REPORT OF PROCEEDINGS BEFORE

STANDING COMMITTEE ON NATURAL RESOURCE MANAGEMENT

INQUIRY INTO CURRENT DISINCENTIVES FOR ECOLOGICALLY SUSTAINABLE LAND AND WATER USE

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At Sydney on Tuesday 21 February 2006

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The Committee met at 10.00 a.m.

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PRESENT

The Hon. P. D. Allan (Chair)

Mr R. S. Amery
Mr G. J. Aplin
Mr I. M. Armstrong
Mr P. R. Draper
Mr G. F. Martin

DIANA MADELEINE HELEN GIBBS, Chair, Regional Communities Consultative Council, Junee Reefs, New South Wales, sworn and examined:

CHAIR: Diana, thank you for appearing before us today. We are very happy to hear your evidence. I am advised that you have been issued with the Committee's terms of reference and also a copy of the Legislative Assembly's Standing Orders 332 to 334 that relate to the examination of witnesses, is that correct?

Ms GIBBS: I have, yes.

CHAIR: We have received a submission. Is it your desire that that submission be included in your evidence?

Ms GIBBS: Yes, it is. Thank you, Madam Chair and members of the Committee. It is with great pleasure that I am here today to represent the views of regional communities. I think the role of the Regional Communities Consultative Council [RCCC], I hope it is well known to you all—I have left some information with your Chair. I think the council is vitally concerned with regional communities. Our charter is to advise the New South Wales State Government on the impact of policies, on opportunities for new programs and policies, to advise on access to current policies and to advocate change that we think will improve the well-being of rural communities. So from that basis we put in a submission in July 2003.

As I will say in response to some of your questions later, a lot has changed since we put in our submission, but I think our basis, if I could just restate that, is that rural communities do recognise that our land and water assets are the foundation of everything that we do. They are vital assets and therefore the well-being of our land and our water is vital to us all. Our view is essentially is that we know these assets have to be nurtured and that the science has been flawed in the past. We do not view New South Wales Government policies in any negative sense but we do need to recognise, I think, that there is a social and economic dimension to natural resource management. We cannot just see it as a biophysical thing; there are people living out there, and so any changes to our land and water assets must recognise the people.

Communities exist and their existence might be based on this flawed science but we cannot fix those areas without considering the communities in both a social and economic sense that have evolved as a result of that flawed base. That is really all I want to say. Other than that, I rest on our submission.

CHAIR: We have got a large number of questions and there may be some that people are more interested in asking than others or they will have their own questions as well, but we have provided you with a list of those questions. Can I start off with the one you got already, number one? Many submissions that we have received have indicated that natural resource policy and legislation is too complex, that it penalises farmers who are good environment managers, that it discourages involvement in sustainable management practices and fails to build co-operation within and trust in government agencies. Do you agree with this and if you do what would your suggestions be to improve this situation?

Ms GIBBS: Perhaps I should preface my reply by saying I am professionally an economist so I am probably going to say yes and no—a good economic answer. I think a lot has changed since we put in our submission. For example, and perhaps most obviously, the introduction of the catchment management authorities, which has been an excellent development. We would not suggest that the policy and legislation is too complex but it is a lot for people to get their minds around. It is very new; there is a lot of discussion about voluntary property management plans. People do not know what their options are. It is a lot happening at once. So it is not too complex but we do need to make sure we have a very good transition period with a lot of consultation.

In terms of penalising farmers who are good environmental managers, no, I do not necessarily agree with that. I think our submission talked about the other side of that, that some of the exceptional circumstances assistance perhaps encouraged nonsustainable practices. No, I think the legislation now does actually encourage good environmental management and therefore the involvement in sustainable management practices that goes with that. Fails to build cooperation and

trust? I think that is a bit harsh. As I said, it is all very new; there is a lot of it; it is hard for people to get their minds around everything. That comes with time.

CHAIR: Just to take a case in point, the total catchment management authorities, we would be interested in your objective view about how you think that is all going.

Ms GIBBS: I must acknowledge at this stage I have had long discussions with Michael Schultz, who is our environmental representative on the council, and he is actually a member of the Murrumbidgee Catchment Management Authority, so I rely on his opinion there. Personally I have been aware of some of the other catchment management authorities. I think they have been a terrific development for a number of reasons: firstly, you are using local expertise to deal with local issues. I think our submission talked about the need to find local solutions. I think, secondly, it provides a very good mechanism for consultation with local people so that the information can filter down to the local level. The catchment management authorities with the way they have been structured, their focus on developing long-term regional plans is excellent. I think the advent of the CMAs have answered a lot of the concerns that we had expressed in our submission.

Mr GERARD MARTIN: Just in relation to financial aspects, and you hint on it a couple of times through your submission, in terms of quantifying sustainable environmental practice in dollars and cents—we all understand the spirit of that but it is very difficult to actually quantified and get all parties happy—do you have anything to add on that as to a mechanism, if you like?

Ms GIBBS: I wrote my master's thesis on this.

CHAIR: Give us a précis.

Ms GIBBS: This whole question of unpriced values, which is what we are talking about here, is very complex. Market prices are not necessarily reflected in environmental values. However, in the longer term the returns that are derived from land management will demonstrate the value of good environmental management. You cannot rape and pillage the environment and expect to continue to make money out of it. In the short-term you might get away with it; in the longer term the fact that farmers are still productively involved in their land, surviving financially, will be a result of good environmental management. So in the long-term the dollars and cents will be there; in the short-term, yes, it is very hard to say, the fact that you have looked after your streams or looked after your remnant native vegetation, it is very hard to quantify an economic return to that.

Mr GERARD MARTIN: Just an allied question. You also talked about the communities' fear that the change to more ecologically sustainable systems is underpinning their financial security. Is that a major fear in this field that it may impact on their income or their property values or whatever?

Ms GIBBS: In the short term, absolutely. I suppose it is the old conventional wisdom that people do not like change. I would suggest people do like change but they do not like being changed. If it is their decision, that is okay; if it is somebody else's decision, then it is difficult. I think the CSIRO document talked quite a lot about autonomous structural adjustment to market forces, for example. With globalisation and market pressures people respond to those changes quite easily because that is their decision. I think when government comes in and via policy change expects changes in their land management it is more difficult. When they gradually come to understand the issues involved I think we have with the CMAs moved dramatically away from the very adversarial role that we had before between the environment or farming. I think it is part of an education process; people gradually get to understand that in the long-term there is no difference between economic sustainability and environmental sustainability, but it is a matter of timing.

Mr RICHARD AMERY: In relation to some of the questions that have been given to you and also some of the submissions of the CSIRO and I think your own paper, there is a general theme that government assistance, Federal Government exceptional circumstances, State Government transport subsidies and so on rewards those who are so-called bad managers and does not reward those who have been planning and factoring in drought. How you feel the trend is? We have gone down this path before and the first big drought hits and the repercussions of it hit the media and so on and of course we then go back to the old practices of subsidies and so on.

How do you think the trend is now? Do you really feel that the type of assistance that is given out both through Federal Government exceptional circumstances, State Government subsidies and so on, is well supported by farming communities or should we be investing in spending the money a little bit wiser or smarter or perhaps rewarding the people that many submissions and many organisations say are put out by the rewards to the so-called unproductive and poor planners and so on?

Ms GIBBS: There are always ways of doing things better. I think the problem has arisen that I think the farming community itself is split on this. Some people are saying, "We need assistance. We have not had any income for four years", and the other part of the farming community will say, "Well, you plan properly for it, you cope with it, and the people who cannot cope should not be in agriculture any more. Let us help them exit gracefully and with dignity and leave it to the innovators". Drought is a fact of life. Down in Junee Reefs where I live we have just had the best harvest we have had for the other four years put together, I think, because we have finally got some rain.

You cannot drought proof your property but you can drought proof your business, and I think that is the difference. Agriculture should be seen as a business and you take steps to plan for that: you go to your bank for more finance. I think if a bank is prepared to support you then other forms of assistance should also be available. I am thinking of the interest rate subsidy assistance, for example. I think a good criteria would be there. If your financial support thinks you are a long-term prospect then that sort of subsidy certainly helps.

Secondly, droughts do not affect just farmers; droughts affect rural communities. If farmers are not spending money, because they do not have it, then the local machinery dealer has problems, the local stock and station agent has problems, the chemical supplier has huge problems and it flows down even to the checkout girl in the supermarket. Farmers are the engines that drive a lot of rural economies. There are others, but if farmers do not have the money then rural communities do not have the money. Any sort of assistance should take into account, then, not just farmers but small business generally. It should take into account the long-term viability of that farmer—and I think banks are probably a good way of judging that; they are as tough as anybody.

Thirdly, we need to have a more holistic approach to land use and planning in this State. We have no natural resource strategic plan and we have no land use strategic plan for this State. We need to start asking some of those difficult, long-term questions: What is agriculture going to look like in 10 years time? What sort of agriculture do we want? How are we adjusting to climate change? How are we going to balance residential land use with farming in the western suburbs of Sydney, for example? Two billion dollars worth of vegetables are grown in those western suburbs. If we put them all under houses, where is that food going to come from? My apologies. I have digressed from your question, but I think what we need is a long-term view, rather than the band-aid solution. A lot of people talk about building barricades to stop people from falling off, rather than building ambulances to pick them up from the bottom of the cliff.

Mr RICHARD AMERY: I apologise for having put it that way, scanning a couple of questions, but it is one of the things that governments have wrestled with for many years. It is not a matter of trying to not spend on farming communities affected by drought; it is how we spend the money that is important. A lot of scientific reports—CSIRO and sometimes your own organisation—appear to push us in that direction. Then the drought hits and everything blows up again, and we go back to many of the traditional ways of allocating money.

Mr GERARD MARTIN: You said something that I think is probably related to what we are talking about. With regard to land use planning—and I am sure my colleague the honourable member for Lachlan is undoubtedly getting plenty of submissions about this at the moment—most councils in New South Wales are now going through the process of developing a new local environmental plan [LEP]. I guess that is really putting land use planning on the local level. Do you consider that to be an efficient way of going about it, or are you talking about a broader template for the State? One of the really hot issues relating to the viability of farmers is the argument about retaining viable agricultural land, which is linked into the environment, and the right of the farmer to subdivide. A figure of 400 hectares has emerged as the favourite of some of the bureaucracy to be the minimum amount one can subdivide. How do you see that playing out in this background, attempting to get a sustainable environment?

Ms GIBBS: Let me deal with the easy one first. I think to come up with any one figure, whether it be 400 hectares or something else, is not helpful, because 400 hectares might be a good living area in the Illawarra or on the coast but I do not think you could survive on that at Broken Hill. Again, we need local solutions to local issues. But back to the bigger picture, I am familiar with what is happening with local councils because I have recently been appointed to the Independent Inquiry into the Financial Viability of Local Government in New South Wales and I realise the load that is being put onto local government. What I am really talking about is bigger than local government. While local government certainly has a very good input at the local level, and quite rightly so. That is the job of local government. I think that what the state needs to grapple with are some of the bigger picture issues.

For example, I was working with the development bodies down in the Illawarra and on the South Coast. The big issue there is: How do we reserve enough land to make sure we can provide jobs for people—not just industrial land but commercial land, land for nursing homes and whatever—rather than it all going to the instantly best use, in financial not economic terms, which, of course, is residential subdivision? We need to think beyond the next three-year term of local government; we need to think beyond the quick return to a land developer. I think it really becomes a responsibility of the State Government to look at some of those more strategic issues as to how we best use our land, and our water of course.

Mr GREG APLIN: In your submission you stated that government support for the establishment of third-party investment in natural resource management is believed to be low. Given that government funds programs such as Land Care and the Natural Heritage Trust, the Living Murray initiatives and the Salinity Strategy, why do you think landholders do not have a sense that government invests in natural resources, and would you say that government is targeting the symptoms of unsustainable natural resource use rather than the systemic causes?

