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STANDING COMMITTEE ON AGRICULTURE, FISHERIES AND
FORESTRY

Reference: Rural skills training and research

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HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON AGRICULTURE, FISHERIES AND FORESTRY

Monday, 10 April 2006

Members: Mr Schultz (*Chair*), Mr Adams (*Deputy Chair*), Mr Martin Ferguson, Mr Michael Ferguson, Mr Forrest, Mr Lindsay, Mr Gavan O'Connor, Mr Secker, Mr Tuckey and Mr Windsor

Members in attendance: Mr Adams, Mr Martin Ferguson, Mr Secker, Mr Schultz and Mr Windsor

Terms of reference for the inquiry:

To inquire into and report on:

- The availability and adequacy of education and research services in the agriculture sector, including access to vocational training and pathways from vocational education and training to tertiary education and work.
- The skills needs of agricultural industries in Australia, including the expertise and capacity of industries to specify the skills-sets required for training, and the extent to which vocational training meets the needs of rural industries.
- The provision of extension and advisory services to agricultural industries, including links and coordination between education, research and extension.
- The role of the Australian government in supporting education, research and advisory programs to support the viability and sustainability of Australian agriculture.

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Committee met at 9.58 am**TAYLOR, Dr John Arthur, Director, Rangelands Australia**

CHAIR (Mr Schultz)—Welcome to the House of Representatives Standing Committee on Agriculture, Fisheries and Forestry inquiry into rural skills training and research. This is the 17th public hearing of this inquiry and is part of an extensive program of public hearings and visits designed to gather information from the people directly involved with the main issues of the inquiry. A further hearing will be held in Toowoomba tomorrow. Today, the committee will hear from the Queensland government and a number of other witnesses representing a broad range of people and organisations interested in the area of rural skills training and research.

I welcome the representative from Rangelands Australia. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as contempt of parliament. Do you wish to make a brief statement in relation to your submission, or would you care to make some introductory remarks?

Dr Taylor—I would like to make some introductory remarks to highlight a few points.

CHAIR—Please feel free to do so.

Dr Taylor—Thank you for the opportunity to appear before this committee. What I will try to do this morning is put somewhat of a positive spin on what, at times, has been a rather depressing picture. I am here as the director of Rangelands Australia, which is based at the University of Queensland's Gatton campus. You will pass through that on your way to Toowoomba tomorrow. It may be of interest to the committee that I am seconded into that role from CSIRO Sustainable Ecosystems. I do not see myself specifically as a representative of UQ or of CSIRO, but as someone who has done a few different things and has done some things differently in the area of higher education over the last four years. I have a few positive stories to share.

Before I go into this, though, I will briefly explain the aim of the UQ-CSIRO partnership. That has been all about building capacity for a new generation of land managers, advisers and facilitators in Australia's vast rangelands—that is, capacity to meet current and emerging market, community and government expectations for use and management of Australia's rangelands. There has been a lot of hand wringing and negativity in relation to a number of the submissions to this inquiry, and I acknowledge that we have some very serious problems. But I will try and offer some positive suggestions, some ways forward, to address a number of the problems.

I want to point out that this is not rocket science. I believe it is all about being client focused and taking a client focus. That is what makes the difference between addressing some of these problems and not. There are a number of different things that we have done that have been fairly strategic. One of them was to commission research on the market for learning in the rangelands. We can talk about that a little bit further. The most important thing is that it highlights that the key barriers are time, cost—and that is not only actual dollars but value for money or relevance—access, fear and technology.

We have done a national needs analysis and we have also looked at the skills gaps in a couple of key stakeholders. You have that in one of these papers that I have provided: the one on building capacity in the rangelands. That is a pretty unique process, but it is something that could easily be done in other regions and areas of Australia with some investment. We have also looked at the alignment of VET undergraduate and postgraduate programs with stakeholder express needs, and that highlights that there are some significant problems in that many of these programs are not adequately preparing students for what will be expected of them. Nor are they building capacity for what I call 'triple bottom line outcomes' in the rangelands in particular.

One of the other things we have done is engage experienced producers, advisers, researchers and so on in scoping, writing and developing courses. This has had some huge benefits in terms of the relevance of our courses. I have given you a brochure, and inside it there are some little pages. At the back of a number of those are summaries of student evaluations. The things I draw your attention to at the back of those are the comments about relevance to a student's workplace or business and relevance to their future in the rangelands. Some of the ratings are quite high. Given that they are from mature age people who live and work in the rangelands, they are all the more impressive.

