are not working in isolation. If you look at the logos on the entrance board at the Australian Wine Research Institute, the centre for national research and every state and many organisations are represented except for New South Wales. There is this sort of interstate national collaboration represented at that particular centre. There can be similar examples in other states where that has happened as well. One of the reasons for having that focus in those places is the very one that I raised here, which is making the environment much more attractive to bring students back into the system. There is a great dearth of students coming into the whole area of primary production—agriculture, food and horticulture—at the present time. It has been getting worse for a number of years. So, how do we get a better focus and get a critical mass of people so that we can really start to raise the status of this whole field in the eyes of potential students and so on? We have gone backwards over a long time in terms of what we are doing to attract good students into the field now.

**Senator COLBECK**—It is an interesting topic that you talk about. Are you aware of the work of Dr David Russell at the University of Tasmania and his proposals to engage students at high school level with the agricultural sector?

**Dr McGlasson**—Yes.

**Senator COLBECK**—Do you have any thoughts on that?

**Dr McGlasson**—I think that is a great scheme and I would like to see that further developed and extended elsewhere. I understand that they have been prepared to actually sell their expertise to some extent elsewhere. I think it is a bit of a pity that you have to put a price ticket on it. I think that is something that ought to be made available and extended much more widely around Australia. I have to say that I think my state of New South Wales is the worst state in the union in terms of what it is doing in relation to these areas at the present time. Tasmania has set a very good example of one way to go.

**Senator COLBECK**—I am aware that his proposal is working I think in Western Australia and possibly South Australia at this point in time.

**Dr McGlasson**—Yes. They have contracted that out as well.

**Senator COLBECK**—As to the roles of universities in protecting their intellectual property, in the context of this sort of process of encouraging people into particular streams should there be more cooperation?

**Dr McGlasson**—I think so. I think it is a pity if we had to bring IP into something like that. It is something that should belong in the public good domain, in my view.

**Senator COLBECK**—Or the resource injected into the system so that they do not have to worry about that part of the process.

**Dr McGlasson**—Yes, that is right.

**Senator COLBECK**—It has always amazed me that sport starts looking for participants at primary school level and industry generally waits to see what drops out at the other end. I have been relatively close to the process that Dr Russell is going through on a number of occasions and the partners they have with some of the ag industries in Tasmania and the private research companies in particular, where they bring people in who participate and they show them what the possibilities of the industry are at as low as year 7 level, engage them through their high school careers and then provide some level of attraction to come out at the other end. Are there any capacity constraints as far as career objectives? Do you have a sense of what levels of shortage there are within the professions as far as demand at the other end is concerned? You have a similar situation with engineering, which has a shortfall.

**Dr McGlasson**—Yes, that is right.

**Senator COLBECK**—To what extent is the employment market actually playing a part in attracting people to certain professions?

**Dr McGlasson**—I am holding up a piece that appeared on 18 February in the *Sydney Morning Herald* headed ‘The Farmer Wants a Life’. A number of people are quoted, including Pratley from Wagga, the secretary to the association of deans of agriculture around Australia. The institute is quoting the figures. The demand for agriculture graduates last year was 2000, but the actual number of graduates being produced each year is about 800 and falling each year. There is a discrepancy there. Tassie is doing a good job in terms of what it has done down there, but it is really only working on a small population. It does not seem to be exporting too many of its graduates to the mainland at this point. But even in Tasmania there is the problem of people who want to go down more the research track; there are still not very many jobs that are supported at the public service level for them to go into as well. We really have to look at all of those issues if we are going to get more good kids not only in Tasmania but also in the other states coming into this as well.

**Senator COLBECK**—Do you think that the decision that CSIRO made recently to reduce its expenditure in R&D effectively is also playing a part in sending the messages that are impacting on this?

**Dr McGlasson**—Yes, I think so. As you know yourself, with your own kids you get to the early years of high school and your kids are faced with the decision as to what choices they are going to make in terms of their subjects as they move through the school system. Of course, parents play a major part in that role. We have to convince both kids and their parents in the cities primarily that there really is a future in going down the path of science and related science areas, including the agricultural ones as well. It is not there. The picture is very gloomy for them at present. Although we can tell them that what graduates we have got are getting very good starting salaries and so on, it is still very hard to convince them that this is the way to go, so we are seeing very poor student numbers coming forward. I think of the total number of students

who are coming in to the new program in Hawkesbury this year there are only 21 that we can count as agriculture, horticulture and food students in the first-year intake. That is all.

**Senator COLBECK**—What about the role of the industry based rural R&D corporations in this process? Where do you see them fitting into the picture?

**Dr McGlasson**—The task of R&D corporations, at least as far as I am talking about the horticultural ones in particular—is merely to gather/levy funds, voluntary contributions and so on. Their charter under the federal government is to seek matching funds or have matching government funds and to disseminate that for particular research projects that are determined by their member industries for the most part. Although in the case of horticulture that adds up to something like \$80 million a year now, that is only to support the actual consumables of the research itself. It does not employ, does not pay salaries, and does not provide any support for salaries for research staff. In many respects the R&D corporations are really coat-tailing on the public services in terms of relying on universities to employ the research staff, because the corporations are not paying the actual salary costs of staff. They are all short-term contracts. Each project might be one to three years with a maximum of three years duration. There is no great continuity in that. If you really want long-term research staff you have to have some kind of permanency for them in research agencies.

**Senator COLBECK**—You mentioned the recently formed rural research and development council. How do you see that fitting into the overall scheme of things and where does that fit in the context of the council of R&D corporations, which sits above the R&D corporations themselves and is comprised of their executive officers and chairs? Where do you see these two bodies sitting alongside each other in a comparative process?

**Dr McGlasson**—I am not sure how to answer that question. I am a bit concerned that we are getting lots of different organisations trying to call the shots, so to speak, without addressing the bottom end of the whole thing as to where the human resources are going to come from to do the work. If those organisations start to address that more thoroughly then, yes, that would be fine.

**Senator COLBECK**—Coming at this from a slightly different angle, a lot of the R&D for agriculture comes out of some of the regional universities. Do you have any views of the impact of the research quality framework and its potential impact on funding that might flow to some of those regional universities doing that practical research that might not appear in the internationally recognised and peer reviewed publications?

**Dr McGlasson**—I think that can be an impediment in this particular situation. I have been caught up a bit in this quality framework stuff. I would like to see it recede a bit into the background at this stage. It can create a bit of a kind of elitism type of situation and it gets you into arguments about the quality of research, whether it is applied or so-called strategic or basic research or whatever. The implication is that stuff that does not get the high ratings is not good research. In my view that is a completely fallacious way of looking at it. All research that is properly conducted is good. It is a question of what the outcomes are and what sorts of problems you are trying to solve. There are short-term immediate practical problems that you need solutions for. You need qualified, trained researchers who can do that job properly and produce sound data for you just as you need the more basic stuff further up the line. I am a bit cynical

about putting too much emphasis on this quality framework. I understand it has receded a bit into the background at the moment and I think that is a good thing.

**Senator NASH**—Thank you for your submission, and congratulations on the work that you are doing, too. I am a great believer that, if we have not got research and development, as I said yesterday, how do we have a future in anything? I was absolutely horrified to read in your submission about the fall in those numbers of students. It would seem in this day and age we need more young people in agriculture who are well equipped with knowledge to make sure we have a sustainable industry, not fewer. I find that quite horrifying. In terms of this inquiry, food security and sustainable food production, if we have an environment of falling numbers of students who are actually learning about this subject coupled with the fact that we have an ageing population of farmers out on the ground, unless we radically change the beginning end of what we are doing in R&D, educating young people and giving them a reason to be involved in the industry, what do you see as the future of agriculture?

**Dr McGlasson**—Just on the face of it, the future looks pretty bleak. That is why I have taken the initiative to discuss this issue with you today. That is why I am putting up this whole holistic approach. How do we go back to the core of the whole thing? How do we raise the status of the whole field of agriculture in the eyes even of city kids? Australia is a highly urbanised population. Most of our kids are generations removed from the land. They have no idea what the land is about. If we leave aside questions of whether we are having family businesses or corporate business or whatever, we are still going to need food. We are still going to farm much the same area as we do notwithstanding what was discussed with water in the earlier session. We are still going to be having those issues. I am an old guy. I have been around for a long time and I have come right through the whole experience. I had really inspirational teachers. I would not be where I am today if it had not been for my high school teachers from a little country town called Glossop in South Australia. As a kid at the end of World War II what did you know about the world really? What was university? I had no idea. It was those teachers who encouraged us kids to apply for everything that was going. I applied for a Roseworthy Agricultural College scholarship and got that. I also applied for a university scholarship, not knowing a thing about what the university offered. I then came in line for one of those and eventually I went off to Adelaide University. That was a federal government scholarship—

**Senator FARRELL**—A great institution.

**Dr McGlasson**—Yes. If it had not been for that I would not have achieved anything that I have done throughout my whole career. Let us go back to those lessons. In schools now we have some good teachers around but not perhaps the same inspirational teachers that I experienced in my time. Let us go back to basics and see how we can really lift the game within the schools as well. As I said in my submission, here in New South Wales agriculture, horticulture and food are in the vocational stream in the school, not the science stream, and that creates a status issue straightaway.

**Senator NASH**—That was my next point. I congratulate you on raising this whole point of moving agriculture into the science stream. It is very timely. I happened to be at an agricultural show on Sunday with my son, who was in the sheep judging competition. I was discussing with his teacher the plight of agricultural teaching in the region where he is. The teacher was saying

there is literally no incentive for the teachers who are teaching agriculture to be there and do a good job. If there is a good teacher it is more by accident than by design.

**Dr McGlasson**—Yes, that is right.

**Senator NASH**—There is no incentive for the children to want to be part of that. It is timely that I just had that conversation and you raised this in your submission. It does really need to start back there. If we are going to move to more a mix of family and corporate farming, surely it is even more important that we have an educated pool of agriculturalists, if you like, who are going to be able to go out and run those corporate farms?