Ms GIBBS: There are two parts to that question. I think I have already addressed the second aspect. A lot of past policy certainly has been looking at addressing the symptoms and not the causes, but I think I have addressed that in some of my earlier answers. In terms of the first part of your question, I think that is a very good example of the fact that a lot has changed since we wrote that submission. In July 2003 catchment management authorities [CMAs] had not been discussed. There were a lot of rumblings and people were thinking about their water allocations being cut back. I think a lot of that has changed and the attitude is perhaps quite different now. It is an ongoing process; it will get better. I think that communities generally do see governments as being far more supportive, but I would still stress the need for a long-term view rather than just a year-by-year solution.

CHAIR: You mentioned the banks and how well placed they are to assess these issues. Do you have any ideas in relation to question four? You stated in your submission that sustainable environmental practices must be able to be quantified into dollars and cents so that we can get a view of this. How do you think the banks do it, if they are doing it? Are they doing it and what sorts of triggers are they using? Do you have any suggestions about how we can determined value?

Ms GIBBS: That is the question that Mr Martin raised earlier. As I said before, in the longer term there is no difference between economic and environmental sustainability. People will still be there if they are environmentally sustainable. In the short term it is harder and I think the criteria—being married to a farmer and having had several discussions with banks recently—I think the banks form a more subjective view as to whether they are investing in people. In the farming business the people are the business and I think they are making a subjective judgment that they will continue to support certain individuals because they think—I do not know what they think, but they obviously think it is worth investing in them; that they are a good risk.

CHAIR: We are talking about institutions that have massive resources. In the talk that they talk are they reflecting any of the debate or discussions we are having around the table today? Have you picked that up at all?

Ms GIBBS: I think some of them certainly are. I think banks are beginning to realise that agriculture is not just, hopefully, a business in terms like money; agriculture is a business that really is a land manager and investment in a farm is a long-term prospect. It is not like buying a corner store

and then selling it. Farmers that get support from their banks are farmers that tend to discuss their longer-term plans with their banks. I can only speak from our own experience that our regional manager loves to come out and see how the farm is looking in good times and in bad times. That is just part of his subjective judgment that, "Gosh, you have put in 2,500 trees this year. You are thinking ahead." I cannot give you any quick fix to this.

It is a very long-term problem. We have had, after all, only about 150 or 200 years experience as to how to manage a very unique and very fragile environment, and imposing European farming practices, as we have done, has perhaps not been the best way of doing it, but we are learning and we will continue to learn and improve. We can look back on, say, the development of the Murrumbidgee Irrigation Area [MIA], which was only about 80 years ago and think: How could we have done such stupid things? But, with the best available science at the time we did it. We opened up the interior for our returned soldiers and we produced water. Water is the classic economic example of a high-cost but low-priced resource. We thought water was limitless; we thought we could give away the water and we created a social and economic structure in the MIA. Now we can look back and wince at how ignorant we were.

What we are trying to do right now is take steps to fix that. It does not happen overnight and in another 80 years time I am sure people will look back to the present day and say, "We still did not know. We still had it wrong." All we can do is try to think as long-term as possible and recognise, when we are trying to fix things, that that cannot happen overnight. We need a transition period. We need some help for people who cannot cope with the changes, to allow them to exit the industry. I will go back a step with Economics 101 and our efficiency argument. Anybody would say, "Water should be used to its best possible use. Let us all grow grapes instead of pasture." I think the CSIRO talks about that. That is the economic rationalist's viewpoint, and that is all very well, but it ignores the equity issues. If we all suddenly became grape growers the price would crash and it would not be the best return after all. We cannot all change quickly. Some people can cope with sudden change; others cannot. We need to make sure we look at what is happening to regional communities and plan more holistically than the sort of silo mentality of just looking at issues one-by-one, because everything interacts.

Mr GERARD MARTIN: You are obviously aware of the musings, as we all are, of the very eminent Wentworth Group. Particularly talking about the health of rivers, that group feels very strongly that the environmental factors should be considered first, and economic and social issues down the track. Do you think that is good reasoning, or is it too simplistic?

Ms GIBBS: I agree entirely with the Wentworth Group statement that there is not enough water to go around. That is very good recognition, because the way we have been operating assumed that there was. I will start with that. I completely agree with them there. Yes, in a long-term sense that group is absolutely right. If we do not get the environmental health right we have nothing. We cannot carry on using our land and water if they are not managed sustainably. However, that does not mean we can ignore the social and economic issues. To me they are all tied up together. That is why I say that we do require change but we cannot just focus on biophysical issues. We must look at the social and economic issues at the same time and we must look at the future of rural communities, rather than just focusing solely on the environment because that is the most important. It is not easy.

Mr GERARD MARTIN: You made some comment about the catchment management authorities. You specifically said that the solutions to this have got to be local and all-inclusive in terms of community. Are you reasonably happy with the current structure of the CMAs within the catchment areas? Is that a pretty good way of doing it? Given the current structure, are they inclusive of the local community and will they come up with local solutions with regard to catchment areas?
~break/Jarka

Ms GIBBS: They will operate a bit differently but if I can make any sweeping generalisations I think they have been a great initiative. I think to involve local expertise, local knowledge has been excellent. I think the charter that they have been given, and particularly working with Landcare groups as well, the charter they have been given to prepare long-term catchment action plans is terrific because that is a 10-year program at least. So it is not just the quick fixes, and I think that the different skills that are brought together around the table there enable some of these trade-offs to be debated. I think in terms of communicating and consulting with the community, there is perhaps

still a bit of work to be done there. They tend to operate on their own and a lot of people might not know they exist, but I am sure that will change. But generally I think it has been a great initiative to look at that catchment basis for planning.

Mr IAN ARMSTRONG: Much of the debate these days is based on two things and a while ago you covered local environment plans, the size of viable blocks and so forth. It is an interesting one because historically I guess it is fair to say that some people can be viable on 50 hectares—a greenhouse or something—and others are not viable with 10,000 hectares. The topography of very few of our shires is the same; it varies enormously. So to have a single template would seem to me to be a rather impossible dream to achieve that. What I want to talk about is the Wentworth Group and the environmental needs of river systems and the maintenance of environmental flows. I just put this to you. We are now just coming through—hopefully finished—a four-year drought. I guess that the bulk of inland New South Wales would have had dry rivers for the last two years in a natural environment. The Lachlan River where I live, there certainly would not have been any flows at all for the last 12 months, and certainly in the last few months the migratory fauna, including marsupials, just has not been there. So when we talk about environmental management by having environmental flows out of season for a start and maintaining them in adverse seasons, when nature never intended, I am not too sure whether we are actually managing. I am just wondering what your opinion is on this sort of thing.

Ms GIBBS: I think the fact remains that Australia has a very variable climate; you cannot guarantee anything in terms of the climate. So yes, I would agree that ensuring environmental flow at all time is not realistic and it is not helpful. I think we should also be mindful of the fact that we have enormously changed the environment. In my work in the timber industry, for example, the river red gum forests at Barmah are used to having a winter flood. That is the way red gums have evolved. They want a winter flood. What do they get? A summer flood because that is when all that water is being released down the river. So yes, it is flowing but it is actually not the season that the trees have evolved to cope with. So we have made all sorts of changes.

Dare I say it, some of the more green-minded politicians see maintaining river flow as the be all and end all because it sounds great. We would all say, "Yes, let's keep the rivers flowing." That is not what they do. Rivers do not do that all the time. So again we just need a balance in everything. When we are looking at the way we use a very scarce resource, namely water—Australia has an incredible reputation internationally as being very sensible land and water managers. We can export our environmental knowledge because we have had to learn. We have such a limited resource. It is not as easy as saying, "Great, let's have the 80th percentile flow at all times. Aren't we all good?" That does not really help. Again I keep saying the same thing: We need to take a very long-term view. We do not have a very long data set for this country. We are learning all the time, and we will keep on doing that. There is no sort of absolute to say, "Great, we have got it right now." We will never have it right. We can just keep improving.

Mr GREG APLIN: I think you touched on this a little when you referred earlier to grape production. One of the aims of the reforms process has been to move water from the lowest value use to the highest value uses. How do environmental allocations fit into this framework? How is the value of environmental water determined?

Ms GIBBS: The easy answer is of course the market will decide. I will give you some examples of that. I remember one of my meetings with our previous Premier. Mr Carr said, "I can't understand why you're not all growing grapes. I have looked at these figures and you can get $2,000 per megalitre instead of 20. You should all be growing grapes." I said, "Terrific, and if we were all growing grapes what do you think the price of grapes would be?" Again, you need to take this holistic view, to look at everything. If something is a high price, that is because it is scarce. That is what price is; it is just an equilibrium between supply and demand. So yes, that is the efficiency argument. We should put everything to the highest value.

We have some good examples though whereby the environment benefits are gained from that. Murray Irrigation down at Deniliquin have done very well where they put some—they had some water that they could sell for whatever they wanted. They actually kept it for the environment. They have done two things. They have kept some water for the environment. What they have also done is from their allocation which was for the environment they actually decided—shock, horror—to sell

some of it to farmers because then with the money that they generated, real cash folding stuff, they were able to do a lot of environmental mitigation work, which again by taking this long-term view they have done very well out of treating the environment as a market and allocating water accordingly.

Back in the dim dark ages when I was at university I remember we looked at the Colorado River, because the Colorado stopped flowing. It just did not get to the sea any more. In California they cut back irrigators licences enormously. They also increased the price enormously so the ones who could not cope vanished. But what some very smart farmers did was to say from their remaining licences, they would sell it to towns for urban water. So the best economic use of that water was actually to sell it to a town. So the farmer had cash income. He did not have the water but he had some money to go and do something different with his land or a different business altogether. So the environment can be treated as a market because what you are paying for are the products that the environment is delivering for you.

Mr GREG APLIN: I notice one of the concerns is that the trading, for instance in the Murray, is frequently from upper Murray to lower and that is starting to concern people. Do you see any long-term effects on societies as a result of those trades and the economics and the general thrust I suppose of the production from the area?

Ms GIBBS: There will definitely be impacts. Whether they are good or bad is really the question you are asking. If the lower Murray, with grape—I presume you are talking about grape development around Mildura and things—

Mr GREG APLIN: Yes.

Ms GIBBS: Yes, if they can pay the sort of prices they are paying, then everybody is happy. The upper Murray people have compensation effectively; the lower Murray people have the water that they think they can convert into wine and justify that cost. How sustainable that is in the long term is of course another issue. Then we have to look—you could keep an economist busy on this for ages—at the spin off, the externalities if you like of that water coming on down the river instead of being taken off earlier. The Barmah forest would benefit, for example, if it is going on down. I guess what I am trying to say is that we are dealing with an ecosystem. It is not like a car; when you turn the wipers on the wipers work. With an ecosystem if you turn something on you think, "I didn't mean that to happen." The deep greens talk about Gaia, that our world is this entity called Gaia that will always adjust itself. Whatever you do to it, it will adjust in some other way. That is what environments do. We do not understand the science of how we have been tinkering with it. We came here to a very dry continent that was a sea bed—the soils are full of salt—and we said, "Let's do everything that we used to do in Europe." We got away with it, sort of, but there have been a lot of costs that we are now grappling with. I mean, 150, 200 years is nothing.

Mr GREG APLIN: The cost of the water sold downstream or the quantity extracted will in fact, for that amount that is paid, be greater than the amount purchased because of seepage and evaporation. How do you equate that with losses to the environment?

Ms GIBBS: I will leave that to the scientists as to how they work out all those losses and things. But from a market perspective, if the people downstream are prepared to pay whatever is considered to be a fair price and if they factored in all those losses, then the market is saying, "I'm happy with that. I can afford to pay that sort of money."