The point I would like to make is not only that processes like that give you much more relevant education and training but also that we should not underestimate the benefits to the agencies and groups that participate in this process. Time and time again, the fact that we have engaged people from different states has made them realise what is going on in other states and what is good about it. Also, the fact that they are starting to try and put this work in context for learning for students has made them realise some of the deficiencies in the work that they have been undertaking. So I really support the idea of people working in partnership.

If we take it that there are ways of addressing some of these issues, like relevance and access—and Rangelands Australia has a number of strategies for that—then I would like highlight that I believe the major outstanding issue is that of cost of further education being the major barrier. Around 60 per cent of our prospects raise that issue time and time again. I think it is due to the increases in fees that have come through universities. One of the things I would like to do is echo the calls of many submissions to this inquiry about having some scholarships. They need not be full scholarships. I believe even partial scholarships would make a significant difference. We should not underestimate, if we take the learnings of the Lucas Group, that scholarships like this might also be an important incentive for attracting and retaining people in some of these rural and regional areas. I put that to you.

If we look ahead, we see that, without intervention, the picture is rather gloomy. With the reward structures that are in the tertiary education sector at the moment increasingly favouring research—and often research impacts score driven research—there are not the funds for people to get out there and interact. I believe that does not augur well and that the sorts of problems you have been hearing about over the last several months will only continue to crop up again. In closing, I would like to suggest that, from where I sit, further decline does seem inevitable and poor resourcing, limited ability of university people to get into the real world, desperate rebranding of courses and issues like that can only exacerbate dissatisfaction and poor perceptions.

Market forces are operating in terms of shaking down some of these—and you have heard stories about that in various states—but I believe it is time to make some hard calls and for some managed change. I suspect that, for a group like this, the challenge will be to look very carefully at the silos that are out there to identify the viable grains that are among that frass that is in those silos and to somehow nurture and grow those grains to underpin the sustainable industries in communities in rural and regional Australia. I welcome any questions.

CHAIR—Thank you very much. Before we go into questions, I think it would be appropriate for me to introduce my parliamentary colleagues. We are very proud of this committee. It is a committee that works cooperatively together in the best interests of the community. The members of this committee are drawn from right around Australia. I ask Mr Secker to introduce himself and give you an overview of where he is from and then go through the committee members so that you are aware of who we have here taking evidence.

Mr SECKER—I am the member for Barker in South Australia. It is a very rural area taking in the Riverland, the Barossa, the Mallee and South East.

Mr MARTIN FERGUSON—My seat is Batman in the northern suburbs of Melbourne. I am also shadow minister of primary industry and resources, which includes energy, forestry and tourism.

CHAIR—My area covers about 26,000 square kilometres in the Southern Tablelands of New South Wales.

Mr ADAMS—I am the member for Lyons in Tasmania. It takes in 62 per cent of the land mass of the island and enormous amounts of rural workforces.

Mr WINDSOR—I am the member for New England, ranging from Tamworth to Tenterfield. It is about 55,000 square kilometres. There are a couple of issues I would like to raise with you, Dr Taylor. One is in relation to the client focus that you mentioned. There is a continuing thread that seems to be coming through from a number of people. Can you elaborate on what you mean by client focus and what it can mean back at the coalface in terms of the training process? You make mention of the relationships and the linkages with the CRCs. Can you elaborate on some of the concerns you have there in terms of Rangelands Australia's views on those linkages?

Dr Taylor—I will start with the client focused work. There is a philosophy called social marketing. That is by a fellow called Andreason. Basically, that is all about having the client at the centre of all of your decisions. For example, whether you are marketing cars, or whether you are developing education, it is about keeping the client foremost in your mind. If you take a client focused approach, it does change the way you think. It very much forces you into what is also known as a very strongly participatory mode of working with other people and getting the best of their experiences, insights and knowledge to influence the structure and content of a course right the way through even to what may be preferred and best-bet delivery methods and things like that. You are working with a range of people. I might add that the benefits of that sort of process have not only been high-quality products at the end that are highly relevant, as I made my point earlier, but we have increasingly found that the participants in that—whether they are advisers, agency people or what have you—are getting a lot out of that process as well. It has

often made them think about what they are doing, how they should be doing things and so on to be more relevant to people out there in the bush.

Mr WINDSOR—How do we improve that back at the training coalface? What do we have to do that we are not doing now?