**Dr McGlasson**—That is very true. In earlier times state departments were one of the main training grounds. They were the first people employed, and they actually had cadetships and so on, and people joined the departments via cadetships and had a guaranteed job when they finished. You gain a very wide and in-depth experience working in a public service organisation such as that. Many of those people went out and became private consultants and so on. I am very concerned today about where the future consultants will get that kind of in-depth experience that is going to make them very good consultants. That is an issue in itself. As I mentioned in my opening remarks, your focus is particularly on food production at this stage. I noticed that some of your earlier questions to Dr Estrada-Flores were about waste. I am a post-harvest person. That is my specialisation. Post-harvest is not just what you do after you pulled a peach off a tree or you cut your broccoli off at the ground, it is the total system from production right through to the ultimate consumer. That is where so much of your value addition happens. There could be something like a five to sevenfold increase in value or price of the product at the time you buy it at the supermarket compared with what it was worth while it was still sitting in the ground or on the tree. We have to look at this as a whole system in terms of training of people and so on. A lot of the employment for people training in agricultural/plant sciences is post farm gate. It is not just on the farm. You need people to have an understanding of the total system, all the way from production right through to retail and back in the other direction. It might interest you to know that I persuaded Woolworths to employ their first horticultural graduate nearly 15 years ago now. At that time they did not feel they needed university graduates, but they finally agreed, on my persuasion, and appointed their first quality control officer. Now their policy is to employ graduates whenever they can get them to come in as QCs. This is the entry point into the fresh food business for them. In my own way I have had a bit of influence on lifting the status and professionalism of Woolworths in terms of how they handle their fresh food as well.

**Senator NASH**—I think the idea of creating a new department is an excellent one. When I read this I think I just wrote ‘commonsense’ with a huge exclamation mark next to it. Is that a discussion you have had with anybody within government and, if so, have you had any sort of response to it?

**Dr McGlasson**—No, I have not. This is really my first shot at this. What really started the whole process was that I bought into the fight that is going on in New South Wales about the proposed closure of research stations. Some of my graduates are in the firing line and they are very good people. They are very well thought of by their own department and colleagues, and their careers are at risk. I just could not sit aside and do nothing about it. I have been on about this question of fragmentation of resources in Australia for a long time. The comparison is the land grants system in the United States. This all sort of hit me. Just over a week ago I suddenly

felt, 'What can we do to get a better focus on this?' That is when just out of the blue the idea of agriculture Australia or an Australian department of agriculture came up. I emailed the chair and put the idea to him and that is when he suggested making a submission to you and appear before the inquiry. The idea of approaching it this way has happened only within the last 10 days.

**Senator NASH**—It is certainly something we will continue to try to progress.

**Senator O'BRIEN**—Where do the research and development corporations fit into your picture?

**Dr McGlasson**—I think they are a marvellous institution and really other countries envy the system we have in place. I think they have served a very good purpose and continue to serve a very good purpose. I would like to see them further strengthened. The process is democratic. The industries themselves have to hold their own plebiscites under our existing laws and an appropriate majority of people who are eligible to vote have to approve those. Once they are set in place, they carry on collecting levies, et cetera, or whatever they choose. The only thing wrong with them is that they are only up to the farm gate. There is a little bit too much focus on the pre-farm production side of things and not enough sometimes further downstream. I think that is the main deficiency we have at least with the horticultural ones in this country at present. The only other problem is that in many cases they still do not have enough money to work with and they really need to raise their levies higher than they are at the moment. A good example of one industry that has really got its act together is the avocado industry. They have recently raised their levies. They are a very highly organised industry and they are an example for the others to follow at the present time.

**Senator O'BRIEN**—What contribution do they make to the research effort and the encouragement of graduates to the economic prosperity of the research sector? That is the question I was leading to.

**Dr McGlasson**—They have no money for educational purposes or anything like that. I have tried to involve Horticulture Australia in efforts to do more about postgraduate training and so on and bringing people in. Yes, if you can raise some money and get it matched you can create scholarships, but other than that they do not have the money to do anything else. You cannot help them employ teaching staff, research staff or anything like that. They are very dependent on the research providers' existing staff to do the work for them. They do not have the money to pay for the research providers themselves.

**Senator O'BRIEN**—Is it fair to say that a lot of the research that we rely upon is performed overseas rather than here in terms of downstream processing, food production and so on?

**Dr McGlasson**—Of course. I think it would follow that with 21 million people we cannot produce all the know-how we want ourselves. We are all world scientists.

**Senator O'BRIEN**—But there is much more capacity for effort worldwide than we are ever going to have?

**Dr McGlasson**—You have got local needs. The question that you raise now was probably raised 40 years ago. We saw rapid growth in the state departments and employment of PhDs and

so on after World War II as everyone started to gain capacity. They said, ‘Why do we need to be doing this work here in Australia when we could just go and read the literature and get it out of California or somewhere else?’ In reality it does not work quite like that, because we have sufficient local differences or climatic adaptive issues and so on that you just cannot do that. You still have to have people who really understand what they are doing. Anybody can read a research paper, but whether you can actually apply that knowledge depends on your training and preparation for that kind of work. There really is no substitute. If you look at the other side of it, one of the leading academics out of the Melbourne University—and her name escapes me at the moment—was a member of the CSIRO board and was on the board of Woolworths for a time. She pointed out some years ago that Australia punched above its weight in terms of research output, that we were putting out something like two per cent of the refereed papers in the world in the plant sciences and the biological sciences at that time. That is pretty good, but what does that really mean to us? We are only putting out two per cent. What about the other 98 per cent? The fact that we were punching this way on the world scene and were highly recognised by the world also meant that our people had good standing against the other producers of information in the world. We built up our own international networks and contacts so that we are able to draw more directly on the experience and information of the rest of the world by virtue of the fact that we were contributing substantially ourselves.

**Senator O’BRIEN**—We had some evidence earlier this week in Brisbane which suggested that to attract more young people perhaps we needed to market this field more and connect it to issues such as environment, feeding the world, humanitarian issues and the like, because altruistic causes might bring back the attention to the sector that seems to have been lost. We had similar evidence about the number of students going through the agricultural sector. What do you think of that?

**Dr McGlasson**—I think that is one more thing and it can certainly help to do that, but it has to be followed through on the ground. You can market it but if you do not have people who can deliver the goods at the school level you are not going to get a result out of it. I come back to my core issue here of looking at the whole system as a totally holistic thing where we go back into the school system, put in the right sorts of teachers—well-trained teachers—and resource them. All the people who have gone back into science in the schools tell me that they are faced with so much bureaucracy in the state system. It is a pity that the skills that these people have trained for are being whittled away or watered down by having to do so much other extraneous stuff. It is all about money saving, of course. They used to have good technical support for the science-type people in the schools at one time but not so much these days. They have to cut budgets somehow. Senator Colbeck’s example from his own state of Tasmania about what is happening down there is one that I would like to see extended around Australia much more such that we do more to bring the kids back into the loop, into the universities and so on whenever possible to expose them to real science and to give them more opportunities for practical experience while they are going through. As a kid growing up in a country town that was not a problem for me. I became a horticulturist because I effectively grew up in it. Where is a city kid going to get that experience today? It is pretty hard for them to do that. It is a matter of looking at how we can give that experience. Market it by all means, but it has to be followed through such that they can get their hands dirty and get real hands-on experience.

**CHAIR**—They want to sell off the land around the ag college out here.

**Dr McGlasson**—I see the state government has backed off on that at the moment and will put it on hold for a while before they decide to go ahead and sell it off.

**Senator FISHER**—As a former country kid—we heard from Dr Estrada-Flores about engaging farmers more in the debate. The rural industry has been talking about ‘to farm gate’ and then they moved to ‘from paddock to plate’. In terms of waste, which you raised earlier, what is the chain now? Is it from paddock to bin?

**Dr McGlasson**—No.

**Senator FISHER**—There is probably a further point beyond ‘bin’. You talk about the chain.

**Senator COLBECK**—Bioenergy.

**Senator FISHER**—The country boy will come up with a very good chain, I know.

**Dr McGlasson**—As I said, I am a post-harvest person so I am involved directly in the whole process all the way along. I have written books and so on. My introductory textbook in post-harvest is widely used around the world. I have been in this game right from the start. You will always have some waste.

**Senator FISHER**—Of course.

**Dr McGlasson**—In our free society, whether you are Woolies, Coles or the corner store, you make a judgement about how much fresh produce you think you are going to be able to sell. I am talking about fresh produce, not processed. If you make the wrong judgement and you cannot sell it all—it all has a limited life—you are going to have waste. Of course, then there is mishandling that happens in the store. We try to train the staff and so on. Customers stick their fingers in things and drop them on the floor or whatever. You are always going to have some waste. You cannot completely eliminate waste, but there are examples where you really can do something about it. The example that is fresh in my mind, because I do a lot of work with the stone fruit industry—

**Senator FISHER**—Pun intended.

**Dr McGlasson**—Woolworth’s will not mind my disclosing this figure now, but their shrinkage rate or loss rate—stuff that did not go through the cash register—was 17 per cent for stone fruit last season. The reason for that was failure to apply the know-how that we had. A lot of fruit was overstored. Maybe some of you bought peaches and nectarines last year that were entirely brown inside.

**Senator FISHER**—Yes.

**Dr McGlasson**—Woolworths almost stopped selling stone fruit from February on because they had so much of that fruit. This is where the intervention comes into it. By working closely with Woolworths, they have changed their operating processes, brought in all of their suppliers into the loop and made to understand what was going on. I would be very shocked if anybody has bought an overstored peach this year. That is wastage. Again, I am just using that as an

example of how the application of technology, the extension of information, and training of people can make a big difference.

**Senator FISHER**—Do you think there is a role for farmers themselves in your entire chain? I think Dr Estrada-Flores was suggesting that farmers could, for example, engage in the bit of the debate between the supermarket and what happens thereafter or between the retailer and what happens thereafter.