Mr RICHARD AMERY: I have a question based on question 13 about the Wentworth Group saying that the reforms provide an opportunity for an environmental purchaser to acquire water. ABARE said that a call option allows environmental water to be purchased from irrigators at specified periods. There has always been a debate about whether the Government or whatever should just buy the water and retain it for environmental purposes. There is a bit of a political debate going on down in the south west of the State when I think National Parks purchased a large beef producing farm and was going to put it back into national park for environmental benefits. In other words, we are buying something that was originally an economic generator and turning it into an environmental asset for the State. Do you have a fundamental agreement or disagreement to that principal of buying a resource which was previously used for economic development and transferring it to an environmental

source? It is probably a better way of winning the compensation debate that we are having with the farming areas. Can you comment on that?

Ms GIBBS: As in everything, there are always trade-offs, and I am sure the irrigators would say, "No, we need to keep agriculture and we must have farmers using water." I guess I would say not necessarily. Everything changes. You touched on the issue of compensation. I think for the Government to buy back licences is a very good form of a sort of de facto compensation for people who want to exit. Then government, as a representative of the community, can decide on the most appropriate allocation of that water. So I will give you a tick for that one. What has happened though, and perhaps something we have not touched on this morning, the focus over the past few years—the fact that water is very limited, that it has been overallocated and that people will be restricted—has had one perhaps unforeseen effect of waking up all those sleeper licences. There was a lot of water that was not ever used, and that was great. Everything carried on happily. But suddenly, first, people are just more aware of it, and, secondly, water is becoming more valuable. So the intent to reduce water use has perhaps had an unforeseen effect of actually increasing water use because this water that was already allocated is now being used.

So the issue of sleepers is difficult but the compensation by buying back licences is good. I think local government is grappling with the fact that the value of land or the property rights from land and water are being separated and therefore the values will be separated as part of that process. The value of the right to access the water—I am sure all farmers would agree that they know they do not own the water. What they do think they own is the right to access water, and that value has effectively been capitalised into their property, which might be their superannuation. So to suddenly take away that value would not be good. It can be done gradually with the transition period I was talking about, but we need to ensure that things happen slowly, people can exit if they want to. We are all more aware of the very limited resource. Government can assist that process by buying back licences and then government can decide whether for regional development purposes a particular industry should bid for that water or whether it should just be kept for environmental flows. That is the Parliament's decision as representative of the people.

CHAIR: I note that you get the opportunity to advise the Minister for Rural Affairs. I hope he listens carefully.

Ms GIBBS: Mr Kelly is a great supporter and his door is always open.

CHAIR: Would you mind answering some questions on notice?

Ms GIBBS: Sure. That would be helpful because then I can put that in front of the whole council. As I said, the role of our environmental person, Michael Shultz, is to help the council with those things.

(The witness withdrew)

PAUL MARTIN, Professor and Director of the Australian Centre for Agriculture and Law, University of New England, Armidale, affirmed and examined:

CHAIR: I am advised that you have been issued with a copy of the Committee's terms of reference and also a copy of Legislative Assembly standing orders 332, 333 and 334 that relate to the examination of witnesses. Is that correct?

Professor MARTIN: That is correct.

CHAIR: We have received your submission. Is it your desire that that submission form part of your evidence?

Professor MARTIN: Yes.

CHAIR: Perhaps you would like to speak to the submission.

Professor MARTIN: First I would like to highlight that in dealing with some of these issues there is a world of difference between what is technically correct and what individuals, me included, might wish to be other than what it is. Some of my comments in terms of the issues can be read in a political context as being in favour of a particular position. All I am trying to do is state that this is the position as it currently stands, or as I understand it to be. In relation to the law particularly and environmental law and some of the contentious issues that are current, the key point I would like to make is that our regulatory system at the moment, and out institutional structures, are in an appalling state. There are over 250 separate statutes governing natural resources in Australia, and that is without local government and without regulations.

New South Wales probably is marginally worse than most.

We did an investigation of one estuary, Port Hacking, and there were roughly 30 separate instruments, plans and regulations that are meant to be applied. The consistent pattern I could find was of selective application. This leads to my basic proposition that we have reached the stage where the rhetoric is that the Government decides the policy and the legislation, the agencies give effect to it, and the law is not an actor but a tool. The reality is that effectively and, unfortunately, the law increasingly is a prime actor in what is going on. The transaction costs are inhibiting so many things that, regardless of whether you are strong green, strong production or strong something else, we would say the outcomes are not aligned consistently with what people understand the policy to be. That broadly is the issue I am here about. There are other issues I would be happy to talk about, but that is the prime one.

CHAIR: The obvious question is how does it matter. Does it matter whether we have a plethora of statutes that are selectively applied? We are interested in consequence and how to advise on change and improvement. What does it matter?

Professor MARTIN: You want some specifics. I am happy to answer that. That is the right sort of question to ask me. Take for example the implementation of voluntary environment management systems [EMS]. Here you have that people who are trying to do the right thing, who are genuinely committed, who decide that they are going to go down the track of implementing an EMS. Under the ISO 14001 structure they are meant to put in place a system to identify and to keep up to date with, if you like, their legal requirements. A couple of people I have spoken to who have attempted to do this and who have persisted to the end have spent amounts like $5,000 and $6,000 then, virtually as they walk out, the solicitor, quite rightly, says, "Well, of course, you know that tomorrow this may be inaccurate; that the rules are, of necessity, changing continuously." That is one example.

In the case of looking at urban environments, and I will pick on estuarine protection, I believe that estuarine management plans are meant to implement the whole plethora of government policy.

If you look under a prior structure, for example, when there were quite specific rules about discharge of effluent and various receiving waters, those rules were not being applied and there was no pressure for them to be applied because agencies selected. If it was too difficult they basically would go quiet on that issue for a while. The community's belief that they are getting implementation of laws that are passed is just not right. The final thing, as a basic principle of justice and equity in society, any person should be able to identify what their legal obligations are if you expect them to comply, and at the moment they cannot. It is just not possible for most people to do that. It really is something that this Committee should be serious about. It is a pretty fundamental issue.

Mr RICHARD AMERY: That is a really good opening bouncer, the fact that so many States are overregulated. There have been a number of red tape reviews and they go on all the time—repeal of legislation, and rewrites of the Water Act and the Native Vegetation Act. Although I think your criticism is a fair one, first, is it getting better and are we heading in the right direction? Second, are you arguing that too many governments are involved? I have not even touched on our local government. Are you saying that natural resources should be some aspects of Federal, State and local divisions and authorities, such as Defence and Social Security, which primarily are Federal? Should natural resource be a Federal responsibility or should it be a State responsibility? Should the Committee recommend the streamlining of our regulation and legislation, or a fundamental shift in the way it is managed?

Professor MARTIN: Your first question about whether it is getting better, I cannot answer that because I do not know. Obviously, primary producers say it is getting worse. A lot of environmental groups say that it is getting worse. But I have no objective basis for saying whether it is getting worse. In some States, such as South Australia, they have made a serious attempt to restructure the basic regulatory framework. Queensland has introduced, for the first time in Australia, I think, the concept of a fundamental duty of care to the environment. There are things happening. To jump to the "What could be done about it?" sometime ago we wrote a paper called a "Cartography for Natural Resources Law for Australia" in an attempt to map what was going on and think about what you possibly could do about it. My mind went back to the companies code, the corporations code. Prior to the corporations code we had a not dissimilar mess in the regulation of business activities. We had a plethora of Federal and State and confused responsibilities, different administrations and different structures.

If you look at corporations law today, for all its limitations, there really are only two statutory frameworks covering behaviour of business in Australia. There are a lot of bits and pieces around the edges, but, basically, we have the corporations code, which is implemented through a cross-delegation arrangement, a Federal negotiation to have unified structure across all States with the Federal Government taking a particular role on certain parts. That statute does a number of really fundamental things that parallel what, I think, should work in natural resources law. First, it sets up a very clear indication of responsibilities of directors and officers not only with respect to the Government but it also sets the standard that other private citizens can use to take civil action against them. If a director does not act honestly, diligently and in the interests of the corporation and if the Government does not act, the shareholders can. It does not always rely upon the Government. That is one of the things the law does, it sets a framework for civil as well as court action.

Second, it sets up some very clear accountability mechanisms. It is not all this wishy-washy "you breach something and someone is going to come around and maybe you will get caught". There are structured reporting systems, there are audit frameworks, there is the expectation of audits and there are severe penalties, including the penalty of being deprived of the right to manage, which is a severe penalty. You have this statute going down one track, which is all about the Government's framework for corporations, using Federalist model. Alongside that you have another Federal statute that is also partly mirrored in State statute, which is the Trade Practices Act. What the Trade Practices Act does fundamentally is regulate standards of behaviour of various sorts. Again, it provides very clear broad frameworks within which a number of other things can happen.

The difficulty we have with environmental law is that in Queensland, for example, there are reported to be 29 separate versions of implementation of sustainability principles. For the precautionary principle there are at least three major separate definitions of what it means in Australia. What the corporations code model would force is that we would have to boil down those principles. We would have to refine them into a set of fundamental principles that would need to be applied and

then we would have to embed them strongly, instead of making this "a bit here, a bit there", a change here and a change there. It would take 10 years to do, but it does have to happen. It absolutely has to happen.

Mr IAN ARMSTRONG: Would it be fair to say that the complexity and the legality of many of those laws are well beyond the comprehension of the average local government and/or its technical staff, and much of the litigious processes taking place in many areas across New South Wales at the moment is the result of clarity and finality in the formulation of those regulations and laws, and a lack of being able to interpret the practical application?

Professor MARTIN: Broadly I would agree with you, but I would not limit it to local government. It is extraordinarily hard, even for a lawyer who concentrates in this area, to understand what the law is. There are things which are written and you read it and say, "That is absolute garbage", but others probably read what I write and say it is garbage as well. But a lot of the law is terribly unsettled in the whole system and part of it is, of course, the intrinsic nature of the natural system but part of it is a lack of a disciplined structure in the creation of new laws and the implementation of those laws.

I will give you an example. If you wanted to design a policed statute to fail—you wanted to design one not to work—the first thing you would do would be to design an instrument which has very complex evidentiary requirements to capture the individual and capture evidence of the offence at the point of the offence. I would set it up so that the win-lose arrangements is one such that if the perpetrator can find a technical error and get out of it, I, the agency, carry all the costs and I get none of the economic benefits if I win. That is the sort of model you have if you want it to fail. That describes most of our environmental regulations. It is a model designed to fail. The evidentiary structures are so costly and the agencies are so underresourced, and we cannot afford to resource them to implement the laws as designed, so these structures are economically irrational.

Mr GREG APLIN: From your submission you would be arguing for institutional reform that improves cost effectiveness of government, develops sustainable businesses, and establishes conditions for system-wide shifts and sustainability. Can you tell the Committee what you mean by system-wide shifts and how would you describe the new institutional arrangements that could deliver more sustainable landscape use. For example, would there be a need for more property vegetation plans [PVP] and other environmental instruments under the reforms that you propose?

Professor MARTIN: I will put the PVP one aside for the moment and come back to that. I have just described a preferable regulatory structure. Now with that regulatory redesign there would be a radical restructure of institutions required. Once you change the regulation framework, clearly you change their responsibilities, you would have to reduce the number of players, and you would have to get them implementing broader rules with specific regulations for specific industries or particular activities. That would follow naturally once you got the regulatory framework done.

The second thing that we need to do, which is a big ticket item—if you have read the intergeneration report or the recent Productivity Commission work on health, you will see that we are heading into, very rapidly, a period where both Federal and State governments will have tighter and tighter budgets and will potentially go deeper and deeper into the red so that the governments are going to have enormous difficulty even implementing the existing framework, just meeting what they are doing now, because environment agencies will be competing very directly against health care, aged care and all those things and the number of dollars will be less.