Dr Taylor—In some areas, people are not doing that process. Parts of the VET sector are doing it but, at the tertiary sector in particular, there are an awful lot of courses that are being developed on the basis of an individual's perceptions of what people need to know and be able to do. For example, when I first went up to the University of Queensland, I had a number of people ask me the question: 'Why aren't you just sitting in the office writing your courses?' I explained to them why, but a couple of people said: 'Don't you know your stuff? If you knew your stuff, you wouldn't need to go out and talk to people.' I was quite stunned by things like that. Clearly, there is a perception that, if you are an academic or something like that—in some areas, not all—that you know your stuff and you do not need to have your ideas shaped or formed by other stakeholders in that area.

CHAIR—I want to pick up on that point. During the evidence taking, it has been plain to me and I would say plain to the rest of the committee members that not enough emphasis is placed on discussions with the stakeholders that are affected by the problems that we have with rural skills shortages. Do you think that is a true assessment of the problems that are being created because we do not talk to the stakeholders and people are putting out courses under the misnomer that they know best?

Dr Taylor—I think that is a problem in a number of areas. It is a problem because for so many of the big issues we are grappling with—for example, issues like salinity—there is a simple symptom, but the causes are very complex. Often, people are taught about things from a very narrow disciplinary perspective or a narrow sectoral perspective, so they get that view of the world but, all too often in the number of our courses, we are not asking the question: that is the positive benefit of you doing this management strategy or that one, but have you thought through what the negative implications are? When it comes from one discipline or one sector or perspective, it often misses those other perspectives that a group who might also be impacted by those activities might have on that.

I will make a quick observation. I am involved in the board of the desert knowledge CRC and have had input into a number of CRCs. A number of them are trying to grapple with these issues, but there are some that are still taking a rather narrow disciplinary perspective or a narrow technological perspective to addressing issues. Again, it comes back to my earlier point that this is not uncovering some of the issues that really ought to be considered before management decisions are made or things like that. That is my point.

Mr ADAMS—I am pretty interested in the part of your submission that criticises the VET programs, claiming that they deal with bits and do not come together in a holistic way. How does your program make that work differently? I see in your brochure that you have a learning pathway certificate I right through to a doctorate. Governments of all persuasions have tried to do that for some years. Not everyone goes from a certificate II to a diploma, but there certainly are some people who want to have a pathway, and we have never been able to put that together,

have we? What is your solution? How do you offer what you are offering to try to bring that together?

Dr Taylor—Can I go back first. We are not operating at the VET level. We are doing a few courses in AQF levels V or VI, but basically from our analysis we felt that that was reasonably well served and, in terms of the alignment of some of that work with the express needs, it was reasonably well aligned. We identified a number of areas where things were not being delivered, and we have developed some short courses which have now been mapped across competencies and for which people can get a qualification by doing a suite of those short courses—for example, an advanced diploma.

After our analysis of all the VET programs, the undergraduate programs and the postgrad, we decided to zero in on providing postgraduate course work. You may recall that I identified 156 undergraduate programs. I did not see a lot of point in confounding and confusing that market any further. We have done things where, for example, people can come in and do particular course work. We know that there are a growing number of people who either have had recognition of prior learning or have worked up to that advanced diploma level who are thinking of getting another qualification, but they find that the notion of having to do a degree over three or four years is a huge psychological barrier. Part of the learning pathway is to identify that there are other ways in which you might want to get further qualifications. You might want to get further knowledge and have it backed by qualification. There are a growing number of people who are interested in that.

We very strategically try to add value to what was already out there in the market by doing a few short courses which also can help some people appreciate that this learning stuff is not as bad as they thought it was. You may recall that I have alluded to the fact that fear is an important part of it for around 16 per cent of the people who live in rural and regional Australia. They fear being embarrassed and they fear technology. They have often had bad experiences at high school and things like that. It is a way of getting them into it. Again, from our work on market for learning, around 50 per cent of the people who live in rural and regional Australia have a positive attitude to learning and will make some positive steps to learning in the near future, and that is very good news. What we have to do is to provide material that is relevant, practical and accessible and so on and where they can access it.

CHAIR—And affordable.

Dr Taylor—Absolutely.

Mr ADAMS—I thought you made a very good suggestion about not only having an industry based panel but making sure we have a broader base than that. Can you outline that and give us your feelings on it.