**Dr McGlasson**—Definitely.

**Senator FISHER**—How will that value add to the process?

**Dr McGlasson**—I think it is an extremely important process to get everyone in the chain talking and sitting down together on this. I have grown up in that situation where there used to be three or four populations of people in Australia. You had growers on the one hand. You had the wholesalers at the markets. You had the retailers and then you ultimately had the buyers—the people. Two or three of those groups—if I can use the crude expression—hated one another's guts, because they did not trust one another and did not see them as being part of this. I think that attitude has changed enormously. There is still a bit of it there. I am very conscious of that. I am continually doing what I can to try to get people like Woolworths' principal buyers sitting down with the principals of the stone fruit industry or anybody else across the table to really sort out their misunderstandings, differences and so on. At the end of the day they all have to make a buck on their investment; otherwise why would they stay in business? Everyone has to understand exactly what their role is in the whole supply chain. I am very much a supply chain person in that respect.

**Senator FISHER**—Wearing your scientific hat, how do you see use by dates on consumables feeding into all of this? Is it regulated by the right people? Is it regulated in the right way? Have we got the dates right?

**Dr McGlasson**—It is a help. I will use Woolworths as an example here, because I work a lot with them. We run training courses for Woolworths. There will be two more courses this year. Something like two dozen of their fresh produce people will go through a hands-on practical course on understanding fresh produce. These people go away with an understanding of why you have a use by date on there. But they also understand that a use by date is going to be meaningless if you do not look after that product in the recommended way. You have to understand it is perishable, its temperature requirements and that sort of thing as well. Those dates are useful and they do guide the staff who have to manage the quality assurance process.

**Senator FISHER**—They are useful. Are they regarded as a be-all and end-all in some circumstances and is that right or wrong?

**Dr McGlasson**—No, I do not think so.

**Senator FISHER**—That they are not regarded as a be-all and end-all?

**Dr McGlasson**—No, they are not. They are a guide.

**Senator FISHER**—Do you think the consumer uses them as a guide?

**Dr McGlasson**—I think so, yes. Do you take notice of the stamp on prepacked—

**Senator FISHER**—Actually, not much, no. No, I do not. I use my nose and I use my eyes, which will horrify my colleagues. Maybe it explains a lot.

**CHAIR**—I tend to look at the colour of the meat.

**Dr McGlasson**—If you have a pillowy bag of fresh cut salad, you will reject it. You have got some real experience. If you looked at the use by date on it, you will probably find that somebody slipped up and it should not have been on the shelf at that time in that condition. If the staff are doing their job properly, that is the process they go through. They go through their displays every morning and anything that has got to that date or otherwise is turfed, if they are doing the job properly. It is a safeguard for everyone. That is part of your waste, too. If it does not get sold, it is out and it is wasted.

**CHAIR**—We are delighted with your presentation and we hope that we can link up a few people in a common cause. Thank you very much.

**Dr McGlasson**—Thank you very much for listening. I look forward to seeing what actions arise out of all of this.

**Proceedings suspended from 12.38 pm to 1.51 pm**

**MACMILLAN, Ms Catriona Morag, Member, Management Committee, Sydney Food Fairness Alliance**

**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**

**CHAIR**—How is the Sydney Food Fairness Alliance today? Are you well?

**Ms Saville**—Yes, we are; thank you.

**CHAIR**—We welcome you to this inquiry. Do you have any comments to make on the capacity in which you appear?

**Ms Millen**—I am also the coordinator of a food summit that we are planning in October and I am working in food security in the Sydney South West Area Health Service.

**Ms Saville**—My background is eight years of working in food security projects in South West Sydney and also working with rural producers in Western Sydney. I have maintained my involvement with the Sydney Food Fairness Alliance. I am a registered nurse and have a masters of hard science in environmental health. I also work in education at both the Australian Catholic University and UTS and I am a councillor on the Willoughby City Council.

**CHAIR**—Doctor, what is your PhD?

**Dr Parker**—It is in agricultural microbiology.

**CHAIR**—I have wool classing and welding, but do go ahead.

**Dr Parker**—I have been working with farmers in the Sydney Basin for 25 years, and that has been a major area of my research and my industry and community development. I also have a very strong interest in international community development.

**Ms Macmillan**—I am a director on the board of the Organic Federation of Australia, which is the peak body for the organic sector. I am a founder of the Organic Traders and Consumers Network and I am a member of the Standards Australia organic and biodynamic technical committee, FTO32. As for my main interests, I have been involved in organics probably for about 25 years now and, for me, it is on the side of the movement of people. I am very interested in how consumers and people respond to healthcare and other issues.

**CHAIR**—Would you like to make an opening statement, after which we will ask questions?

**Ms Saville**—Yes. Our opening statement is about how the Sydney Food Fairness Alliance was formed. It was formed officially in 2005. A number of people, such as growers and city planners, who had been working in food security projects, emergency food aid, social services and agriculture found that we were all working towards the same end: different aspects of food security and the food supply. We were all either working in areas with a social justice perspective or working with growers and the need to improve health. We all recognised that there was a need for health to be fundamental to food and to food policy and also to agriculture. I guess that was the common theme, but social justice was a foundation also.

We have met a number of times. We held a forum in 2005 at Liverpool, which was attended by about 200 people. We are now planning to have a Sydney food summit, which will be launched at Parliament House on 5 May. We hope to reach a food declaration, certainly for Sydney if not for the whole of New South Wales, that addresses the need for social justice for both farmers and consumers. We also hope that public health will be fundamental to that food declaration. We all have common aims towards that purpose. The launch of the food summit will be on 5 May. There will be lead-up events towards the food summit to ensure there is adequate community consultation. The lead-up events will be held on the Central Coast in the Hunter, Penrith, the Blue Mountains and the Illawarra, and there is also an opportunity for another lead-up event in Macarthur. So those lead-up events will be held in June, July and August. The food summit will be held on 22 and 23 October. We would be very much appreciative if you could join us at the food summit.

**CHAIR**—So you will send us an invitation.

**Ms Saville**—Of course. You will be first on the list.

**CHAIR**—We are short of nurses, so you had better think about going back to nursing as well.

**Ms Saville**—I am doing that. That is where I have been this morning since seven o'clock.

**CHAIR**—We have to kick off somewhere. Let us take social justice. At present on our planet, 800 million people are short of food—

**Ms Saville**—That is right.

**CHAIR**—and one billion people eat too much food and are obese. By the way, the science prediction is that, in 40 years time, one billion people will be not short of food but unable to feed themselves. In addition, 1.6 billion people will be displaced, and science has vague groups that are somewhere in between all of that. What do you mean by 'social justice'? Does that mean that food should be cheap or it should not be market oriented? What do you mean by that?

**Ms Saville**—You are talking more about global food supply. While we acknowledge what is happening globally with the food supply and also the disparities that have been caused through trade agreements, including those that are international, our focus has been more on the local food supply. We have been talking about fair price for farmers for food and about proper training and proper assistance for farmers. Also, we are talking about more consumer/producer alliances and about people who live on below-average incomes and their access to affordable fresh local food.

**CHAIR**—Are you speaking about the food chain from the farmer? For instance, lamb today is about \$4.10 or \$4.20 a kilo when hung on the hook in the abattoir and it is somewhere between \$16 and \$60 for a rack of lamb in DJ's food hall down here, and the farmer does not see any of that.

**Ms Saville**—Yes, there are lots of middle men.

**CHAIR**—Are you trying to make more efficiencies, so that—

**Ms Saville**—Yes, efficiencies; absolutely. It is also about a fair income for farmers because we know that they are very, very disadvantaged with the present marketing systems. We also know that there are certain mark-ups and people could have access to fresher and more affordable food. We have noticed that fresh food is often considered more expensive and there are certain charges associated with that, but then there seems to be an overabundance of high-sugar content foods and high-fat foods, which we do not need.

**CHAIR**—I have to say that farmer markets seem to work well, but we will start in the middle of the table this time with Senator O'Brien.

**Senator O'BRIEN**—I am looking at one of your slides, if I can call it that, in the folder we were just given, where you talk about reported increases in Sydney food prices over the last four years; the CPI is set out there. In a number of those cases, would it be fair to say that milk prices and bread prices have increased in line with the world commodity price for dairy products and wheat?

**Dr Parker**—I simply reported what was the increase in food prices. I was not looking at what was happening on a worldwide basis; we were really interested in what proportion of their income consumers in Australia had to pay. On the previous slide, you will see that low-income families have to spend 56 per cent of their income to have a healthy diet, whereas it is much lower for people who are better off. We were more concerned with that as an issue than with the causes of that issue.

**Senator O'BRIEN**—I suppose one issue for farmers is that, if they do not get an adequate return, which might mean higher prices, they will not want to continue to farm or to farm food. It might be that they are better off farming something such as wine grapes for wine or something like that—not a staple but a luxury good perhaps.

**Dr Parker**—We believe absolutely that farmers ought to get a fair price for their product; we were simply making the point about what proportion of their income low-income families have to spend. The myth is that everyone in Australia has access to healthy food at an affordable price, and for some people that is not the case. I think that is particularly true, if you look at the slide 'Running on empty in Western Sydney': 21 per cent of households had experienced food insecurity. The common perception is that everybody in Australia has enough to eat, but that is not the case.

**CHAIR**—Just so we get this clarified: what defines 'food insecurity' in a household?

**Ms Millen**—Several measures were used in that particular survey. The standard one that is usually used says: have you run out of food in the last 12 months and been unable to buy more? That is a question that has been used in a few national health surveys. Usually the overall result, over the whole of Australia, is about five per cent. So you might think, ‘Five per cent; we’re not doing too badly.’ But, if you translate that into numbers of population, you are looking at hundreds of thousands of people. A 20th of the Australian population equals about a million people.

**CHAIR**—With the indulgence of Senator O’Brien: does that mean it is a question of not being able to buy the food rather than find the food?

**Ms Millen**—In that case, that is what we are asking. Yes, they do not have money to buy more. There are another lot of issues for people—

**CHAIR**—But it does not take into account whether it has all gone into the pokies at the club, on speed or—

**Ms Millen**—A lot of my work is concentrated in poorer areas of South West Sydney and that is a very common kind of perception: everybody really has enough money and they are all spending it on pokies.