So the second institutional reform we have to attack is we have to shift the focus away from taxation-funded, government-funded implementation of natural resource management. At the moment what is happening—and PVPs fits somewhere in this—is we are replicating the model which says that the fountainhead of all the funds flow, for natural resource management, will be the government purse. We try to provide incentives and we talk of compensation—and all for good reasons—but the underlying economics are really dubious. How can we do something about the taxation funding base?

The first thing we have is we have to recognise that civil action is a market instrument and even though this will make many people shudder, we have to be prepared to extend the capacity of private citizens on both sides of the game to directly fight it out as to what they can do with their resources

and what they can be constrained with on their resources. It is not a nice thing to contemplate but the alternative is a decreasingly ineffective government intervention.

The second thing we have to do is we have to find—and the Aghaw Centre has a project we are starting on this now—tax leverage instruments for conservation, much the same way as we have tax leverage instruments for forestry or the production of abalone. We have even got tax leverage instruments for beef cattle raising—I do not understand the policy reason for that, but we have them. We do not have tax leverage instruments for the protection and rehabilitation of the environment that will bring in large amounts of private funds. There are concepts that could allow us to do that; we have to move down that track.

The third thing is the PVPs. PVPs and the on-farm assessor are a classic example of a good idea that is embedding the problem that it is trying to fix. The concept of getting an automated assessor where you go and get your PVP and you at least get a form of "get out of gaol free" card for some of your stuff seems like a good idea. The difficulty is that it does not give you a "get out of gaol free" card for all the other legislation. If you plough over a midden, then you are in deep trouble anyway. People may think they are getting a "get out of gaol free" card, but it is only for some issues.

Secondly, the manpower requirement to put people on farm to do those assessments, to answer the queries and do all that sort of stuff is going to blow the budgets. I would put London to a brick it is not feasible in the budgets they are trying to put into it. We have to move away from high transaction cost approaches and to more of an audit-based, self-assessment system, like we have in corporations, a system with a lot more integrity that requires a lot less manpower. They are fairly fundamental changes.

CHAIR: There has been a lot of environmental legislation for quite a long time and we have spent the last couple of years in the Parliament talking about you beaut new ways that we are going to do it and in a more rational way. What do you think of those? Have you had any input?

Professor MARTIN: Yes, I used to be chair of one of the catchment boards and it was a fantastic experience with fantastic people but it was one of the most frustrating periods of my life because there was all these change going on but you could not see it fixing the fundamentals. You could see it fixing a bit here and there, sewing another patch on here and there. Yet when you came back to the sort of fundamentals that I have talked about: is the system streamlined and efficient? Are the transactions costs out of balance or in balance with what you expect? Is the regulatory structure something that, just standing back and saying, if it was your job to make it work, will it work? The answers to those keep coming back: No. We are going to have to continue doing all of these reforms and doing all these bits and pieces but we also need a conceptual model that is a lot braver than what we are got now.

CHAIR: Who is listening to you at the moment now?

Professor MARTIN: I hope you are.

CHAIR: Apart from us. Do you feel that there is some reception from the public sector?

Professor MARTIN: The public sector varies a lot. I would not say that my audience, at this point, is captured in the public arena. I have strong interest and support from a number of primary producer bodies, for example, the rules portal project, which is designed to make efficient how people self-assess their compliance obligations. We have a RIRDC grant application being considered in round two. It is supported by Horticultural Australia Ltd, New South Wales Farmers, the Victorian Farmers Federation, Biological Farmers of Australia and Irrigation Australia and has some support from the New South Wales Department of Primary Industries. We also have some support from the Queensland Department of Natural Resources and Mines, but I would not expect government to pick this up. What bureaucrat would be comfortable or even well advised to stand up and talk about radical reform of the regulatory structure when the Minister may or may not think it is a good idea? It is asking a lot to expect that of people.

Mr GERARD MARTIN: Firstly, I apologise for missing your opening comments but Hansard has faithfully recorded them. In talking about land stewardship, the CSIRO suggests that relying on common law notions of environmental duty of care is fraught with dangers and, in the end, may prove

to be inadequate. That seems to be at variance generally with what you are saying. You say there is a need to underpin the legislative approach with this duty of care, if we are to have this self-regulatory, self-compliance style?

Professor MARTIN: As to the arguments that CSIRO raised, if you compare any instrument with an ideal state you will see problems, and there will be problems. Let us compare an ineffective regulatory system against a possibly ineffective regulatory system with the duty of care. That is really the comparison. Tian Shi and Mick Young are quite right in saying that there are enormous complexities in these and that it is not going to be a simple, perfect solution. I am not even necessarily advocating per se a new duty of care. In fact, we have landholder duties of care already. Riparian rights are not rights of ownership of water; they are restrictions on what you do to the upstream water and there is a duty of care in them. The way you handle chemicals, there is a duty of care. It is already there. The only real question in my mind is: can we design a mechanism that will make a duty of care effective at least cost to the community? At the moment we have a system where it is easy to question its effectiveness. I mean the state of environment reports are evidence for that. The transaction costs are very high and the complaints of everyone about regulatory compliance are the evidence of that. We at least have a conceptual model from corporations code that says, "If you create a robust enough and clear enough duty and you allow the regulators and the market through civil action to refine it, then you can get a workable instrument". At that level I would say, "Yes, I can accept the concerns. I think they are legitimate concerns. I do not accept them as in any way even attempting to make a case not to progress on duties of care." I do not think they say that anyway. They are saying it is something that needs to be evaluated and considered.

The other point I would make is that people get terribly hung up about having to define a duty and having to get it all right. Moving away from being a technical lawyer type, it is a no-brainer how you would create a duty of care. It is dead easy. All you need to say is that a producer who is going to potentially lose an interest in an asset has a right to compensation in the event that they prove that they have been good custodians of the land. And on the other side you have an arguable right or a standing for a citizen to take action to limit someone's use of an asset when they have shown themselves to be irresponsible custodians of that asset. That is all you would need to do. I am not saying politically you would want to do it but it is not that hard intellectually.

Mr IAN ARMSTRONG: Would you not say, though, on that premise: where is the benchmark in deciding what is irresponsible use and responsible use, just as a throw away line to establish that benchmark? I am with you all the way, except for the benchmark.

Professor MARTIN: I have a PhD student just starting who is going to spend the next three years trying to work on that particular area. I know what they are going to find. It is impossible to define.

Mr IAN ARMSTRONG: I will look forward to reading the executive summary. What will be the implications for rural economies and societies of responding to the new rules framework? Can you provide the committee with any examples or case studies of the kinds of socioeconomic and ecological benefits of the rural framework you are proposing?
~break/robins

Professor MARTIN: I cannot point to the specifics of a cost benefit analysis of the concept that we are working on. What I can point to is the closest I can find. The model I have used is the corporations code. The closest that I have been able to find in a relatively cursory examination was in 1987 when the Federal Senate Standing Committee on Constitutional and Legal Affairs did a study on the role of Parliament in relation to the national companies scheme. That was a conceptual analogue. It looked at how we should rationalise all this and what will be the costs and benefits. Of course, I would like to do an analysis of whether the framework that I am talking of can be made properly to work and the savings. It would be very easy to identify substantial bureaucratic overhead savings in such reform. You just look at the number of players. I would like to do an exercise where I took the total budget of environmental agencies and found the actual number of dollars that get applied on the ground—I would say it would be a very small percentage—and then look at how much goes in co-ordination across agencies. I think it would be quite high, but that is speculation.

Mr IAN ARMSTRONG: Not bad.

Mr GERARD MARTIN: Another submission to our Committee says that the current institutional arrangements reflect a systems approach to delivering sustainable land and water use, one that is ultimately a band-aid solution. The submission argues that a more fundamental approach is required and, in the words of the Wentworth Group, "redesigns Australian agricultural systems". Do you have a view on that? Perhaps you might somehow relate your resource rules portal to that.

Professor MARTIN: Okay. I would have thought that the comment someone would make is that it does not reflect a systems approach. I have done such systems diagrams. For example, we did a detailed systems diagram of all the elements involved in regulating the water flow through a river—who are the players, what decisions are made and where do they fit, et cetera. Then you look at where the interventions take place and you see a spot here where there is a little incentive program for fencing of riparian banks, for example, and a spot here where the largest water user—which, in this case, was Sydney—has managed to counter all of that by having a pricing structure that means that none of the costs to producers of water export are passed back to the end consumer but are held somewhere in the middle. You look at the system and you would say that there are so many competing incentives and disincentives and regulation and non-regulation that it is not a rational attempt to manage that behavioural system.

We have a book that has just been published by Federation Press called *Sustainability Strategy* that looks at that exactly: How do you conceptualise these systems; how do you decide which instruments you would use in what part of the system and how do you structure it? It requires two things: first, recognising that we do not manage natural systems, we manage behavioural systems. Most of the research we do is focused on the belief that we are managing the physical system and that consumer behaviour is a strange little thing that we do not play in. There is very little research, for example, on why regulation works, if it works. There is very little evaluation on what are the behavioural things that cause someone to take up or not take up an incentive. None of that stuff gets investigated. I am not critical of economists, but economists do macro level analysis of what ought happen and we have behaviours occurring all the time that violate that—they do not make sense from that point of view and we do not understand why. So a behavioural systems approach is what I advocate.

Mr RICHARD AMERY: Can I return to your main point? The concept of overregulation is something that the Committee should explore. We should look at some of the comparisons you made. You talked about South Australia and Queensland, and there are probably some things that we should look at. You do a direct comparison with natural resources and the corporations law. You referred to Federal corporations law and trade practices—the very big umbrella-type legislation. But under that corporations law various corporations are regulated—motor traders, motor dealers, real estate agents, conveyancers and so on—and they could probably argue very strongly that they are overly regulated. My point is that if you are trying to use the corporations model—looking at the two lead pieces of legislation that you referred to and then the other ones under it—where do we take up the natural resources? At what point do natural resources have their corporations and trade practices and under this umbrella? You probably need to do a three-year thesis on this question. But I put it to you by way of a question on notice that I would not mind getting your thoughts on that for the Committee in a paper. How would we tackle it? I suppose that we, as a Committee, should look at what the other States are doing and whether they are doing well. I would like to know how we would do that comparison. How do we apply a corporations law model to natural resource management and so on?

Professor MARTIN: So far as I have got thus far in my thinking about it, my first point is that corporations law is an analogy; it is not a direct mapping. But I think there are things that should be universal. There are certain basic performance standards and obligations of resource managers. So we ought be able to clarify—and there have been various attempts to do so—what is an environmental crime, if you like. Is there a separate category if you breached the native vegetation regulations and cleared an extra bit of land or spilt some effluent into drinking water and so on? There are much broader principles that we could distil and say, "Okay, that's a broad principle". So it does not matter what you are doing, if you commit one of those crimes then it is a crime.

Then you could come down to the next level and start to identify strategies, I am not saying that you would want to do this—and say that at the point of transfer of a property there will be an evaluation of the state of that property. There will be information provided to the purchaser about environmental issues that need to be addressed on that property. That would then allow the market to

emerge: if people know they have a problem when they buy a property they will factor it into the price and the value of degraded properties will be lower than the value of undegraded properties. We will have informed the market. You could start building in principles like that. Then you start to build in self-assessment based control systems like we have with tax and corporations, backed by a proper audit framework and clear penalties. You would still need the equivalent of the abattoirs legislation or regulations or specific regulations for marinas for example, but the overarching structure would be pretty much universal.

CHAIR: Paul, thank you very much for your very stimulating contribution. We get conditioned to hear the propaganda that is meted out: This proposed legislation is going to fix it all and this statute is going to rationalise what has gone on. As Richard has pointed out, it could apply in other portfolio areas as well, but certainly we have had a rash of environmental legislation over the past decade, all supposedly designed to fix various problems. You have a comprehensive list. We hardly ever think of the international conventions when we are debating; we are just looking at the immediate State statutes. Basically, you are saying that there is a certain pointlessness to the whole exercise that I find very interesting. Thank you for coming and for sharing that with us.