Dr Taylor—Yes. That came about through our needs analysis process, where we tried to get mixed stakeholder groups together. We did 19 of these in the range lands. We might have a group of anywhere from 16 to 20 people, and around half of them would be producers or producer families, either cattle or sheep, but the rest of them would be agency people. Depending on where we were, they could have been local government, Indigenous groups, mining, tourism, conservation and so on, and we would bring them in. Every time we ran those, the evaluations

from the focus groups were that people were surprised at the views of some of the other stakeholders. They were surprised that they were thinking about common issues. In fact, they were closer than they had thought they were in terms of their appreciation of needs and things like that. Time and time again, when you bring groups together like that, if you can do it in a reasonably neutral way where you are not asking people to paint themselves into one corner or another, there can be an extraordinary amount of learning as to how the other groups think and so on.

I might also point out that, in the needs analysis we did, a whole area of stakeholder engagements was identified as the most important thing for people's future success in the range lands. It is quite interesting. Some people would naturally think, 'If you could turn off an extra couple of kilos of beef, that would put a bit more money in your pocket.' All those things are right but, if you think about it, if another stakeholder group comes in there and says, 'I'm sorry; there's no more cattle in this country,' or 'You can have cattle but you can graze them only this way or that way,' and your arm is so far up your back that you cannot do anything, then you have a problem.

People are starting to realise that this whole business of effective stakeholder engagements is a critical part of the future. The industries, agencies and so on are recognising that. These other groups often will bring a different perspective. It is not saying that one is right or wrong, but they will challenge the way you look at things and challenge the way you think. When we look at so many of these issues in the future—whether it is sustainability of a region, salinity or things like that—we will have to bring a mix of the stakeholders together if we are going to chart a path that actually will deliver some reasonable outcomes and benefits in the long run.

Mr MARTIN FERGUSON—Gatton, the old agricultural college, was a good CAE, wasn't it?

Dr Taylor—Yes. In fact, I went there.

Mr MARTIN FERGUSON—With postgraduates it is two years by correspondence, isn't it?

Dr Taylor—The courses that we are now doing are all distance. It depends upon the level. All but one of our students at the moment live and work in the rangelands. They are all doing it part time. So that mechanism to do, for example, a graduate certificate can take them two years.

Mr MARTIN FERGUSON—What is the cost?

Dr Taylor—The cost of something like that is around \$8,000. The costs are actually in this brochure. A masters can be up to nearly \$24,000.

Mr MARTIN FERGUSON—You have been critical, correctly, of some of the VET courses and some of the undergraduate courses. One of the issues raised in this inquiry is whether or not we have thought about going back to specialist agricultural colleges more focused on the needs of industry and the community, therefore leading to a properly focused and structured postgraduate course, even potentially linking in VET. What do you think about that type of idea? Really it is unwinding all the mistakes of the last 20 or 25 years.

Dr Taylor—Given the funding is dwindling, there is some merit in that as opposed to the laissez-faire system we have at the moment. At moment, as I see it, there is some change being driven through the educational sectors—it is market driven. It is a fairly slow process, it is a fairly inefficient process and there is a lot of wastage of resources through that process. There is some need for stronger alignment between what is needed now and what will be needed in 10 to 15 years time, as I concluded in my opening statement.

Mr MARTIN FERGUSON—If we were to go down that path, what types of recommendations would we need to make that would be of assistance to try and get such a model up?

Dr Taylor—I believe you would need to engage a pretty wide group of stakeholders about that. It would need to be a pretty participative process to identify where you need to be in five, 10 or 15 years time and to work towards that in terms of what are the appropriate skills to meet that future situation, what are the best places to draw those skills from et cetera. You would need a fairly structured process to do that.

Mr MARTIN FERGUSON—If that outcome were to be pursued, that would also potentially create better opportunities for strategic alliances with banks, pastoral companies, mining companies et cetera because you would be producing an employee that meets the needs of those workplaces rather than running around looking for donations.

Dr Taylor—It could help because, again, particularly if those banks and some of those other groups that you refer to were involved in that course development process, that would get around a lot of these perceptions of things being not particularly relevant, not practical et cetera.

Mr MARTIN FERGUSON—That is the problem now: ‘Why invest in your college when you are producing a graduate who is potentially useless to us?’ That is it in a nutshell, isn’t it?

Dr Taylor—In a nutshell—present company excepted, if I may.

Mr MARTIN FERGUSON—You are a graduate of the old system, when it actually worked.

Dr Taylor—I just needed to clarify that.

Mr MARTIN FERGUSON—CAEs were better. It seems to me that we created a system which is failing us, because everything had to be university.