**CHAIR**—But do you research what happens to the household budget in arriving at that?

**Ms Millen**—Yes, we do. We have talked to the people that we work with and to a number of other people, and sometimes you hear the stories that people tell about their lives and their struggles. There is no space for your car or fridge breaking down. Some people in substandard housing perhaps do not have white goods for storage of food. In some of the outer suburbs in South West Sydney, there is not ready access to fresh fruit and vegetables. We assume that people have cars to get to big supermarkets. Everybody doesn’t have cars and some of those areas are very poorly served by public transport. So a number of different issues impact on both whether people can afford the food and whether they can access the food. You will find that there are a lot of fast food outlets in a lot of those areas. We think that a lot of work could be done in terms of addressing planning issues around what sort of outlets are in areas.

**Senator O’Brien**—Are they the sorts of places where a certain fast food chain would put the prices up?

**Ms Millen**—There have been some indications that some supermarkets put prices up in some of the poorer areas because they have a captive market. Certainly, in surveys that we have done, we have shown that the quality is often a lot lower. These are some of the people who could benefit most from accessing healthy fresh food, but they often have the most difficulty in getting hold of it. The alliance is calling for us to take a really good, long, hard look at how we are dealing with food and food access. It is not just a matter of which types of food you prefer to have. As you have already mentioned, we have a big problem with obesity in this country, as we have in many other countries. In the future, dealing with that problem will be a very costly business for us—and that is not always people who choose to eat those foods; they are often the only foods that are there or they are much cheaper. There are a lot of other structural issues apart

from people deciding that they like high-salt or high-sugar foods; they are promoted much more heavily.

Your inquiry has given us the opportunity to say that this ties in with what we are looking at, which is that we need a much more comprehensive look to be taken at food in Australia for the future. We are very supportive of Victorian Health's suggestion that what we look at, in terms of what farmers grow, should be guided by what the population needs to eat. That should be a real consideration; otherwise, we are doing it back to front. So, in terms of looking at how we are going to keep the population healthy into the future, that is going to be a really key concern to feed into looking at agricultural policy and how we can support farmers in growing the foods that we need.

**Senator O'BRIEN**—What sort of penetration has the school Kitchen Garden project development had here in the Sydney Basin?

**Ms Millen**—I don't know how many there are, but there are a lot of very good ones.

**Ms Saville**—Yes, there are some very, very good projects. I was working in the Hawkesbury some years ago, running the Hawkesbury Food Program, and we established a number of food gardens in schools. It has certainly been well established in other parts of Sydney, although I think Victoria is doing better than us at it—and it is certainly better publicised there. But, of course, school gardens or community gardens in schools provide children with exercise, an appreciation of understanding how food grows and learning how to do it so that they can become more sufficient and be able to enjoy fresh food from their own gardens and teach their families too. There are huge, huge benefits to it. We are all greatly supportive of that and any sort of community gardens and school kitchen gardens, because they improve knowledge, they are about skilling and they have so many benefits. But I think we also need some very, very strong government food policy, which definitely has public health as a fundamental.

Another concern of ours is that in a country like Australia, where it is predicted that we are going to lose 27 per cent of our agricultural production as a result of climate change, we see that farming that at the moment is close to cities is usually done on soil that is the most fertile. There is rapid urban encroachment on to those lands, whether they are in the Yarra Valley or in the Hawkesbury and Nepean valleys in Sydney. That is where the assumption is that the Australian dream is for a house on a quarter-acre block and we keep extending further west into that farming land, which is producing 90 per cent of the perishables that feed Sydney. Food in Sydney is affordable at the moment. Yes, I know that earlier we said that it is expensive, but Sydney has affordable food because it is grown close to the city; it is grown 50 kilometres away on fertile soil, which has access to water. In terms of climate change and peak oil, transportation costs will increase, which means that access to affordable food and a local fresh food supply will diminish. There is a myth about pushing agriculture further west in terms of perishable food.

**Senator O'BRIEN**—If, indeed, the water is there further west to produce the same output, it may be that it is produced in other parts of the country. But I am certain that plenty of food is brought into the Sydney Basin from well outside the—

**Ms Saville**—I am talking about perishable vegetables, eggs, poultry and mushrooms. Wheat, of course, and other things are grown elsewhere. But we also know that, because of the declining quality of our soils in Australia, the protein content of wheat is in decline.

**Senator NASH**—I am sorry; can you just repeat that?

**CHAIR**—Can you say that again?

**Ms Saville**—Because of the quality of soils in Australia, because they are ancient soils, the quality of some of the produce—for example, the protein in wheat—is in decline.

**CHAIR**—Can I tell you that you are categorically wrong?

**Ms Saville**—Is that wrong? I am reassured to hear that, but that is some of the evidence that I have read. We are growing food in lower-nutrient soils, but of course that is not the case in the Hawkesbury.

**Dr Parker**—Perhaps I could make a comment on the Sydney Basin. In the submission, one of the slides actually gives the data based on New South Wales DPI figures of the amount of produce produced in the Sydney Basin, and it is over \$1 billion per annum.

**Senator O'BRIEN**—Yes. Sydney has had a very strong market garden and certainly egg production. Dairying has long since been nothing more than a novelty, I think, in the Sydney Basin.

**Dr Parker**—I am sorry; you think it is a novelty?

**Senator O'BRIEN**—Most of the dairy produce in this country is outside the Sydney Basin.

**Dr Parker**—I am not talking about dairy; I am talking about vegetable production. A wide variety of industries in the Sydney Basin are crucially important. The other really important issue is the social and cultural dimension, where it has provided a settlement strategy for successive groups of migrants. There are over 200,000 market gardens at the moment in the Sydney Basin, 40 per cent of which are in the designated growth areas. By themselves, without government assistance, they have introduced new industries. They have been extremely entrepreneurial and resilient. They introduced Lebanese cucumbers, cherry tomatoes and herbs. All of those things have been introduced by migrant farmers. That is one of the really important reasons for our needing to maintain that close relationship between the cities and the surrounding agricultural land.

**Senator O'BRIEN**—There are a couple of issues there. One is what the New South Wales state government is prepared to do in opening up zoning in some of those areas; that is one of the keys. The other is: what size allotments can be opened up in some of those areas as to whether you—

**Dr Parker**—Mostly they want small allotments because labour is in short supply. They do not want large areas of land; they want small areas of capital intensive land. Five acres is often what they need, and the maximum is 20 acres. They do not want large areas.

There is another issue in terms of state government. I also think personally that the Australian government could take a lead with policy in terms of our cities. The issue of peri-urban agriculture is in all of our Australian cities, because 25 per cent of the gross value of Australian agriculture is from peri-urban land around cities. So it is Melbourne, Sydney, Brisbane, Adelaide—all of our cities.

**Senator O'BRIEN**—I suppose the other issue is how we deal with your proposition that we should be establishing more community garden facilities in the suburbs in the context of another issue we have been dealing with on another related committee, which is public transport.

**Dr Parker**—Yes.

**Senator O'BRIEN**—We spread and we spread and we do not have the resources to provide proper transport for the community.

**Dr Parker**—Absolutely.

**Senator O'BRIEN**—So, if we infill, inevitably that will put pressure on spaces that might be those gardens. How do we deal with that?

**Dr Parker**—Firstly, in outer Sydney, there is actually a lot of land. The problem is that a lot of that land is rural residential land; people are just living on it for lifestyle. We could actually have a much more balanced approach to development that includes agriculture and food production as well as lifestyle and urbanisation. In terms of community gardens, they are economic, but also they are important in a social and cultural context. So I think they serve slightly different purposes. Certainly there is the example of Cuba, where they did grow enough stuff in the city to feed themselves. But, for me, at the moment I see them as possibly two different issues: the fringe lands and the inner city lands. I do not know whether other people would like to comment on that.

**Ms Saville**—I would like to reinforce what Frances has said there. Community gardens are very much meeting the social needs of people and, of course, they contribute to people's diets, but I do not think in Australia at this stage they are producing enough to feed a whole family or for a whole diet. It is more a contribution and supplement to nutrition rather than producing enough to satisfy a family's needs. But certainly we need that peri-urban agriculture, those lands, to be protected. I would ask that the state and federal governments step in and designate serious rural zones, as perhaps they have in Cuba and in many European cities. Land is a finite resource, water is a finite resource and we know that peak oil will increase transportation costs dramatically. At the moment our cities are able to be healthy, nourished by a fresh food supply because it is grown on our backdoor step. But our current planning is going to push that agriculture further west and, certainly in Sydney, across the other side of the divide.

In terms of community gardens in the cities, yes, in your LEPs and your DCPs you can say that every school, SEPP 5 for aged housing, church and greenfields site has one while retaining native vegetation, of course, and not cutting down more trees for community gardens. But there is certainly much more opportunity for it. In England they use the railway embankments for community gardens. There are many opportunities for it. But peri-urban agriculture, where those small productive farms are protected through legislation and zoning, I think is really very, very

important. Those small farms are much more productive than the broad acre farms—those farms that have many, many more hectares. The smaller five-acre farms are very, very productive. Because families are also living on the farms, they tend to be very conscious of the environmental impacts of what they are doing.

**Dr Parker**—Perhaps I can make a very quick comment too about the importance of peri-urban agriculture in terms of employment. What, in fact, happens is that people in adjacent urban areas, particularly those who are long-term unemployed or finding it difficult to get a job, often work on these farms. Whereas in rural areas it is very difficult to get labour, adjacent to the cities they can use the urban workforce as well. It is an important consideration.

**CHAIR**—Wouldn't that be a mortal sin though? You fly over Sydney and you see a fair bit of spare land; most of it is wooded. Would it be a mortal sin to cut those trees down to grow tucker and replant the trees somewhere else?

**Ms Saville**—Are you asking me about—

**CHAIR**—I am. You are the nurse.

**Ms Saville**—I think it is very important for carbon storage that we retain the forests where they are. I also think there is huge potential for peri-urban agriculture and community gardens also to store carbon. I think we need also to protect our biodiversity and our native vegetation, but we also need to designate certain areas of land within our cities and on those peri-urban areas and we need to seriously zone for its protection to feed the cities. I think also there is huge potential for waste recycling and carbon capture in peri-urban agriculture close to the cities.