Professor MARTIN: Would you like me to send you more details about the rules portal?

CHAIR: We would love that and we are happy to continue the dialogue. Thank you.

(The witness withdrew)

(Short adjournment)

RICHARD KINGSFORD, Professor, School of Biological Earth and Environment Sciences, University of New South Wales, sworn and examined:

CHAIR: Thank you for appearing before the standing committee today. We are pleased to hear your evidence. I am advised that you have been issued with a copy of our terms of reference and a copy of the Legislative Assembly's Standing Order Nos 332 to 334 that relate to the examination of witnesses. Is that correct?

Professor KINGSFORD: That is correct.

CHAIR: In what capacity do you appear before the Committee?

Professor KINGSFORD: As a private individual.

CHAIR: I know you have not made a written submission but we have a copy of your submission to the national standing committee. Can we include that as part of your evidence today?

Professor KINGSFORD: Yes.

CHAIR: Would you like to speak to us?

Professor KINGSFORD: Yes, I will give you some background. I have been working on rivers and wetlands in a research capacity for about 20 years - on the Macquarie Marshes, the Murrumbidgee, the Darling, the Border rivers, the Cooper and the Paroo. I have also been involved in water policy for about 15 years within the New South Wales Government, looking at water sharing plans and whole of government issues to do with water reform. I was also on the expert panel for the Murray River and I am currently on the Cooper Creek Catchment Committee and on the Lake Eyre Basin Community Advisory Council.

What I perhaps bring to the committee are some observations and some science over the past 20 years about the state of our rivers, and the impacts of water resource development on the ecology of those rivers, and also some of the impacts on flood plains. I am talking here about flood plain eucalypts, fish species, water birds and frogs—I guess the things that make rivers tick and make ecological sense.

CHAIR: We have a series of questions that we provided to you. Obviously we are interested in your responses to those questions and we will probably ask you a number of them but if we do not get to them are you prepared to take them on notice?

Professor KINGSFORD: Yes.

CHAIR: You are now in the relative objectivity of academia after hand-to-hand combat in the agencies over many years. I am very pleased that you are still actually interested, involved and hopefully your advice continues to be sought from the agencies. You probably did not hear Professor Paul Martin's presentation that talked a lot about the formal instruments that are there, the haphazard nature of them and their general ineffectuality and abundance. Would you give the committee some general views about how it is going? This committee has been meeting for some years now and we are one of a number of groups that is interested in this area in government and outside of government. We want effective natural resource management in this State. We know many statutes have been brought forward to achieve that and there is a substantial allocation of resources. We are not looking to reinvent the wheel but we are looking for positive solutions to the problems. I think we are all aware of the problems, although there are always new and fresh problems that need to be identified, but we are really anxious about solutions at this stage. Do you have any general views before we ask questions?

Professor KINGSFORD: Obviously it is a huge area. My views are similar to Paul's in that we have got no shortage of instruments, political and policy, for dealing with the issue. The problem I think is that it is almost intractable because it is such a highly political issue these days. I think gone are the days when the environment was something that was, if you like, I would say that sort-of David

Attenborough view of the world that it is nice to have and we appreciate it. It is now impacting in all sorts of different ways on decision-making at lots of different levels within government. So if you are talking about water you are immediately into the area of trying to deal with socio-economic issues related to the irrigation industry, in particular, because that is a major water user. If you are thinking about land clearing and salinity, as the evidence is accumulating, we are realising that we are actually causing major impacts to ecological systems. It then becomes one of these issues that because we perhaps have not invested that much in the science, people demand as much evidence as they possibly can to actually, I guess, have the political will to make the changes that need to be made. That does not occur very easily; it is very slow simply because there is so much politics around natural resource management and the difficulties of making those decisions.

I guess, I think, as a scientist this is no different to some of the big policy decisions that have to be made by governments. In relation to health, for example, it took governments a long time to actually get in step with things like nicotine and lung cancer, even though the science was accumulating over a long period of time. We are seeing some of that debate at the moment about climate change. I think inevitably these are the same sorts of issues that governments go slowly with trying to actually keep up when they have to make decisions about whole communities on river systems in the bush with aspirations about what are the opportunity costs in fact if we go forego the option to clear, or forego the option to dam this river. There are obviously lots of people looking at what other people are doing well in an export/income level and seeing opportunities that they could be getting in on.

The big issue for Australia, and always has been in rural Australia, is the push to diversify because it is so difficult with our climate to actually run a business when markets and commodities are going up and down all over the place. So people are trying to find new ways of actually living in Australia, and that forces things like new developments that in the long-term I do not think are going to be sustainable for different parts of Australia. That said, I think there is a growing maturity I see in Australia that is different to other parts of the world, particularly in rural Australia where I think a lot of people are thinking about these issues and trying to act locally, they are trying to work out how to deal with these issues within the greater scheme of public policy. But fundamentally there are lots of people in the world and lots of people in the world want to be fed and clothed and we are one of those countries that, if you like, are using our natural capital to ensure that both people in Australia and other parts of the world are fed and clothed.

Now there are going to be more and more people and I guess we have to make decisions about how far along that track we want to go in terms of our environment, what sort of environment do we want to leave for our grandchildren, whatever parts of Australia that may be, depending on those big economic drivers, particularly in terms of population both within Australia and externally.

Mr RICHARD AMERY: At the risk of an oversimplified question: I think a lot of us have been around this particular subject now for probably a decade or two and there are a lot of clichés and buzzwords in environmental and natural resource management which turn up all the time in submissions and the like. From a scientific point of view—we have introduced land clearing regs, we have got both national and State strategies, environmental flows have been put in place, sustainable agriculture and other on-farm practices—is there any science to support that these are giving us improvements and outcomes in some of the barometers that the scientific world might check, whether it is end of catchment salinity readings or whether it is water quality?

I know in agriculture there have been some improvements in planting things and getting better returns in areas where we could never plant before, but in the scientific world of natural resources are there some encouraging signs coming up that with all the politics, with all the fights, with all the difficulties, we are making progress and turning this all around?

Professor KINGSFORD: That is a good question. I think the answer to it, is some. I think the bigger problem is that in the environment and in terms of Australia as a country, the time frames that the ecology responds, like weather patterns, they can be decades. They are out of phase with political cycles. So I still think what we are seeing in the environment now is the result of decisions that were made in the seventies and eighties, and that will occur for another 10, 20 years. So someone might work on the Murrumbidgee, for example, which was one of the first rivers developed in Australia around the turn of the 20th century. There are some trees still living there that have not had a

flood in about 100 years. They established 100 years ago but they are just hanging on with a bit of rain and ground water.

So, if you like, the cycles are decades, hundreds of years. The changes that we are seeing now are about, in a sense, getting some improvements but trying to stop some of the degradation. I think the sad thing about it is we probably will not see those for another 10, 20 years in reality. And we have got to think too that some of the changes are actually just stopping detrimental things happening rather than going back. Certainly, environmental flows is one of those, but the environmental flows are essentially, apart from the Macquarie, restoring about less than 5 per cent of the flow that is diverted out of those rivers. So to see 5 per cent in a climate like Australia where you have got huge droughts and you have got this incredible variability, ups and downs, it is quite difficult. It is a bit like looking at an economic indicator and trying to find that little measure that you are improving. But I think what is changing is people's attitudes.

Mr RICHARD AMERY: Growing maturity.

Professor KINGSFORD: In the longer term I think we will probably see some of those changes.

Mr IAN ARMSTRONG: Recognising that climate change is not new and this is the oldest continent in the world—it has been going for possibly millions of years and we are still learning about it—I am always fascinated when we talk about environmental flows in our river systems and particularly now in 2006 when we have just, hopefully, come to the end of a major drought. We are told it is the worst drought in 100 years. But the fact is we have reversed the climate with environmental flows. There would have been no environmental flows in the Lachlan River since before 1932 in a drought like this for nearly three years—certainly two years. As far as Macquarie Marshes are concerned, migratory birds and so forth, there would have been no water in those marshes for the last two years either. So I, just as a very simple person, think to myself: what is the natural environment? Why are the birds migrating to Lake Cowal? Why have we got 10 million kangaroos now when we used to have about 3 million? Is it because we have put in artificial water? So what is the natural environment out there?

Secondly, you mentioned that new developments are not sustainable into the future. Would you care just to amplify that a little bit as to what they might be, where they might be and how you see that happening?

Professor KINGSFORD: I think you are right in terms of the way we have changed the environment. So, absolutely. The Murray used to dry out. The Macquarie would have dried out and the Darling and all of those, as we know—we have seen those pictures of people walking across them. What we have done is increased the low flows in our rivers. So in fact we have made them like delivery channels, essentially. But as well as doing that we have taken out a lot of the high flows. You will know for the Lachlan, for example, right down the bottom end there is the Cumbung swamp and there are flood plain graziers down there who are extremely worried because the vegetation is not getting the water that it used to. The big flows are not really getting to the ends of our river systems the way they used to in the past.

If you look at the flood records for rivers like the Macquarie, for example, they have had droughts periodically over time and most of our plants and animals are able to deal with those droughts. But what they do not have, particularly down the bottom ends of the rivers because we divert most of the river water upstream of the major flood plains, is they are not getting the extensive floods they used to. That is why places like Chowilla flood plain on the lower Murray have big salinity problems. I have worked on the Murrumbidgee; on the margins black box and eucalypts are no longer getting the floods that they used to. If you look at places like Menindee Lakes, which has been made into a water storage, my understanding is Lake Cowal is flooding more than it used to. I might be wrong there, but some of these areas, certainly Menindee and on the Murray, there are a number of lakes that have been made as low-land storages. They used to flood about five years in 10. A lot of them, until recently, have been permanently flooded. Obviously, Menindee Lakes has dried up, but I am talking now about some places on the lower Murray.

These lakes do not produce the ups and downs that they used to have; they need to dry out; they need to reflood so that the invertebrates and food web get going. What I think has happened—you mentioned the migratory birds and the effects that this may have had on them—they rely on these large flood plain areas to breed, so they are not breeding as much as they used to. In the past these birds were quite capable, and they still are capable, of going from here to Cairns. So they are able to mate, breed, get into food on the Cooper or the Paroo or one of those western rivers should they actually flood, but certainly our indicators are—and we have been monitoring waterbird populations now for 24 or 25 years across eastern Australia—that most of the waterbird populations are declining in eastern Australia. We believe that is largely because their major breeding habitats are no longer flooding as often as they used to, and that not only includes the lower Murray, the Macquarie Marshes, the Gwydir, the Cumbung, but more recently it includes Narran Lakes and to Lower . They are going to be denied water with Cubbie Station—there are less flows coming into that area—and also there are lakes on the Darling. I think your last question was about new developments.

Mr IAN ARMSTRONG: You mentioned new developments not sustainable in the future.

Professor KINGSFORD: One of the key questions in relation to water, for Australia not only for New South Wales, is that if we do want to develop new water resource systems we will need to build new dams and develop our rivers for irrigation. I am not sure if you are aware that there has been a lot of discussion and argument on some of the western rivers. On the Paroo there has been a lot of discussion, and there has been a lot of discussion on the Cooper and the Georgina-Diamantina. Landholders have considered this. They have talked to other landholders on other river systems and they are very against any development on the rivers, because of the impact it will have on their flood plains. I guess from an ecological point of view the building of dams and diverting of water upstream out of a river will have an ecological impact. The question then becomes: How much impact do you want to have on these rivers, and is that socially-politically acceptable?