Dr Taylor—Yes, and the universities are fine but not for everyone. As I said earlier, there is an interest in some people to go to university and there is an interest in some people going to postgrad, but not everyone wants to do those. We have got to have a range of options out there because the industry and the community do not necessarily need one-size-fits-all type people. That is not going to underpin a rich community.

Mr SECKER—Following on from that, I assume that rangelanders are very similar to what we would call pastoralists in South Australia—very practical people. I noticed that you used the term ‘practical courses’ a fair bit during the time, but if you look at the actual courses they seem to be more theoretical. It might be nice to know about sustainable rangeland production and so

on, but if you cannot fix a windmill you will not have any alive cattle left after a while. Do you still get complaints that you are not practical enough or are you not aiming for that market?

Dr Taylor—There are two things about that. The courses that you are looking at are postgraduate level courses. The students taking those courses at the moment range in age from 25 to 57, with the vast majority of them in their 30s to 40s. In fact, half of those are owner-managers of properties and the other half would be advisers and land care facilitators—people like that. In terms of the basics, they have some of those things right. The actual course topics are what came out of the needs analysis. The 450 people we listened to identified those as areas that people needed training in.

Where we bring the practical into that is that the learning activities in every one of those courses allow people to apply the knowledge back in their region. For example, in the course on sustainable production systems and regions, one of the very early activities on that course involves them doing a stakeholder analysis in their region. What they are identifying is: who are the key stakeholders at local, regional, state and even national level? Then I try to assess the influence that those people have on what they do and how they do things in their particular region. We always try and draw them back so that they do have some practical implications.

For example, another aspect of that course is that we ask the students to identify a sustainable enterprise, under a definition that we pose, and then get them to do a case study: writing about what it is, what the things were that forced people to go down certain pathways, what the benefits have been, what the costs have been, where they are going from there, and so on—forcing them to actually apply that knowledge either on their property or enterprise if they are an owner-manager or back in their region if they are an adviser, a land care facilitator or something like that.

Mr SECKER—So it is not like a certificate of agriculture education and it is not planning to be—

Dr Taylor—That is right. There is a whole suite of courses that are offered through agricultural colleges, TAFEs and so on and they are highly appropriate to skills in windmill maintenance 101 and things like that. There are plenty of other things. We decided that there is no point in competing with that at all. We are trying to add value. The courses that we are putting on the market try and address the current and emerging issues that are going to influence people's success in the rangelands in five or 10 years time. That is the focus we have taken.

Mr SECKER—I think this has been partly asked before. You say that access to educational opportunities is limited. What can we as a government do to try and fix that problem?

Dr Taylor—The data is fairly clear that participation rates in rural and regional Australia are only half that in urban Australia. A number of things can be done. One of them is to come up with mechanisms by which the education can be got into those remote areas.

Mr SECKER—I just need to clarify something. Participation rates in what area—in a certificate course or at graduate level?

Dr Taylor—I am particularly talking about the higher education area. The way to address that is to simply get into those regions. We offer our courses in intensive mode in regions, where a group of people can work together, but also a fair bit of our work is in distance mode. A significant part of our assessment is online. It is not that we are delivering materials to people online—they get that in hard copy—but we are giving them the opportunity to discuss some of the current and emerging issues with other people in other regions. For example, at the moment I have students in Karratha, Leonora, north-western Victoria, near Condobolin, Bulyee, Charters Towers and so on.

What they gain from observing and discussing issues from their different perspectives that come from their patch of country and so on is quite fascinating because often in another region an issue may have a different slant or they may not even see it as an issue. Those sorts of discussions are really critical. This is informal learning, which is just as valuable as some of the structured or formal learning that students should be exposed to. We encourage that very much. Part of it is to try and start to seed a learning community in some of these remote areas.

Mr SECKER—In a different area are the CRCs, which are relatively new, I suppose, in our whole education process. I had not heard of them before I became a member 7½ years ago. Every industry group seems to now want to have a CRC. In your submission you are saying we have to look at this model and make some pretty big changes.

Dr Taylor—No, not to the CRCs. I think the CRCs are achieving quite a lot. I am saying that some of the CRCs in terms of the educational products that come out of them still have a fairly narrow focus on some of the bigger issues. They are either taking a technical focus or a relatively narrow disciplinary focus. I have a lot of faith in the CRCs generally, particularly in the way in which they are linking research groups like CSIRO, industry groups and so on. There are lots of positives coming out of that. My comments relate particularly to the educational outputs. They are still fairly tight and fairly narrow.