**CHAIR**—If it came to a choice somewhere out there between that five acre block there that was in its native state but on good soil—

**Ms Saville**—We need to have both for carbon storage and for biodiversity; we need both.

**CHAIR**—But how do you have your cake and eat it too?

**Ms Saville**—We have enough land at the moment.

**CHAIR**—But, if it is in the middle of a suburb and there are two million hectares of spiny acacia in the lower gulf and five acres of prime agricultural land with trees on it between Strathfield and wherever, you still would not produce off it?

**Ms Saville**—At the moment I think I would have to leave that for a scientific decision.

**CHAIR**—We get your point.

**Ms Saville**—That is a hypothesis, but I am saying that there is enough space already to use without encroaching on native forests.

**Ms Macmillan**—I think one of the most important things to note though is that we actually are an alliance. The reason we are an alliance is that we are looking at things from very many

different angles. It is not that we have a solution or the solution; we are saying that we actually have to start looking at this from the whole perspective.

**CHAIR**—That is why we are here. We are here to hear from you. A couple of us are mad farmers, you see. We have a mad horse trainer here. I do not know what I would call Senator Colbeck. That bloke down there is very smart. Do not be taken in; he is very smart. Righto, it is your turn to ask questions.

**Ms Macmillan**—Just in terms of your being farmers, I want to say that I eat three times a day and you are a very important part of my life. But I want to make sure that I have good food on my table.

**CHAIR**—You should realise that you are probably a guts because you eat three times a day; you only need to eat twice a day.

**Ms Macmillan**—And I do eat meat. The other thing is that I do live in the eastern suburbs and I want your food; I do not want it from the other side of the world.

**CHAIR**—We are on your side.

**Ms Macmillan**—I actually want it from your land and I want your soils protected. I want those soils to be good and able to hold water, which will help us with climate change.

**Senator FARRELL**—I just want to be clear on this: what was Cuba being held up as the model for?

**Dr Parker**—It is in our written submission. When Cuba was cut off from the rest of the world, basically, when the Soviet Union collapsed, it had a food shortage, so the Cubans turned every piece of land into food production and were able to feed themselves. That is basically what happened.

**Ms Saville**—They did protect their forests and their forests have actually increased in area, which also helps with climate control and carbon storage. They put the farmland into state ownership because a lot of agricultural land was not producing; it was not being actively formed. The state took over and there were designated rural areas, more people had employment, in fact, and they were able to produce more. They were smaller farms, but they were state run.

**Dr Parker**—It is seen as a model of what can be done when there is a catastrophic situation and you absolutely have to produce all of your own food and do it quickly.

**Ms Millen**—That is not unlike what happened in Britain during the Second World War.

**Senator NASH**—Thanks, ladies. I do congratulate you on your thinking outside the square with this issue. Holistically, there are so many areas to this, which is what we are finding. We have only just started this inquiry and there are a whole lot of different areas that will impact on the issues of broader food production and food security. I have a couple of questions around the logistics of things. I understand the principle of trying to keep that peri-urban land for

agricultural production, but you do not have to be blind Freddy to realise that the city is growing and it will continue to grow population wise; what do you do with the people?

**Dr Parker**—I put in a slide about this: urban sprawl is not inevitable. Driving around Western Sydney, people would be surprised at the capital intensive agriculture that is there on small five acre lots—five acres can feed a family—but, at the same time, 70 per cent of the lots are rural residential land with just a house surrounded by a big area of land. It is not being used to produce anything; it is just lifestyle. So, in fact, there is enough land, if it is planed and zoned properly. It is a myth that we have to use all of that land for houses. But, when people say, ‘We’ve just got to release more land for houses,’ we really need to look very carefully at what land it is, where it is and what it is currently being used for and ask whether there are other alternatives: ‘Is there better land for housing and is this land best left in agriculture?’

**Ms Millen**—I would like to add something here, if I could. Last year I did a health impact assessment on a couple of the new release areas on the south-west of Sydney, Oran Park and Turner Road. The original plans for that had 30 per cent affordable housing. It was medium density and was for low-income owners, possibly rental or first home buyer investments. By the time we came to look at the plans, there was no more talk about affordable housing; they were all going to be large houses. I suspect that may change or there is an opportunity for it to change because there probably are not queues of people waiting to buy \$400,000 and \$500,000 houses now as there might have been even six or seven months ago. So that is possibly an opportunity for us.

But that just shows me the tension that is there. It is not just about our having to put people somewhere; it is talking about what kind and size of housing we are providing for people. It is talking about whether we are planning to have our cities compatible with the growth of food. It is about whether we have the planning department planning away for where people are going to go and where there will be growth and we have agriculture working away on its own, or whether we have people talking together about how we can plan to accommodate both people and food growing. We cannot leave it to chance. Really, things have happened in a fairly ad hoc way now, and Sydney is fortunate in that there is a lot of land around it and we have been able to do that up until now. But we all know that the mountains are there and we are not going to move those and the mountains are what create the rainfall between the mountains and the coast. So we need to start taking a look at that both here and in other cities around Australia.

**Senator NASH**—That just leads me to another thought. If you want to keep that fringe area for agriculture, do we get governments to look more seriously at transport options and things like Bells Line of Road over those mountains you were just talking about in order to get the inevitable growth of population away from the city, if we need to settle that and to keep that closer peri-urban area that you want free for agriculture? Is that something to be considered? If not, we are just going to hit those mountains.

**Ms Millen**—I think that is right. I think people like Julian Disney will argue that we should have a greater number of larger cities; we should not have everything focused on two or three major cities around Australia and then have only very small ones in other places. There is a lot of opportunity to build up some of those regional cities and use the land there.

**Dr Parker**—Perhaps I can just say that only six per cent of the land in Western Sydney, the growth areas, is used for intensive agriculture. So, in fact, with proper planning, it can coexist with urbanisation.

**Senator NASH**—That brings me to my next point, which is something that you raised before, and that is the land being zoned rural residential and lifestyle blocks and the potential to use that land for agriculture. Does that then not work on the assumption though that people would want to give up a lifestyle block to be used for agriculture? Perhaps they are lifestyle blocks because that is what the demand is; the demand is not to use them for agriculture.

**Dr Parker**—I think that is a political issue and a contentious one.

**Senator NASH**—But is it a political issue? It is not necessarily more a free market issue, but if you have a city settled in such a way where people just choose a lifestyle block, are you talking about an imperative for some of that land to be resumed to be used for agricultural purposes? If so, at what stage does a free market kick in?

**Ms Saville**—It sounds almost like a benign democracy or even a socialist society. But I do think that we have to look seriously at populations and how much food locally produced is needed to feed those people, and I do not think that has really been on the political agenda. We do not have a population policy and we are still encouraging migration. We are going to have huge populations, whether they are in the city or in regional centres. Australia has produced so much food over the years and we export, of course, still to other countries; but, in terms of feeding local people local fresh produce, how much land will really be needed to do that?

**Senator NASH**—Are you talking about resumption of land for agricultural purposes?

**Ms Saville**—I know that it is unpopular.

**Senator NASH**—Is that yes or a no?

**Ms Saville**—Yes, and it has been done in America and other countries as well. The Farmland Trust in America, I believe, looks at those sorts of issues as well where you do need to zone certain land for food. Unfortunately, that area in the south-west of Sydney is the size of Canberra. A large proportion of that presently is used for food production and that is going to be designated for housing.

**Dr Parker**—Perhaps I can just say that the two areas in Sydney that have been designated for housing, north-west and south west, are the two most important agricultural areas. I think we do have a window of opportunity now, because of the slowing down in housing and the credit crunch and all of that, to relook at that. In fact, when North Western Sydney was developed, the land owned by the large landowners was developed first because of the whole way it was set up and that led to fragmented development and no community structures. That is exactly what appears to be happening in South Western Sydney as well. In fact, the fragmented land that is now used for agricultural production poses a problem for planners because they have to consolidate that land in order to develop it.

**Senator NASH**—Do you think in a way you are up against human nature a bit though? I am just picking an example of a five-acre block somewhere that somebody owns and there is the potential for it to be zoned subdividable, at which point they are going to make a fortune, or to have the option of keeping that five acres and only being able to sell it as a market garden. I am just talking about the human nature aspect of this. At what point should government have a role in deciding for whoever owns the land that, in that sort of circumstance, they must choose to take a less profitable option for the greater good?

**Dr Parker**—I think they are all issues that need to be debated in a much more open way—like, how can we retain the land? But the myth is that farmers want to sell their land, Some do not; many do not. I have spoken to Aldo, a farmer at Kellyville. He was a third-generation farmer and the development was right up to his door. He said, ‘I guess I’ll have to sell, but it’ll break my heart.’

**Senator NASH**—I am not saying that at all. It is, I suppose, bringing that factor of choice into it. In a way what you are advocating is, in some areas, just removing that option of choice for an owner to take separate options with their land.

**Senator O’BRIEN**—Sydney development did that for a long time, though, didn’t it?

**Ms Macmillan**—Maybe though there is a place where we actually have to break the habit. We have had the credit crunch. Patrick Holden CBE of the Soil Association in the UK talks about the food crunch; he talks about the fact that we are using up resources like fossil fuels, soil and water, which are finite. We were not dealing with that years ago. In the fifties, the sixties and the seventies, we did not think about how our resources were going to run out. So I think we do have to look at this from the point of view that we now know different information. We have had a habit in the way that we deal with the market and in the way we sell and buy property and that habit now has to be changed. It is a bit like smoking: we know that we cannot carry on picking up the cigarette as we know it will affect our lungs. I feel that this is what we are talking about here: we actually have to change the way that we look at this land and find ways of protecting it.

**Senator NASH**—I have one last quick question and it just takes you back to something that we were discussing at the beginning, which is the issue of a fair price for farmers while consumers want and sometimes need inexpensive healthy affordable food. I asked a previous witness today: how do you balance that; how do you provide an inexpensive and healthy food option and at the same time allow farmers enough profitability to be sustainable? I asked that in the context of the fact that the ACCC has not been able to sort it out as yet. Do you have another alternative of how we might be able to make sure that we cater for both of those ends of the spectrum?