I think we should not have the notion that there is wasted water in rivers. All the water is going for some ecological function, even those big rivers in the North that we talk about with wasted water flowing out to sea. Ecological science is telling us that things such as prawn catches are tied into river flows. These big rivers are bringing the nutrients down for quite a lot of our fishing industries. There are, I suppose, potential pitfalls with those decisions about development that may not be realised for 10 or 15 years, as we have seen happen with some of our lowland rivers in the Murray-Darling Basin where people are beginning to understand the long-term impacts on these particular river systems.

Mr IAN ARMSTRONG: When you refer to "new developments", you are referring to new developments in the future not new developments that have already happened?

Professor KINGSFORD: I am talking about future developments.

Mr IAN ARMSTRONG: Be it cotton, or whatever it might be.

Professor KINGSFORD: In terms of new developments that have happened I think the challenge then is going to be—well, it comes back to my original comments about it being a social-political discussion about whether you retire more flows to the environment and who pays for the water. Governments over the last 50 TO 100 years have made decisions with communities about developing river systems and I believe it is unfair for individuals to shoulder the costs if government suddenly decides to do a U-turn on some of these issues, because they essentially reflect community and political aspirations of 20 or 30 years ago. They need to be realised for that rather than individuals paying the cost.

Mr GERARD MARTIN: In the *Sydney morning Herald* in December last year you argued that we need to move conservation beyond boundaries. Will you expand on that a little, particularly in relation to what we need to do with current policies or regulations to achieve such an objective?

Professor KINGSFORD: The notion is that we think of conservation first of all in how many national parks we have. At every election the measure of conservation effectiveness is the number of national parks that we have accumulated in an election period. Rivers do not work well with that. With a national park you are managing all of the ecology within the national park. You are

assuming that the things that stay there—if you put a fence around it and look after the foxes and so on, it will be all okay. But if you have a national park on a wetland or river, you cannot control the main natural resource currency, which is water. We have to think in bigger terms. We have to think of whole landscapes. We have to think of how they interact over large areas, because it is not easy to just say, "Okay, this is the patch and we are going to keep it for ever for conservation." If you do not have some control over the tap that supplies that area, in terms of the river system, it is not going to work.

I think this has been a problem generally in water policies. We have seen our rivers as just the main channel without realising that, when a river goes down, it will fan out into an extensive floodplain. For instance, the Paroo River will flood 1,000,000 hectares of flood plain country. The Condamine-Balonne, which is where Narran Lakes and Cubbie Station are, will do about 1.2 million hectares. Essentially, that is all part of the river but most of our policy has been on the main channel. It has been about defining legislatively watercourses. Other areas have been a policy-free zone and a legislative-free zone.

Mr PETER DRAPER: In the same article you advocated for the Government to buy water for conservation. You mentioned a possible funding source being the waste levy. Would you elaborate a bit on that?

CHAIR: As you and I know, because we were both at the announcement, the Premier did increase the waste levy but he did not use it for that purpose.

Professor KINGSFORD: It comes back to my response to Mr Armstrong's question, that is, that to get our rivers back into ecological shape they need some water. Governments, in the past, have had other options for compulsorily acquiring water from the irrigation industry. There are clearly some big political problems with doing that, and it has been very difficult to do. I believe that now we are into an area where, if the community wants ecological health for their rivers, the community will have to pay. I think that largely city people rely on landholders in the bush to shoulder much of the responsibility of conservation without having to pay for it. This is an opportunity for city people to perhaps pay for them the sorts of conservation outcomes they would like in the bush.

Mr RICHARD AMERY: By the same principle—getting away from water and back onto the land—you are not opposed to the purchase of a big farming property and its incorporation in a national park. There is an argument that you are buying up a productive farming operation. In effect, it is the same thing, is it not? You are actually buying back primarily an economic provider for the environment. You do not have a fundamental problem with that, both with land and water? I understand that the Committee will be hearing from irrigators this afternoon and I will probably put some different spins or versions on that. They have often said that if you want environmental water you have to buy it. I think in principle they agree with what you are saying, but it is a matter of how it is applied.

Professor KINGSFORD: There is a big argument, obviously, about conservation and national parks, and whether governments can manage than properly and keep weeds and feral animals under control. I first started working out on the Paroo with the landholders out there—the national park was bought out there in 1971. I spoke to the neighbours and they said, "This is the worst thing that has ever happened. We have a national park on our doorstep." If you go up to talk to them now they have quite a different attitude. They believe it is one of the best things ever to have happened. The reasons for this are that they are able to do a whole lot of co-operative things on the border with feral animals—they do not have many weeds, apart from woody weeds out there—particularly pigs. They also feel that the national park has been very effective in looking after their river in a catchment context, and that has been very important.

There is actually a third reason. Tourism is not a panacea but more and more people are going out there. If you go up to Wanaaring, it is actually growing. They need accommodation because it is on a loop from Hungerford to Wanaaring and out to Tibooburra. It is not a zero sum game in terms of economics. I believe there are some economic drivers as well. Coming back to water, I also believe that places such as the Macquarie Marshes would certainly bring in tourists, in terms of the economy. There is an incredible demand of people wanting to go out there. In Canada in the past 20 years there has been established a Canadian Heritage Rivers system, which is estimated to bring in $30 million each year from visitors wanting to go and visit these rivers.

CHAIR: The Wentworth Group has said, and it has been said before, that water scarcity means we cannot keep going as we have done in the past. We know that and you know that. The group also talked about the best available science to make the decisions about how much water is needed to ensure this. You were one of the few scientists researching water employed in the national parks system and now you are at the university. What is the state of science for river systems in New South Wales? What are the challenges for improving the science if it needs to be improved?

Professor KINGSFORD: It is true to say that we do not know nearly as much as we would like to know. That is not just a scientist looking for more money to do research. I believe the indicators that are called on, particularly in these big public policy debates—people say, "Where is the information for this big policy shift?" We just do not invest in it. If there is one criticism I might have of natural resource management it is that we spend too much time on process. We spend a lot of time saying we are doing lots of things but we are actually not informing the debate much by collecting new information, or information that we will need down the track. That is largely a reflection of the politicisation of the process. It has become so political that no one wants to know too much about what is going on. With regard to science, we know enough now to make the decisions that we should be making about rivers.

It may not be that we know enough about a particular Rivers system, but there is abundant evidence—particularly within the Murray-Darling Basin where a lot of the research has been done, but also on overseas rivers—to show that this is a commonplace problem. The sorts of issues that I have been talking about are occurring in China, Russia and Africa. We are seeing significant biodiversity losses as a result of the development of river systems, in places like the Aral Sea. In the Tarim Basin in China 200 kilometres of the bottom of the river have dried up and whole civilisations are now extinct because of this issue about rivers. What is going to be the challenge is that because we now have managed rivers, particularly those with large dams, and we have environmental flows, how do we get the "best bang for the buck" in terms of the environment? We do not know very much about that. It will be the challenge for science, I think, to say, "Okay, we have this amount of water. How do we best deliver for the environment?"

CHAIR: Who funds research in your area? Is it largely public funding?

Professor KINGSFORD: It is all public money. Not much private money comes into environmental research—very little. Probably most of my funds come from the Commonwealth Government. Some comes through New South Wales, but not very much.

Mr GERARD MARTIN: I thought of something while you were speaking, and it gets back to something that is a bit of a hobbyhorse of my colleague the honourable member for Lachlan. It relates to this argument about environmental flows, translucent flows and I think you referred to low-level flows. With regard to the science and being informed about making a decision, apart from having some historical data—and given that we only have 200 years on an ageless continent that is probably not a lot of help to us—without getting too technical what are the key factors you need to know about as a scientist in order to make decisions on what is a reasonable environmental flow?

Professor KINGSFORD: I think we have the technology to do it and I say that we need to measure where the floods go, how much water gets over the bank. You can do that with satellite imagery. You can look at every flood through time and then link that to the modelling, the rainfall. You can, I think, go backwards and forwards. You can say, "This is a sort of river we have now, what would it have done in the past? What can it do in the future?" I think that too many people have a naive view that we can do everything for river systems within a socio-political context, that we can actually look after all the birds and all the red gums. I think we then need to know something about how the red gum is doing, or how the fish or waterbirds or frogs are doing. We have to measure those, so it is not just flooding. Are they actually breeding so that we have a sustaining population? Then I think that can work into the management. Potentially the sorts of things you can do, and we have done some modelling in the Macquarie, is actually either do translucent dams, where you just let the water out—and we find that that is the least effective solution—or you can in fact in a sense bank it for a big flood and then maybe piggy-back it on an irrigation flow so that is higher than the river and gets out onto the flood plains.

Mr IAN ARMSTRONG: Surely there is sufficient information available—let us take the Lachlan as an example—on past histories of floods and seasonal happenings that we do not have to go forward now to rely on satellite imagery and so forth. Surely the statistics are there over the past 60 odd years—in the case of the Lachlan, since the Wyangala dam was established—that can give us a footprint. After all, we have three universities and two privately funded researchers have been going there for more than 20 years now into the Lachlan, and I think their river flow reports are being used to put one on top of each other to keep the dust off the previous one, in many ways.

Professor KINGSFORD: And I think government in terms of water resources have been doing a lot of work there.

Mr IAN ARMSTRONG: Yes.

Professor KINGSFORD: I am probably not as familiar as you are in terms of where we are on the Lachlan in terms of the river science. I am not sure there has been much satellite imagery analysis in the past, and that is a big hole. In fact, satellite imagery only came into effect in the late 1970s but there is no reason why somebody could not look at that, link it to hydrology. So there is quite a lot known about the changes in hydrology but not much known about flooding patterns in the Lachlan.

Mr IAN ARMSTRONG: At the risk of not wishing to argue, the records since about 1940 would be pretty accurate as to where the floods have gone and the heights and so on, very accurate indeed, because many people were actually paid to keep these sort of records. In the floods in the 1950s people were paid and they loved it.

Professor KINGSFORD: I do not disagree with you at all. I just do not think anybody has put the resources into collating that data—not that I have seen anyway—and linking it to flows. If they have, there is no reason why the Lachlan should not be ahead of most river systems because it has not been done on most river systems. Even on the Murray, which is supposed to be our best known river, they are only starting to map the hydrology.

Mr IAN ARMSTRONG: So the Twinings and Clydes and so forth, the big irrigators, you do not think that they have done that before they have gone in and invested their hundreds of millions?

Professor KINGSFORD: I am sure they will have but they may have only just done it for their patch. I do not know if they have done it for the whole river. My understanding is that no-one has done it, and you really need that full context over the full time period to work out exactly. Without a doubt there would be very good information for flood plain areas on where those developments have occurred. They would know exactly. Obviously they cut a laser level and make sure they know where the floods are going to go.

Mr GREG APLIN: Over the past couple of years there have been increasing references in the media to the quantity of water required in the production of various food and fibre items. The CSIRO argues that the agriculture, fishing, forestry and food sectors are by definition physically intensive but the prices we pay for the products reflect the marginal cost of production rather than the full resources and environmental costs of production. Would you agree, and do you think that if those externalities could be factored into the consumer price for the products this would provide a useful mechanism for introducing more sustainable land and water use? Indeed, who would be the beneficiaries of any increase in cost?

Professor KINGSFORD: Absolutely, but the big problem we have is that these externalities are very difficult to get into a price people are not necessarily prepared to pay. And if we do it in this country, what will we do to stop the cheap imports where they do not have the same environmental safeguards? Fundamentally, there needs to be a global shift where there is, if you like, cradle to grave economics where the consumers pay the real costs, the externalities built in, for all of the things we consume. When it comes to what we eat and what we need to clothe us, then we certainly need to know what the real cost will be. Sometimes some of those costs do not come to us for 20 or 30 years. So the $500 million or so that we are paying out for the living Murray is something that no-one would have predicted in the middle of the twentieth century when everybody thought, "This is the way to go for this river system."