Mr SECKER—How do you think we can improve that? Are you suggesting greater community consultation or more needs bases? How can we improve on the CRC model?

Dr Taylor—I think some of the CRCs that are addressing the bigger issues are grappling with some of the types of education and training that are relevant to the bigger issues. I think the biggest thing with some of those what I call narrower CRCs is that their stakeholder mix, the people they consult with, is still a very narrow group. It might, for example, just be producers and so on. Let us say they are dealing with something in relation to the biodiversity implications of grazing. They will need to have a wide range of stakeholders around that table thinking about what are the issues that need to be addressed, what are the implications of the outputs of the research, how do you communicate that to the key people that have an interest in that and so on. It is a variant on that model and who is involved in some of those CRCs.

Mr SECKER—So having more stakeholders involved would help.

Dr Taylor—In some of them. But some of them are already well down that path.

Mr SECKER—If the CRCs are narrowly focused it tends to be because they have a particular problem they want to get fixed up and if they have too much of a broad brush approach they will

be frittering away resources all over the place. You are just saying we should get more stakeholders involved in the process so we can help the CRC model.

Dr Taylor—That is the dilemma. We are between being very narrow and very broad. I think the trick is to say that if something comes out of a collaboration like that it is important that we do not recreate some of the problems that we have had in the past, where we have come out with narrow technological or disciplinary based recommendations which probably were not analysed enough to look at some of their negative implications. Once we applied those, we found they had a sting in the tail. It is about trying to avoid some of those negative implications and negative consequences that come if you look at an issue from a narrow perspective. That is the nub of my point.

Mr SECKER—I am not trying to put words in your mouth, but you are trying to get better outcomes, as I understand it, through looking at what might happen as a result of a narrow focus. So you are consulting other groups and asking, ‘What effect does this have on you if you do go down this path?’

Dr Taylor—That is exactly right. That will avoid some of the negative implications of some of the technologies and things like that that have happened in the past.

Mr SECKER—It makes sense.

Dr Taylor—It is not a radical change, though. It is just a slightly different way of doing business and it is recognising that other people can have some valid input in that area and do have a valid perspective about some of the things that are happening in that area.

Mr SECKER—I can see the sense in that.

CHAIR—Do you think there has been too much emphasis on appropriately accredited individuals and less emphasis on skills acquired over decades of practical application? We have heard evidence that, as an example, a farmer who has used chemicals for decades, who is very adept at using them and who is very conscious of the way in which he or she uses them is then required—through state organisations pushing the occupational health and safety issues—to undertake accreditation for handling those chemicals, which is costly and in many instances time consuming for people who are just trying to get on with their jobs, remain viable and keep agriculture operating. Would you like to make some comments on those issues?

Dr Taylor—This is not really my area of expertise. I do hear those sorts of issues raised from time to time. It is just one of these trends that seem to be occurring in agriculture worldwide. That is, if you are going to be an operator, in order to be allowed to operate you have to, to some extent, be expected to gain some accreditation of the skills that you have. If you look at what is happening in other countries, even to be a farmer you need formal qualifications. If you look in some of the other manufacturing industries, again you need qualifications to operate equipment. It is all about standards. I suspect some of these issues will become increasingly important when we try and market our products overseas. It is all about saying, ‘We’re operating according to best practice, and our products, as a result of that, meet certain standards.’ I believe the requirements and the expectations for things like that will only increase over time.

CHAIR—The reason I asked the question is that there is a general acceptance, from the evidence that we have taken and the discussions that we have had with individuals, that we are perhaps penalising those people who have all of the skills, and the capability of picking up all the practical skills, in agricultural and pushing them away from continuing in agriculture—particularly the young people coming through high school, as an example, who may not have the capacity to go into tertiary education and take on the sorts of qualifications that are offered by universities but who want to work on the land. We are losing those sorts of people from the land because they are frightened of their ability to cope with the technology and the qualifications that are required for them to work in the industry. Do you think that is a problem?

Dr Taylor—Again, I am tending to work a bit further up that learning pathway. I would have thought that with recognition of current competencies and recognition of prior learning, such as training, those processes were meant to be simplified so that people could actually get a qualification reasonably easily if they wanted one. I did not understand that that was a major barrier for a lot of people. The options are there.

Mr WINDSOR—The point is, though, that in a lot of cases the client—the person who would have to be subjected to some training—does not want the competency, in a technical sense, that they may already have in a practical sense.

Dr Taylor—Surely that is their choice, up to a point, isn't it?