**Ms Saville**—I think one way would be to have more markets throughout Sydney—markets that are similar to farmers markets but which are regional and other sorts of markets. I think also the supermarkets make it very difficult for farmers in some ways in that there is a huge wastage of food. Farmers have to produce food of a certain size and, if it does not meet the supermarket’s requirements, it is wasted, so there is an enormous amount of food wasted. I believe that food wastage is increasing. I guess, if we look at our society in terms of how much we waste, we have to question how we operate as a society. We seem to have far too much processed food. I think the government should step in and consider food advertising to children and having higher taxes

on junk foods. The other question was how to make things more affordable for people. Cutting out the middle men really, I think, is a huge thing as well as increasing people's awareness of what fresh food really is and what it is about.

**Ms Macmillan**—Decentralisation too—

**Ms Saville**—Decentralisation.

**Ms Macmillan**—and a lot of the costs involved in the way that we have been farming, packaging and processing to cover very long distances. So it is about going back to a sense of being more seasonal and looking at how we can build up the local systems in our own communities in our cities and towns so that we can see how things do interact. In the UK, where they have been putting some of these local policies in place, they found that the relationship between, for example, schools where they supply lunches—of course, we do not do that in this system here—and local growers has resulted in a cutting of cost for the food arriving in the schools. That is because they are using local growers, who have a responsibility, and the cooks are finding that they have to choose and then decide what is on the menu. So, in a sense, as we decentralise and as people start to build up relationships—people are dealing directly with smaller farmers in some situations—costs are cut.

**Dr Parker**—Perhaps I can make a comment. Fresh fruit and vegetables bought at the Flemington markets and the Parklea markets are much, much cheaper than they are in the supermarkets, and many producers go to Flemington and Parklea. So I think direct marketing, farmer cooperatives and all of those sorts of things need to be investigated. That is why we are saying that we need to look at the whole system through new eyes. It is a vast topic and I really congratulate you on looking at it. Food is not just an economic commodity; it is central to our social and cultural lives. What we eat and how we produce it are what we are as a society.

**Ms Saville**—I was involved in the formation of the Hawkesbury Harvest's Farm Gate Trail. That was really about establishing consumer-producer alliances to help people reconnect with the source of their food. People used to have the right to grow their own food and city people all had relatives in the country. I am from farming stock too—food producers in the UK. People had that connection with those who grew their food. We have lost that connection as we have become more highly urbanised. Employment on the farms increased as a direct result of our starting the Farm Gate Trail. So I just think that, if those connections between rural people and city people can be actively supported by governments through decentralisation, as we have said earlier, there are many, many ways of interlinking and growing this fundamental thing, which is our connection with our own food supply; it is fundamental to human health, life and culture.

**Senator NASH**—I have one last very quick question just to clarify something that you have in your submission. I am interested in what evidence you base this comment of yours on: 'Most Australians want Monsanto's genetically manipulated GM-Roundup-tolerant canola banned.' Could you just point me to the science there?

**Ms Saville**—It is surveys by the genetics group. I cannot remember where—

**Senator NASH**—Please take that on notice and perhaps provide that information to the committee. It is a bit of a generalised statement.

**Ms Saville**—Certainly, very many surveys have been undertaken of people and their approval and desire to eat GMO foods, and most people are very reluctant to do that.

**Senator NASH**—I would just like a bit scientific evidence behind those words ‘most people’; that is all. Thank you very much.

**Senator COLBECK**—In view of your comments about markets and cheaper food, can you give me an assessment of the quantum? My observation is that a farmers market does not necessarily equate to cheaper food; quite often they just price to the market.

**Dr Parker**—I think a lot of the farmers markets are actually catering to middle-class people who are quite well off. It is an avenue by which farmers can sell their produce, but they are not necessarily cheaper. I was talking about Flemington and Parklea and that is where the market gardeners from the Sydney Basin go and sell their produce directly, and it is cheaper—like 75 per cent or 50 per cent cheaper and so on. But I agree with you: farmers markets are not necessarily cheaper at the moment.

**Ms Saville**—It depends on the type. Some of those farmers markets sell processed food as well, and they can be very much boutique foods. There is one in Canberra, which is really quite interesting. I do not know whether any of you, living in Canberra, have visited it.

**Senator COLBECK**—Do not assume that we all live in Canberra. I live on the north-west coast of Tassie, which produces about 80 per cent of Australia’s processed vegetables; Heffo is from out in the scrub in New South Wales; Kerry is from a semirural block, I think, in the Tamar Valley; and Senator Nash is somewhere in the vicinity of ‘Wild Bill’.

**CHAIR**—The secretary comes from the bush too.

**Senator COLBECK**—We are not all urbanites and we bring with us some of that rural background. I suppose, if you are going into mad descriptions, I am a mad cured dairy farmer. I was cured—

**Ms Saville**—I just wanted to give you an idea of a farmers market. The one near Canberra is a very good example because the fruit and veg there is very, very cheap. I just thought that was an easy one for you to go and see.

**Senator COLBECK**—I attend my farmers market locally every week that it is on, so I am familiar with the markets and who is there. It is a great source of information, as you have indicated in your presentation.

**Ms Saville**—And they are very vibrant. The fact that people in urban Canberra can connect with the people that grow the food is a wonderful thing.

**Senator COLBECK**—Just going back to the planning issues that you have spoken of—I notice that you, yourself, are involved with local government, and I know that we are talking about Sydney here—what capacity does local government have to actually determine some of these planning parameters, or is that done at a level up here in New South Wales where it is dealt with at a state level?

**Ms Saville**—Zoning is dealt with at a local government level and that has to be approved by the minister. But, in terms of parks, schools, churches and things like that, I think that, at the time that applications come before councils, there is an opportunity to say that part of this land would be suitable for growing some food.

**Senator COLBECK**—Is there any activity at the local government level—

**Ms Saville**—No, very little.

**Senator COLBECK**—towards pushing for these sorts of zonings that you talk about in your submission?

**Ms Saville**—No. I think the City of Sydney council are going to consider doing some. There has been some work around Penrith, I believe, in the past with school community gardens.

**Ms Millen**—Penrith has taken quite an active role in trying to look at the growth requirements. Each of the local councils is required to grow by a certain percentage of new homes and they are really looking at trying to consolidate their growth and to leave green areas in between, like productive areas and native vegetation. That is a very conscious policy they have been adopting in Penrith.

**Senator COLBECK**—What sort of capacity targets in respect of supply capacity do you think there would be for a city such as Sydney? You talk about the amount of food produced and you mention in here the proportion of the food produced here locally.

**Dr Parker**—Ninety per cent of the perishable vegetables.

**Senator COLBECK**—What would be a target?

**Dr Parker**—Personally, I would like us to retain what we have. I think it is important to recognise also that the market gardeners and the farmers in the Sydney Basin, as a whole, are younger than the farming population in general. It is young families and they are committed to the long haul; they are quite different. I think one of the things that we wanted to bring out in the submission is people's view of who a farmer is and to broaden that out to include people from different cultural backgrounds. Thirty per cent of the horticultural industry throughout Australia is made up of people from different cultural backgrounds and they are not represented in the decision-making processes; they do not operate generally in the peak bodies that government listens to. That is one of the things that we just wanted to expand on. Agriculture and food production is much more than just extensive agriculture west of the divide; it is peri-urban agriculture and people from different backgrounds. Personally, I would like to retain what we have.

**Senator COLBECK**—So you are looking to retain the capacity that current exists rather than necessarily growing capacity.

**Ms Saville**—If we could increase the amount that we are producing locally and could protect it, it would be a good thing.

**Senator COLBECK**—In your view, in respect of the imposition of planning requirements, what sort of rules and parameters should apply to those things? There is quite often a conflict between urban living and agriculture. If something has to happen in an agricultural sense, it has to happen. You see the conflict in a rural setting where someone decides to make the tree change, if you like, and they get a nice block out in the middle of nowhere surrounded by farms and suddenly realise there is a tractor rolling past at two o'clock in the morning. How do you manage those issues? There is the example of your farmer who had everything up against the boundary; he would be one who would feel those particular pressures. He has been there and, quite frankly, should have rights of use, but that does not mean that 30 neighbours along the back fence are not going to ring the local council saying, 'That bugger's got his tractor going again.'

**Dr Parker**—That is the real difficulty and that is often why people have to get out. In the slides I have a picture of McDonald's at Quakers Hill. McDonald's at Quakers Hill is right next to a poultry farm and that poultry farm has not moved because they have existing user rights. So they are still there, totally surrounded by houses, right next door to a McDonald's.

**Senator NASH**—Do they supply the eggs for McDonald's?

**Dr Parker**—I do not know. They actually supply Omega eggs. They realised that, if they were going to stay in production, they had to have something special and so they have Omega eggs. I would agree that the person who is there ought to have the right but, in practice, all those other people moving in often have the political power.

**Senator COLBECK**—I am aware of a mushroom producer in my town, for example, who had to move out of town because the production of the compost was a very fragrant process and it was too much for the neighbours who had moved in.

**CHAIR**—I am about to impose some discipline on this process. Senator Colbeck, are you getting close to the end of your questions?

**Senator COLBECK**—I was.

**CHAIR**—Can I give you a bit of good news? The Mayor of Tweed Shire is newly elected and her name is Joan van Lieshout. She is trying to do what you are doing from the council outwards instead of from outwards in.

**Ms Saville**—Fantastic.

**CHAIR**—You should contact her and we would have her details in Tweed. She has exactly the same mindset and she is on the other end of the road you are on, coming back towards you.

**Ms Millen**—Since we said that we would have the food summit in October, as you will see on our list here, a number of prominent organisations have come on board with concern about the issues—from the Public Health Association to the Red Cross, the New South Wales Council of Social Services, a lot of church groups and the urban rights centre; it is a whole number of different organisations. We have then been asked by people in different areas whether they can have their own lead-up events because of the concern locally. So we hadn't planned an event in

the Blue Mountains; they have asked to run their own event. We hadn't planned an event in South West Sydney; they have asked to plan their own event. We heard last week that Coffs Harbour also is interested in coming in under the general umbrella. So there is evidence that there is a lot of concern for developing a cross-portfolio approach to these issues.