No-one would have predicted that graziers on the bottom end of the Macquarie or the Gwydir feel that they are going out of business because they are not getting the flows that they used to. In the environment, those are clear economic levers that are impacting on those resources and should have been counted into the economics. But if we do it in Australia, who is going to do it in China where there are huge health problems related to natural resource management? But I totally agree that it would be good to get some price signals in there, but the down side of that is that it would not have be level playing field, as some might say, in Australia compared to some other countries.

CHAIR: This is a very distantly related question but with the likely disposal of the Snowy Mountains authority—I presume both State and Federal governments will need to have mechanisms in place—I mean, there is already debate about impacts on the Snowy River of this. I do not know whether that is real or imagined but presumably there will be. Where will the science be injected into this agreement or implementation of it or whatever? How do you think that will work?

Professor KINGSFORD: I think the most difficult thing for rivers is knowing how much water a river has. If anybody has seen figures for a river system, you will know that they change daily, depending on what model is being used. The reason is that it is very complicated because you do not know how much is being absorbed by the trees or how long it takes for the river to get down, how long it has been dry. So there are lots of reasons for why it is complicated. But one thing we do know though is that we usually know quite well how much people are taking out of the river system. I think the real challenge is to ensure that we do not get some of those unexplained losses that migrate into extraction. So there will be a lot of forces, with corporatisation of the Snowy, to meet the requirements of their stakeholders primarily.

CHAIR: So presumably there will be some consultation process where people will have to put up their claims and then they will have to be guaranteed or whatever.

Professor KINGSFORD: That is right, but they will also have to do some analysis to see how much water they have in storage, how much they have for the environment. My worry would be whether or not they are very good at identifying what is needed for the environment versus what is needed for the users and the trade-offs, because the economic issues would become—

CHAIR: Who would input that science? Who would be doing this task?

Professor KINGSFORD: Without building it, I would think, into the regulations for the operation, there would be no incentive, I would not think, to do that unless there was a review process, perhaps with the Natural Resources Commission, over a time period that said, "Are you meeting these objectives in terms of managing this particular river system?" The pressures will be enormous, as we know, in terms of what use needs to be made of water that is held in storage.

Mr GERARD MARTIN: One of the things we always try to do in this Committee and always gets down in a lot of cases—you can tell I am talking about the value of water, the argument between the environmental and the socioeconomic side of things. We hear a lot about the cotton and rice industries, and conflicting arguments such as, "You should never grow rice where you do in Australia". But if you talk to the rice industry, I think it has demonstrated in recent years that it has become very efficient in its use of water. Are you confident as a scientist that we can link the efficient use of water with a real cost of the water in terms of the market?

Professor KINGSFORD: I think we are getting better at that. I think we are still "losing" a lot of water.

Mr GERARD MARTIN: Is that through evaporation?

Professor KINGSFORD: Through evaporation, through the channel systems. Not much of the water actually gets to the plant. I mean, if you look at how much water goes to that plant to keep it alive and get it through—I mean, I think this is one of the big areas where if you like there is opportunity for win-win in terms of not impacting on growers but perhaps increasing the efficiency with which we get water to a plant. If you look at the big cotton storages, I think the sort of figures I have seen is that they can lose up to 40 per cent to 50 per cent of their water in their storages. You

have to think this is in the most arid part of Australia with huge evaporation rates. People are trying to make them bigger and cover them but they are so big, and I guess to some extent there have not been the cost drivers to force people to do that. I think one positive aspect of water reform was that it sent the signals that water was a rare commodity and was going to be in short supply. I think we have got more and more of a drift towards more efficient ways of using water with drip irrigation for some of the big cotton areas. I think the more that happens, the better. I think the challenge for government will be where government provides subsidies in terms of perhaps tax relief or programs for water use efficiency. Then given the state of our rivers it will be important to try to retire some of that water back into the river system. Generally I think that the push is where we do get water use efficiency it allows us to grow more crops so we are not helping the rivers very much. I think that is a debate we have not really had to a large extent.

(The witness withdrew)

SUE JONES, Co-ordinator, Macquarie Marshes Management Committee, Boomanulla, Quambone, and

PETER THOMAS McLELLAN, Member, Macquarie Marshes Management Committee, Boomanulla, Quambone, sworn and examined:

CHAIR: I am advised that you have been issued with a copy of our terms of reference and a copy of the Legislative Assembly's Standing Orders 332, 333 and 334 relating to the examination of witnesses. Is that correct?

Mr McLELLAN: Yes.

Ms JONES: Yes.

CHAIR: The Committee has its submission from you. Are you willing to have that submission included as part of your evidence?

Ms JONES: Yes.

CHAIR: Would you like to make some introductory remarks?

Ms JONES: The reason we put in a submission to your inquiry to start with is that we feel that landholders, particularly in the Macquarie Marshes, are in a very unique situation as far as natural resource management in New South Wales goes. Some of the impacts that they are feeling have been quite severe. While their situation is unique to that area, many of the general, broad impacts are being felt by landholders on other river systems as well. Through all the water reform and water debate, flood plain graziers is one of the few industry groups, if you like, that has been ignored or overlooked in many instances. As a result they are being impacted quite severely by natural resource management at the moment.

CHAIR: Could you elaborate on what sorts of issues you think have not been picked up that have led you to this major decision to form the association?

Ms JONES: Yes, loss of flooding on the flood plains. In the Macquarie Marshes particularly the carrying capacity of some landholders has been cut by up to 60 per cent. When you go to the border rivers areas on the New South Wales side they are in the very same situation. You have not only agricultural impacts through this reduced carrying capacity, environmental impacts are also very great on these properties. You are getting major losses of native vegetation—things like the red gums, lignum and water couch areas are being very severely impacted. What really shifted flood plain graziers to come to the situation where they wanted to come together to get a united voice, part of it was due to the water sharing plan process in New South Wales. For the first time we had a planning process that was put in place across all river systems at the same time. Previous to that it was pretty higgledy-piggledy, here and there. As you would be aware, the Macquarie has had some type of water management history for a long time. We are one of the few valleys that has. But this was not the case for many others. When many others started to get the information on the table it was quite alarming to them.

CHAIR: You say that government policies have cause environmental and economic degradation in the Macquarie Marshes as a result of activities that diverted flow away from the marshes. Could you talk about what government policies have allowed which activities, what iniquities you are referring to and the nature of the degradation that has occurred?

Ms JONES: Firstly, I think it is very obvious to most that the Macquarie, like many other rivers in New South Wales, originally was over allocated. When Burrendong Dam was first planned its sustainable yield was estimated at 406,000 megalitres. By the time they got to full development we now have an extractive limit of 738,000 megalitres and if you take into account the environmental allocation we have on the Macquarie of 160,000 you are up over 800,000 megalitres—double the original yield estimate. It is a river system that just cannot keep supplying the resource to those interests. How we got to this and how policy was set, the Macquarie is an example when we went

from area-based irrigation licences to volumetric. Every valley in New South Wales converted at six megalitres a hectare, but on the Macquarie the water managing department of the time consulted only with the irrigation industry and Macquarie converted at eight megalitres a hectare, more than any other valley in the State.

It still has that allocation. Because of that we have much reduced flows. We are in a situation where, with the major water carriers coming into Burrendong Dam and then with extractive use being able to nearly empty that dam in an irrigation season, we effectively have to get two floods at a time to get any water down to the bottom end of the river and the marshes. The first actually fills that dam and is captured in the dam and we do not get big floods any more until the dam starts to spill. Effectively for every two weeks you get only one and they are the large floods. The medium-size floods are captured in the dam and we do not see them. They talk about translucent water management and it all sounds good in principle and on paper, but when you go to implement it you come into problems. With Burrendong it is the hole out of the bottom of it. You can get only between seven and 8,000 megalitres a day out the hole. You might have inflows into that dam of over 50,000 megalitres a day. You cannot replicate nature in any way.

Mr GERARD MARTIN: That has happened recently?

Ms JONES: Yes. Lots of decisions and lots of infrastructure changes have resulted in a real compounding problem. The cumulative effect has been enormous. It is all of these types of things that are having an impact. The type of thing we are seeing is reduced water bird breeding, as Professor Kingsford alluded to. The economic impact on graziers is about $30 million a year through reduced flows and carrying capacities. There is a significant irrigation industry below the Macquarie Marshes that has not had a crop since 2001, has not started a water pump since 2001. We have a cotton gin in Quirindi that has just closed down—the manager left the day before yesterday—which has not operated for three years. This is having an enormous impact. These are only small communities, and any loss to the community is felt fairly hard. That is the water side of it and then we have the Native Vegetation Act. If marsh grazier landholders look to put in even a small area of fodder crop to try to drought proof themselves they are stopped then by the Native Vegetation Act. Since SEPP 46 came in there has not been one acre of farming development approved in the marshes.

CHAIR: Because they have to remove other vegetation first, is that what you are saying?

Ms JONES: Yes, that is right.

Mr McLELLAN: In this Native Vegetation Act we have done a small project in the blue zone, which is the highest flood-prone area in the marshes. We have done 220 acres on my place. I put up the country and the Government put up the NHD funding, put up some of the funding for it. But what we found we can do is on the last year we put in a crop of barley. We would never get it to strip, but we can graze on it to finish off cattle. It worked out at a gross profit of $166 an acre, which, on that 200 acres of the next 6,000 acres to it, where Mr Amery launched his land and water management plan, we run only 200 head of cattle on the 6,000 acres next to it. We used to run 1,000 head of cattle on that paddock and last year we ran 200. The year before we ran 90. We have never knocked over a tree. We have just ploughed up roly-poly. Unfortunately, it is native to Australia but it is not native to our area. We have water grass there, spike grass, couch and stuff like that. All that has gone. If something is native to Australia we are not allowed to touch it because it is native to Australia, but it is not native to the area. If we had some lifting on that it would make a lot of difference to those people. What we are finding is that we are getting people sold out and people coming in, some of them have completely different ideas. That is all very good, but there is nothing about looking after the environment with some of these people.

CHAIR: What is the nature of these ideas? What are these new ideas that are not compatible?

Mr McLELLAN: Some of them just up the river further, outside the marsh area, ploughed up the whole lot.

CHAIR: What are they going to do with it?

Mr McLELLAN: They farm it.

Ms JONES: Mainly cereal crops.

Mr McLELLAN: You would be a lot better off just giving a little bit of leeway and giving people a bit of a go.

CHAIR: Did you make a separate submission to the review of the native vegetation legislation about this?

Ms JONES: Yes.

CHAIR: What was the outcome?

Ms JONES: Not a lot. We have not heard.

CHAIR: Do you have a copy of that?

Ms JONES: Yes.

CHAIR: Will you provide that and we will include it in your sworn evidence?

Ms JONES: Yes.

Mr McLELLAN: I certainly am against broad-acre clearing, do not get me wrong.

CHAIR: We know that.

Mr McLELLAN: But it is not in a native state. It used to flood about five or six times in 10 years and it used to have a full moisture profile, now we get probably one flood in 10 years and it does not respond unless you do something with it.

Mr RICHARD AMERY: The initial program of saving the Macquarie Marshes benefited greatly by the management committee and the good people who were involved. I remember you put in strong environmental arguments to get environmental flows and water into it. It received substantial coverage in the media with birdlife coming in and we kept using those points, what the Macquarie Marshes were achieving as a result of all the action you took. Are you saying that you have achieved what you wanted to achieve on the environmental side, but you cannot produce?

Ms JONES: I think we took two steps forward and five backwards.

Mr RICHARD AMERY: Two steps forward on the environment and five backwards on viability?

Ms JONES: The environment has crashed again as well. We had a small reprieve in 1998, 1999 and 2000, which were very wet years. We had a bit of a reprieve then. Since then both the environment and the agricultural side have fallen over.

Mr RICHARD AMERY: Was that for climatic reasons?