Mr WINDSOR—No, that is one of the problems.

Dr Taylor—They are being forced into getting it.

CHAIR—The outcome is that a lot of people, particularly the younger people that are coming in to follow their parents, are saying, 'I can't cope with this,' so they move out of the industry and go elsewhere. We are losing from the industry that depth of skills that we require at that level.

Dr Taylor—As I say, I have not been exposed to examples of that myself, so I really cannot comment any further.

CHAIR—What is it that drives educational facilities such as yours to offer courses? Is that driven ostensibly by the need for training in certain areas because of the way technology has improved or is it purely and simply related to the remuneration that you receive for certain courses, at the expense of courses that could be offered to enhance an industry and keep an industry viable? An industry that is currently in the forefront of those concerns is the beekeeping industry. There are no educational courses offered in beekeeping right across Australia. As a result of that, the beekeeping industry has to import qualified beekeepers from outside.

Dr Taylor—I can make a couple of comments. In the particular case of Rangelands Australia, we were actually established and set up by Meat and Livestock Australia and the University of Queensland to address the findings of a national survey which identified that there was no rangeland specific training. What there was in terms of training was not seen to be particularly relevant to the rangelands and did not address the issues of integration of economic and production issues. We were very much set up to fill what was an identified and recognised need

across Australia: that there were no rangeland specific courses. This was seen to be particularly important by groups like MLA and several other industry groups that were involved in scoping the need for this and establishing it.

CHAIR—We have also heard some concerns centred around the lack of emphasis on foresters, as an example. We have some very good foresters in this country and because of their skills they are being poached by overseas groups. There does not seem to be much emphasis in terms of training courses to fill the gaps that are being created there. Would you like to make some comments on that?

Dr Taylor—Again, I am not an expert in the area of forestry, I am afraid. You would need to talk to forestry people about that.

Mr ADAMS—Is there no potential out there in the rangelands?

Dr Taylor—In terms of forestry, it is more about bush tucker and native flora culture. There is some work on timbers—using mulga and things like that—but it is more a diversification option than it is a stand alone industry. In other areas, such as in New South Wales, there is cyprus pine and things like that. There are some products that are useful, but it is not the primary industry in much of the rangelands.

Mr SECKER—Was there any reason why Rangelands Australia did not secure sponsorship from pastoral companies or banks or corporations of any sort? I know you need to consider vested interests and conflicts of interests and so on.

Dr Taylor—There are a couple of things. Initially, I might point out that that mood has changed. It is one of those typical issues where you have to show the colour of your flag a little bit. In the almost 12 months since that report has been written, there have been a couple of changes. We are talking to a couple of these groups very seriously, and they will be getting behind us. Similarly, we are hoping to have an announcement from the Australian government minister in relation to some other activities that we have proposed as a second phase. Part of it was because of the stage the business was at in a business development sense.

Mr SECKER—So it has changed a bit.

Dr Taylor—It has changed a little since we originally put that in.

Mr MARTIN FERGUSON—In terms of keeping people in the industry, we have received a fair bit of feedback from interstate about the agricultural industry generally having real trouble keeping workers because of competition from the mining sector. Are you getting much feedback on that?

Dr Taylor—There is absolutely no question that that is a huge issue out there. We talked about that at several meetings. If I go back, it has been getting some pretty high press and so on for two or three years, and it has not gone away at all. It is about pay, but one of the things that I keep trying to remind producers about is that when someone decides to walk out the gate, you have lost them.

One of the important things that producers need to think about these days is that if they have employees who are of generation Y, they have a whole new raft of expectations when they come to work for you. They expect fairly high levels of people management. They expect career opportunities. They expect developmental opportunities. If the farmer does not have the interpersonal skills, the knowledge or the foresight to provide both training opportunities and skilling opportunities then people will walk. There are some who are purely attracted to dollars but there are other motivators for people, and it has to be accepted that it is not just the dollars alone that suck people away.

Mr MARTIN FERGUSON—We have to look at the educational focus on how we re-educate existing managers to get smarter about how they keep their workforce.

Dr Taylor—That is exactly what these courses are about. We are finishing off developing a postgrad course at the moment which is about managing self and developing and retaining others. That is all about picking up those issues. It is for the clientele that we are dealing with, which is the 35 to 40-year-olds who have done their certs and diplomas and so on and are now at the level of being either a head stockman or a manager of a property, whether it is a family one or a corporate property. They are now grappling with these issues and we are very much zeroing in on trying to give them some skills in that area.