**CHAIR**—I take it that you do not endorse some of the internal farming that goes on with lights inside houses.

**Ms Saville**—No, we do not—only if it is tomatoes.

**CHAIR**—In Junee, we have a bloke that has a greenhouse with a plastic top over it; it would be one-third the size of this room and he supplies food for about 50 people. So we are very grateful for your enthusiasm. You do not look like old hippies to me.

**Ms Macmillan**—I think we are a bit of a wave actually. There is a whole moment happening; there is a groundswell. We just happen to have put our hands up a few years ago and said, 'We're going to get together about this.'

**CHAIR**—You were ahead of your time.

**Ms Macmillan**—But really we are just the top of—

**CHAIR**—We will come along and stir your meetings up for you. Thank you very much.

**Dr Parker**—We will acquaint you with all of this.

**CHAIR**—Yes.

[2.49 pm]

**DUDDY, Mr Timothy, Spokesman, Caroon Coal Action Group**

**CHAIR**—I note that you do not have a submission, but that does not matter. How are you?

**Mr Duddy**—Very fine; thank you.

**CHAIR**—Would you like to make an opening statement so that we can pick it to pieces?

**Mr Duddy**—I am from the Liverpool Plains, which is an area of some 1,200 kilometres up in the north-west of New South Wales some 400 kilometres from Sydney. It is bounded by the Great Dividing Range to the east, the Liverpool Range to the south and the Warrumbungles to the west. We are a sedimentary flood plain that has been laid down over several million years to provide a very rich, fertile area.

At a time when food security is an issue, Australia actually exports almost 80 per cent of the food it produces; as the world's populations grow, that will be vitally important in regard to the financial input that food production represents for this country. Annually, our plain produces 233,000 tonnes of sorghum for cattle and chicken feed, 29 million kilograms of beef, 77 million kilograms of chicken and 77,000 tonnes of pork. The crops in that area consistently produce 40 per cent above the national average. We have grown 183,488 tonnes of wheat over a 16-year average, which equates to 365 million loaves of bread; 63,709 tonnes of barley, which equates to 144 million bottles of beer; 19,829 tonnes of sunflowers, which is eight million litres of oil; and 29,018 tonnes of corn, which is 68 million boxes of cornflakes. That area has produced 36 crops in the last 40 crop-producing periods. In the last 20 years, that area—it produces two crops a year, a summer and a winter crop—has had only four of what can be labelled as 'complete failures', taking out of the equation any irrigated country in the area.

Currently we are facing a coal exploration licence by BHP, which is the first step, and many other exploration licences are about to be given in that area. To consider that we would compromise prime agricultural land of this value in this state or, for that matter, any other is incredible. This week I have just returned from visiting the area of Felton, the Haystack Plains and the Jimbour Plains in Queensland. They also have very fine alluvial black soil that has an extraordinary capacity to store moisture and produce through good seasons and bad, and exactly the same thing is being experienced in those areas.

Australia has less than six per cent of arable land. Under that six per cent of arable land—considering that 94 per cent of the rest of Australia is non-arable or marginal, whichever way it goes—there are incredible mineral resources. I believe that, in the interest of food security, the areas that are considered arable and productive should be preserved for the purpose of food production. The other areas do not have dual purposes. If something is not available to be used for food production, it should be looked at for other purposes. But I believe that areas should be locked up in this state—in fact, in this nation—to protect food production in the long term.

Water being the great issue that it is, sedimentary flood plains with underlying aquifers on river structures are very important. Potentially damaging those water supplies, which will also compromise the ability of other people to produce food through irrigation, I believe, represents a very grave situation that needs to be addressed by committees like this in the immediate future.

**CHAIR**—Is most of this land freehold?

**Mr Duddy**—Yes, it is. Our area is entirely freehold.

**CHAIR**—Does doing what you want to do interfere in the market?

**Mr Duddy**—No, not at all. I actually believe that it would improve the market in regard to an agricultural saleable point of view in the long term.

**CHAIR**—My point is that, if I think—and I am the farmer—the land is worth \$2,000 an acre and you come along and offer me \$10,000 an acre to put a mine there, what do I do about it?

**Mr Duddy**—You would not be offered \$10,000 an acre for a mine, because a mine would be a prohibited use. However, the other side of the coin is that it would mean that the farmer who really wanted to farm would know that he was never going to have a mining company arriving at the back door, saying that they were going to take it over. If people wanted to go and do progressive farming, they would have the opportunity to do that in those areas that are bound as significant areas for agriculture forever.

**Senator NASH**—Long before you even get to the point of potential sale or an offer to buy, could you just outline for the committee the impacts, as you see them, that can occur at the moment to the land during the exploratory stage?

**Mr Duddy**—To be bought by a mining company?

**Senator NASH**—Yes.

**Mr Duddy**—The mining company knocks on your back door and says, ‘We want access to your property.’ We say, ‘That’s all very well, but we don’t want you to come on here.’ They then run you through a whole host of rather interesting processes, the first being arbitration, the second being a Mining Warden’s Court and then orders are imposed by a mining warden. No matter what conditions the landholder has asked for, normally they are not adhered to—even down to simple things like 24 hours notice to enable you to move your thoroughbred racehorses out of a breeding paddock that is adjacent to a drill area. The mining company do not think they need to give you 24 hours notice; they just say that they can come onto the property, say, in 25 years time between 6 June and 29 April.

The whole area goes into suspended animation. You have people who will not sell, because they might get a big payout from the mine later on. You have people who will not buy, because they do not want the potential of their property being taken by a mine when they buy into an area. So you have this stalemate where people are no longer prepared to develop, build, re-fence or repair; they just sit there in suspended animation. It totally freezes the whole area. You have properties that need to do developments because they have undergone water legislation. Those

developments are costly—it costs a couple of million dollars for a proper setup—and those people are not prepared to do them because, from the day an exploration licence is given over a property, the mining company does not have to compensate for any capital improvements that are done on those properties.

**CHAIR**—You have given us the lead-up. Would you now just take us to the effects—the longwall mining and the attack to the aquifer?

**Mr Duddy**—Mining has never been attempted in an Australian area like ours. It has certainly been attempted in areas where there are aquifers but not of the quantity that we have. I am a seventh generation farmer. My family pioneered in many ways and what they pioneered in our area was irrigation development. In 1965, when the drought hit, we developed a bore that produced just short of one million litres an hour. At that time, that was the largest bore in the Southern Hemisphere. The director of Caterpillar came out from Illinois and basically said to the family, ‘As much money as you want to develop whatever you want is yours interest free. We just want to use this to do what you are doing here; we are so impressed by the progress of what these plains will produce.’

**CHAIR**—Is that the Namoi aquifer?

**Mr Duddy**—It is the upper-Namoi aquifer, yes. We are actually in zone seven.

**CHAIR**—That was one of the aquifers that got badly mined where they had to return 85 per cent?

**Mr Duddy**—Yes, it certainly was. A lot of that area had sleeping licences and those people were not compensated. That was done on the basis of reduction for the long-term sustainability of food production and production of the area. So those areas were given back without compensation for that water.

With the current methods that have been adopted by the miners up there, we have asked in every way, shape and form that they observe certain protocols with their exploration practice. They have completely refused in every way, shape and form. They have even refused to give us the data out of any of those holes that could be used in any potential water study of the area. The state minister facilitated a process to have a water study done. Some three years after the commencement of the exploration licence, 130 holes of the 300 holes that were supposed to be dug have already been dug and none of that information is available. The mining company operate on the basis that the information does not exist and, therefore, it is all right to assume that no damage will be done. The potential for damage during exploration is thus: the shallow aquifers become extremely polluted and sometimes up to 30 and 40 times the salt and mineral levels of seawater can go into the aquifers that are only some 20 or 30 metres below them, which are hugely viable and productive in crop production.

**CHAIR**—Is that because they do not align the hole? Do they put casing down?

**Mr Duddy**—No, they do not. They hold it back with bent knife. They do a process which is very similar to water exploration. However, in a day they go through, with a rotary rig, the area that is considered the overburden, which is the first 130 metres. They then put a coring tool on

and take three more weeks to do the next 150 metres for all the coal. So everything that is above the coal is completely immaterial. If they were to take an extra five days getting through the first 100 metres, there would not be the potential risk to the area. As I have said many times, if they destroy this water during the process of exploration, we will be faced with the situation where they will not have any resistance, because no-one will be able to remain there.

**CHAIR**—If it took five days instead of a day, what would happen in that five days?

**Mr Duddy**—They would use a different method. They would go down with a percussion rig and would see where the aquifers start and finish; they would case as they went through that period. Once they had hit an aquifer, they would case and then drill and case.

**CHAIR**—Why wouldn't the department of natural resources, or whatever it is in New South Wales, think that was a good idea?

**Mr Duddy**—Because we are sitting in a cash-strapped state that is desperate to get mining royalties and, the faster they can get them, the better off everyone will be.

**CHAIR**—I am sorry to trouble you with this: they drill these holes; have we evidence of the contamination of the lower aquifers?

**Mr Duddy**—Yes, we have. There is evidence—

**CHAIR**—Wouldn't that be grounds for a massive charge against either the driller or the government?

**Mr Duddy**—Under the New South Wales Coal Compensation Act and the Mining Act, there is no provision at all for any off-site impact. If we take a further tack, where we have a huge underground aquifer structure that is not understood and the water supply of a town is compromised or, indeed, vanishes completely, the mining company has no responsibility for that whatsoever. This is a grave situation.

**CHAIR**—What does the minister, or whoever, say when you put this to them?

**Mr Duddy**—That we are simply being obstructive. They have no regard for the environment.

**CHAIR**—What does the minister for the environment say?

**Mr Duddy**—The minister for the environment says very little.

**CHAIR**—Who is the minister for the environment in New South Wales?

**Mr Duddy**—I cannot tell you who the minister for the environment is state-wise. We have been to the director-general of that department, and that has just changed. We have been shut out of discussing it with the minister, but certainly the feeling from the director-General of that department was not that good.