Ms JONES: Some of it is due to the drought, but when you look at the inflows in the system just lately, in 2003 we had two good floods. In February there were big rains around Mudgee. You would have heard on radio about the flood in Mudgee town. That would have given a medium-size flood to the marsh. Then again in August of that year there was another run through the rivers that come into us below Burrendong Dam. Again we would have got a good flood. We are in a really unique situation out there. We are in the western area but our catchment is actually the higher rainfall temperate area around Bathurst and Oberon. For the last six months of this year, when most areas have been very dry, in our system there has been more than 650,000 megalitres of inflows in the system. Of that, 138,000 has reached the top of the marsh, but that was the first flow for over two years. It was so dry that at the bottom of the marsh we got 2,400 out.

Mr GERARD MARTIN: Your real argument is about the management of Burrendong?

Ms JONES: It is.

Mr GERARD MARTIN: Burrendong is about 30 per cent or so capacity at the moment?

Mr McLELLAN: It is 34 per cent.

Mr GERARD MARTIN: Which is a lot of water, but the likelihood of getting a spill is some way off. But it really is about the capacity for the outflow through the pipe.

Ms JONES: Extractive use has to decrease because they have the capacity to empty that dam every year, and that is reducing our reliability as far as spills go.

Mr GERARD MARTIN: When you say capacity to reduce it every year, do you mean in terms of the allocations?

Ms JONES: Yes, in what we call the drought period. From 2001 to the end of 2005 we got roughly 450,000 megalitres through the marsh. The extractive used over one million. Inflows to Burrendong were 1,115,000 megalitres and extractive use used 1,117,000 megalitres.

Mr GERARD MARTIN: You tend to have an argument with the irrigators as well as the Government here, do you?

Ms JONES: It is more with the Government because irrigators do nothing wrong. They break no laws; they are not doing anything that they should not be doing. They are not doing anything that the Government has not allowed them to do and in the very beginning very successfully encouraged them to do. And with Burrendong, I think the problem was that the Government never thought it would recoup the cost of infrastructure and as licences were given out they were not being taken up, so they gave them more and more and then they started on the off-river scheme. We have five off-river schemes that go over 100 kilometres out off the river.

Mr GERARD MARTIN: It is a classic overallocation?

Ms JONES: It is a classic overallocation, but we still, to a point, have a manipulation of rules that favour one user group over other.

Mr RICHARD AMERY: Your point is that the irrigators are not doing anything wrong. They are not breaking any rules that we, as a government, allow them to.

Ms JONES: No, they are not.

Mr RICHARD AMERY: In effect, you are actually saying that the Government should change the rules or bend them?

Ms JONES: Yes, implement the rules.

Mr GERARD MARTIN: You have said there is a manipulation by one user group over another. Can you being more specific?

Ms JONES: There have been several over many years. One was the year we were supposed to go to the water sharing plan. The river management committee at that time voted unanimously, because there was formal debate at that time as to whether it was legal to implement all the rules in the new water sharing plan because not all the Act was turned on or whether we had to stay with the original rules that we had or whether we got a mix of rules. We had a teleconference, we all voted and it was unanimous that if we could not have all of the rules in the new plan, we stayed with all of the rules in the old plan. We felt that a mix could advantage one group over another. All water user groups were represented and we all agreed on it.

The Department of Land and Water Conservation, which was in charge at the time, implemented the mix of rules, regardless of what the committee said, which deprived the marsh of 50,000 megalitres, because we had a 50,000 megalitres high security allocation then and we went to a general security then, and I think we got about 12,000 instead of the 50,000.

Mr PETER DRAPER: The CSIRO advocates that the Government should either buy water back from those who are able to do without it at a nominated price or compulsorily acquire water for environmental values. How do you think we can implement more equitable water sharing and find the additional water that we need to ensure healthy flood plains and marshes, et cetera? Would such an approach address your concerns about the marshes?

Ms JONES: Yes. We do not support compulsory acquisition because when licences were first given out on the Macquarie and the water was actually shifted from the marsh upstream, there was no compensation whatsoever to flood plain graziers, and this is an issue which is a real problem. Flood plain graziers have no rights to water and no common law or legislative grounds to call for compensation and were not granted any. But we see programs like the one the New South Wales Government has just introduced, Riverbank, which Minister Debus has just set up. We are supportive of that. That program purchases licences from willing sellers at a market price so people have the choice. They can sell to a neighbour or to the Government or to the highest bidder, whatever they like. By reducing some of those licences, it will not only provide more water for the environment, it will actually give more reliability to irrigators in the industry because, if it is overallocated by bringing down that use rate, it must improve their reliability somewhat.

Mr GERARD MARTIN: Have you any comments on the new structure of the catchment management authorities as to how you see them operating in your area and in general?

Ms JONES: They still seem very new and I do not think they are sure yet of how they are going to go about addressing any of these issues. I think they have a long road to get community support. This is the third go we have had at this catchment management-type process. The last two failed very badly and the community is very aware of that and the first thing that they are going to have to do is to get community support and they have got a long road to do that. People are very sceptical out there.

Mr GERARD MARTIN: You are talking specifically about your area?

Ms JONES: Yes, but it is more than just our area.

Mr GERARD MARTIN: Landholders have reacted to the composition of the committees and the fact that they are much more locally focused. Do you share that view?

Mr McLELLAN: No.

Ms JONES: Many of ours are upper catchment. There is no-one from our area on it.

Mr RICHARD AMERY: So Macquarie Marshes does not have representation?

Mr McLELLAN: No, the nearest one is Trangie.

CHAIR: Is Macquarie Marshes still a special case? I remember Minister Knowles coming into the Parliament the year before last or early last year? What was all that about? It always gets a special mention?

Ms JONES: It does. There is always lots of planning and lots of talk but when it comes to actual action on the ground, very, very little.

CHAIR: So who is the closest representative on your TCM? Who is your main person?

Ms JONES: The closest would be Rob McCutcheon, an irrigator at Trangie, although we get on reasonably well with Rob and Peter Weston out near Nymagee.

Mr RICHARD AMERY: Which body is Macquarie Marshes represented on? Who do you send delegates to or what boards do you sit on?

Ms JONES: None, only the environmental flows reference group. That is it.

CHAIR: You used to have a special case?

Ms JONES: We were represented on the Macquarie Marshes environmental landholders committee.

CHAIR: Your group now, which is the community group, is really the only one. The agencies used to have a joint working party for the Macquarie Marshes. That does not exist any more?

Ms JONES: Not that I am aware of or not that we are involved in or have been privy to.

CHAIR: Presumably you would be aware of it, if it existed.

Mr McLELLAN: Yes.

Mr GREG APLIN: Peter raised earlier the decline in carrying capacity as a result of the changes. One of the aims of the reform process has been to move water from the lowest value use to the higher value use. How do environmental allocations fit into this dollar value framework and in terms of the your productivity, how do you place a value on environmental flows?

Ms JONES: I am not even going to try to put a dollar value on a gum tree or an ibis because that is not my area of expertise but with marsh flows—and I know on most rivers, because Australian rivers are quite long, for their environmental flows most of them get multiple benefits. With the Macquarie, it gets released out of Burrendong Dam. You have environmental benefits down the main stem of the river for fish breeding or riparian vegetation, depending on the rate it comes down. We have effluent creeks that run off down towards the marshes. The landholders out along those creeks get a benefit if the water is high enough and can run those creeks. It comes into the marsh and it benefits the ecology and environmental values in the marshes.

It does the agricultural side in the marshes for cattle grazing. The big reed beds contribute to water quality. It is a scientific fact that they have the filtering effect and it is wonderful to see the muddy water coming one end and it is crystal clear coming out the other. We have the irrigation industry below the marsh. That is one of their sources of water and it goes on to the Barwon and the Darling. When you are talking about the cost benefits, look at all of those because the environmental flows are not extracted as such, and flow a long, long way and have lots of benefits as they go.

Mr RICHARD AMERY: Do you have other counterparts in other parts of the State who operate on a similar basis to the Macquarie Marsh Management Committee?

Ms JONES: None of us are quite the same. There is the Lower Balonne Culgoa Miner Water Users, and the Pyree River Association. In New South Wales, that is about it.

Mr GERARD MARTIN: Peter, you spoke earlier about the approach with the NHT funding with the barley. Do you see what you are trying to do there as conflicting with the Native Vegetation Act and would you like to see it expanded?

Mr McLELLAN: I would like to see the Native Vegetation Act have a little softer approach on that and say that this is a unique area. These people lost 60 per cent of their income and that it is better to keep people who have a history and knowledge of the area and who like the area and should be allowed to do this in the blue zone area. You would not get big areas of it. They just want to be able to fatten their cattle.

Mr GERARD MARTIN: Has there been a formal evaluation of the Barwon?

Mr McLELLAN: Last year was the first. It is not written up as yet.

Ms JONES: We have got an agronomist looking into it. They are just writing up the final report on that.

Mr GERARD MARTIN: Is it going to continue in the short term?

Mr McLELLAN: Yes, it will continue in the short term. We have not got a lot of funding to go. Basically we have funded it on our own.

Mr GERARD MARTIN: In terms of State legislation you would like the opportunity to be able to do it.

CHAIR: We will pick up on that the submission to the review, and you can keep us up to date with that review.

Mr McLELLAN: One of the things that Sue mentioned was filtering the water. With the Southern Nature Reserve, 85 per cent of the reeds are gone and in the northern one, it is about 45 per cent and they have been gone since 2000. We own part of the nature reserve and Sue's parents own part too. It is pretty disgraceful. We lost these in 1990. It was taken off us to look after those blocks and Sue has a photo somewhere and there are all dead trees on some of our block from lack of water.

Ms JONES: We get a lot of accusations that the problems in the marsh are not water-based, they are land management based—overgrazing being the main contributor to it. It is not the case. We have just had an environmental release in November and December and there were very bare areas that have responded remarkably well. The only place we got regeneration of water couch in the marsh was on privately grazed country; none on the nature reserve. The biggest area of degradation is on the nature reserve. We have massive areas of red gum deaths.

CHAIR: There is the potential for about Committee to do a micro report on the issue. We will talk about that. This has been an area of tremendous focus for government over a long time and it shocks me that interaction amongst agencies seems to have fallen away. We will look at that. I would be happy to do some sort of micro report on the issue because everyone around the table has had an involvement in this area.

Ms JONES: I think it is fair to say that at the political level there has been enormous focus and people are really trying to do something, like Minister Debus's riverbank program. But when you get on the ground at the agency level that mind shift has not happened. We still have particularly the land and water agency in that irrigation development mode.

CHAIR: We will look at it. We are happy to maintain dialogue and if we decide to go down that path and visit at some time this year we will do it.

Ms JONES: We would love it.

Mr RICHARD AMERY: Picking up on what you said earlier, could you also tell us the number of decision-making boards and committees that you have served on previously and that you are no longer a member of?

CHAIR: Could you take that question on notice?

Mr RICHARD AMERY: A lot of them were restructured.

CHAIR: It would be useful for us to have a synopsis of the things that you have participated in because there has been a huge amount. We can search the *Hansard* of the times that Macquarie Marsh stuff has been mentioned in Parliament, but it would be good from your perspective. That has opened quite an interesting area of inquiry for the Committee.

Ms JONES: May I make one last comment before I leave? It is a hobbyhorse of mine and I want to put it on the table. Water reforms and getting water back is a very costly process. We understand that because we have said that you must buy it at market value. In Holland they fund a lot of their natural resource management stuff and environmental rehabilitation programs through a

lottery. We paid for the Opera House with a lottery. I do not see why we cannot have an environmental lottery. I think it would give city people, in particular, a way of voluntarily participating in, or contributing to, the environment of the State. And it would be on a voluntary basis.

CHAIR: We are great gamblers. Thank you and thanks for coming. It is good to see you again.

(The witnesses withdrew)

(The Committee adjourned at 1.02 p.m.)