**CHAIR**—So you would not be averse to our calling both the minister and the department before this inquiry then?

**Mr Duddy**—Not at all, and I would be very glad to be here the day that you were asking your questions. The process of exploration is supposed to be overseen by a DWE regional hydrologist. The project had been going for almost two years before anyone in that position actually fitted in there. There was not even a regional hydrologist employed; the position was vacant. Since there has been a regional hydrologist employed, not one hole has been inspected. Think of the potential worth of that water. I know that the states need mining royalties, but families have been farming that area for 173 years—and they are still farming it. A coal mine, no matter how it goes, has a 50-year lifespan. There is no line of co-existence in that area, because mining cannot occur in that magnitude without the destruction of underground water.

**CHAIR**—We heard yesterday about a mine in Queensland where they were going to draw 500 megalitres a day. Five hundred megalitres a day is a gigalitre a fortnight, which equates to 26,000 gigs a year. That is a bloody lot of water.

**Mr Duddy**—Yes. It is a third of Sydney Harbour.

**CHAIR**—What do they propose to draw out of this aquifer, given that it has already been mined by the farmers?

**Mr Duddy**—They will not give any figures regarding that. They keep saying, ‘Oh, we’re not going to touch the aquifer.’

**Senator NASH**—Is that not one of the issues: the fact that, with any of this going forward, there is absolutely no certainty there will be no impact on the water system?

**Mr Duddy**—That is exactly right.

**Senator NASH**—Given your opening statement regarding the amount of production that comes from that very small area of land, allowing any further steps forward with that mining significantly risks food production and food security.

**Mr Duddy**—Absolutely. Putting one use against another, prime agricultural land is being comprised. Uses change and we can use this principle: if we went back 50 years, it would never have been ploughed up for farming; we would still be raising sheep there. Basically, it is a kind of revolution. But the difference is that, if we went from sheep to cropping, we could still go back to sheep; but, once we go from cropping to mining, we can never go back to cropping.

**Senator NASH**—The chair has referred to an issue in Queensland that was raised yesterday at this inquiry. I asked the witnesses whether, on the basis of the evidence they had put forward, we should have a complete review of state and any related federal laws as they apply to mining. Their view was that, yes, we should be having a review. We had a discussion around the very fact that mining companies can simply go onto land and choose to begin their practices where that land may well be held by individuals. Perhaps, in hindsight, back in the early 1900s that might have been appropriate, but it was not now. So now it might be appropriate to review all those laws very thoroughly.

**Mr Duddy**—I think we need to have a centralised planning process where we have not a land use audit, as such, but an understanding of what appropriate land uses for particular soil types, climatic conditions and the like are. The only reason why the mining push is moving in areas like the Liverpool Plains is their proximity to rail. It has nothing to do with it being the only coal left in Australia and so that is what we have to use; it just happens to be the coal that is closest to the rail link.

**CHAIR**—That was Dalby, by the way. I got it wrong yesterday, so we will note that.

**Mr Duddy**—That is why it was the Haystack Plain.

**CHAIR**—They told us yesterday that it was 500 megalitres a day which is, say, 180 gigalitres a year. In an aquifer where licences have been issued, wouldn't one of the 'plain as the nose on your face' problems be that, if you were going to mine there, you should have a water licence if that is what is going to come out of the ground?

**Mr Duddy**—That is true; but there is only so much water in the area anyway.

**CHAIR**—When Neville Wran was the Premier and the bloke who died on the tennis court was the Minister for Agriculture—I have forgotten his name now—they deliberately took the decision to mine that aquifer and give it a life of 30 years. The local farmers jacked up and said, 'No, bugger it'—and, until recently, no-one had enough guts to do anything about it. They absolutely mined that aquifer. Can't we put a case also to the department of water and the environment in New South Wales that part of the problem with this mining will be the extraction of water from an aquifer already under stress?

**Mr Duddy**—Absolutely; I believe that to be the case. But I also believe that, as officers of the Commonwealth, you have a very sound space to intervene here because of our connection to the Murray Darling system. Because we are on a sedimentary flood plain that is at the headwaters of the Murray Darling Basin and with the Murray Darling Basin Commission and the laws that are associated with that, I do believe that you have land use powers that could be enforced to protect or prevent destruction of this kind of land.

**Senator NASH**—I know what the federal minister for water's response was to me during estimates but, as this relates to impact, have you taken your concerns to her and had any response?

**Mr Duddy**—In the last couple of days, she has been in Moree and she has said that they are going to do a land use atlas in that area. Surely, a land use atlas means that they are concerned about what the water is producing. If you then overlay on that the implication of a mine, food production is gone.

**CHAIR**—That is why we are here.

**Senator COLBECK**—You have give us some statistics about different products and their current production values, but do you have a general overall value?

**Mr Duddy**—Yes. It is \$332 million GDP annually.

**Senator COLBECK**—Have you seen any numbers on the projected outcomes from proposed mining?

**Mr Duddy**—Yes, I have. I cannot give you those figures, but I can give you the timeline in which one overtakes the other. Over 15 years, the mine doubles the profitability of agriculture; over 25 years, agriculture cuts even; and, with anything above 25 years, we go to the fact that agriculture actually overtakes the input to the nation from the mine. That was working on the inflated coal prices that existed in the last boom and, if you did it this year with the prices they are talking about with the new contractual arrangements, I think that would decrease considerably.

**Senator COLBECK**—The reason I ask that is that I recall a significant gas deal signed with China, I think, worth about \$25 billion, which was roughly equivalent to what we were earning out of the beef industry in a shorter period of time.

**CHAIR**—Four cents a litre.

**Senator COLBECK**—Yes. The life cycles of these things, I think, are important considerations, as well as the issues of food security.

**Mr Duddy**—Gas production—going to another mining purpose—does not completely destroy the whole landscape.

**CHAIR**—That is the exploration: drilling the holes and contaminating one layer of aquifer to another.

**Mr Duddy**—Yes.

**CHAIR**—What happens when the mine starts?

**Mr Duddy**—When the mine starts, they de-water the mine. They currently say that they will longwall and only mine on the ridges. Actually, they do not even say they will only mine on the ridges; they say that current technology does not allow them to mine under the rich alluvial flood plain. If you ask any engineer in the world, they will tell you that there is no such thing as waterproofing in nature.

**CHAIR**—That is what I would have thought.

**Mr Duddy**—If there is a mountain here and a mountain here, the side of which they are mining, and there is the plain filling in that area—so the plain is across here—and you have a big sandwich of aquifers, when they start digging in here the hill then starts to slide back and all those aquifers and contaminated waters that we have complained about start cracking and things start moving, just like with earthquakes. Then all that water becomes intermingled and the coal all becomes intermingled with the aquifers. The coal has sulphur and heavy metals in it, and that water then is no longer suitable for the purpose of agriculture.

**Senator NASH**—If we take all these broad principles on board and hypothetically were not going to allow mining in these prime agricultural areas, what percentage of Australia's land roughly would you see that as being?

**Mr Duddy**—About 0.4 per cent.

**Senator NASH**—If we reviewed some legislation around mining and perhaps went to this land use planning, and I cannot remember exactly how you termed it, or whatever—

**Mr Duddy**—Yes.

**Senator NASH**—that 0.4 cent, in essence, would be all that we would need to look at keeping mining out of, to be absolutely blunt.

**Mr Duddy**—Absolutely. You could look at some areas being dual purpose lands, because you can do certain things in certain kinds of country. In an area that is mined, such as Mareeba, they take the topsoil off and mine it, and put it all back down within a two-year period. They are in an area that has a 100-inch rainfall, and it is actually better when they put it back than it was when they took it away. But we are not talking about sedimentary flood plains that have been laid down in the way ours have been.

**Senator NASH**—For the purposes of food security, that would ensure that those particular prime agricultural land areas were designated for food production in order to ensure that we have food security in the nation.

**Mr Duddy**—Absolutely.

**CHAIR**—What have we learned from the Hunter? I can recall, probably 30 years ago, the O'Brien family from Krawarree at Braidwood had a farm up there and they thought they were going to get all sorts of rewards from mining royalties et cetera and they got completely duded. What is the history of the aquifers et cetera with the mining in the Hunter?

**Mr Duddy**—The aquifers in the Hunter are nowhere near the volume of our aquifers. The Hunter Valley is a very limited area of very fine quality country, which is basically the river flats that have underlying aquifers. But, once you get into the ridges in the Hunter Valley, there is no water, no recharge—no nothing; it is very poor quality country. You have those very good areas that stick close to the river. Initially, the mining company said that they would never touch those. Now they have all been dug up and turned over and all the underground water that is there, as limited as it was, has been completely destroyed. A lot of the dairy projects that were left to be used as examples of mining co-existing with dairy industry lasted less than 18 months; they ran out of water.

**CHAIR**—Could you provide this committee with contacts and/or details of that? I think you learn from history.

**Mr Duddy**—Absolutely. I can email this committee a list by the end of the week.

**CHAIR**—We would be happy to talk to people who have been through all of that.

**Senator NASH**—If the committee is agreeable, I think it would be quite useful to go out to Liverpool Plains and have a look.

**CHAIR**—Yes. I think we might pay you a visit.

**Mr Duddy**—We would be very grateful to have you. We will turn on a lunch for you from produce that has been grown off the plains.

**CHAIR**—No, we will not be bought off—certainly not with a lunch anyhow.

**Mr Duddy**—Serving you lunch is not buying you off.

**CHAIR**—Senator O'Brien?

**Senator O'BRIEN**—I am content.

**CHAIR**—Senator Colbeck, Senator Nash?

**Senator NASH**—No. I think I am fine; thank you, Chair.

**CHAIR**—We are very grateful to have had the opportunity to have you here. We are very troubled about the global food task and where Australia fits into it. Obviously this fits perfectly into the terms of reference of what we are about, so you will hear from us.

**Mr Duddy**—We would be very grateful to have you visit.

**Committee adjourned at 3.21 pm**