CHAIR—I am conscious of the time and we need to have a quick break. I thank you, Dr Taylor, for your contribution to this committee this morning. It is very important that we hear from those people who are trying to assist the agricultural industry with what is needed by government and, more importantly, where we are lacking in terms of what we are offering to the community in agriculture. It is also very important that from time to time we ask some questions that have a few warts on them because, if we do not solicit that sort of information from people, we do not know. We rely on you guys to give us information. Whether it is critical of government or critical of any other group in the community, if it is in the best interests of filling the void that is out there in research and training then we need to have the answers. Thank you for your contribution. It is very much appreciated.

Proceedings suspended from 10.47 am to 11.03 am

EASLEA, Mrs Jennifer, Council Member, Queensland Rural Industry Training Council

McCOSKER, Mr Michael, Council Member, Queensland Rural Industry Training Council

THOMPSON, Mrs Sheila, Chair, Queensland Rural Industry Training Council

WIGLEY, Mrs Yvon, Executive Officer, Queensland Rural Industry Training Council

CHAIR—I welcome representatives of the Queensland Rural Industry Training Council. Although the committee does not require you to give evidence under oath I should advise you that these hearings are formal proceedings of the parliament and consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as contempt of parliament. Do you wish to make a brief statement in relation to your submission or would you care to make some introductory remarks?

Mrs Thompson—I will make some introductory remarks. The Queensland Rural Industry Training Council has been in existence for getting on for 30 years. Its role has been to advise government on training issues. Its membership consists of all the agricultural industries within Queensland and, as well as that, it represents the amenity horticulture which is nursery, floriculture et cetera. It also is responsible for animal care and conservation and land management, so it has a very, very big and wide-covering portfolio. We are very active in the regions. We have an excellent network and work closely with registered training organisations and just about every facet of training within Queensland, including the Department of Primary Industries and Fisheries. In the past we have managed the FarmBis programs as well.

CHAIR—I lead off by thanking you very much for taking the time to come and give evidence to this inquiry. From the committee's point of view, it is very important that we hear from a broad cross-section of people involved in the issue of rural and regional training and research. In your view, what is the Queensland government currently doing well in the areas of education, research and advisory service? I am giving you a chance to promote the government here.

Mr MARTIN FERGUSON—If you so desire. Be careful, you are on the record.

Mrs Thompson—Michael, you might be well placed to answer the advisory and extension service side, because you are quite involved as a cotton grower, aren't you?

Mr McCosker—I have been involved in rural training for the last 20 years, first through the ag college system and, more recently, I have been involved with the cotton industry with its extension. I do not really think there is a hell of a lot the Queensland government have done well. I have seen a lot of changes—possibly too many changes—happening just for the sake of change. There are plenty of good intentions out there whereby industries have communicated with the government departments, trying to get the job done well. You just have to look at our skills shortage at the moment and our labour shortage in our industries to see that vocational training has just not been working for us. I believe we need to have a really close look at it and get it working for us. The only way to get this working is from the bottom up, getting producers

involved, and we seem to be going the opposite way at the moment. It is becoming a very bureaucratic movement, and I am becoming very worried about the whole situation. It is certainly not meeting my needs. I would like to see change and good positive action to rectify our problems.

CHAIR—Thank you for that. Do you think that part of the problem that you have just described—which, incidentally, is an issue that has been raised in evidence that the committee has taken before—is the overburdening weight of paperwork that people are being subjected to rather than offering something that is more practical in terms of allowing them to get on with their job?

Mr McCosker—Definitely. We are paperworked out. We have BMPs, plans for this, plans for that and plans for everything else, all with good intentions relating to natural resource management. A farmer nowadays has to spend many hours behind his desk, producing maps and evidence demonstrating this and that. All of this is for no financial benefit on his behalf. Most recently, we have seen the Queensland government trying to pass the expenses of this natural resource management back on to us all the time. The average farmer has not got the skills for this. They have not recognised this. They have not given us training to meet the needs of government in this area. They are just not meeting the mark in that respect.

CHAIR—In other words, picking up on your initial comment, we are creating a bureaucracy that is in itself building its own empire by creating additional pressure on industry to the extent that it is impacting negatively on industry.

Mr McCosker—Do not get me wrong: industry is quite prepared to go about this in the way we have in the cotton industry with the best management practice. Industry is prepared to lead the way in this respect and demonstrate good stewardship in resource management. However, the government tend to take a fair bit of convincing that what we are doing is good enough, or they tend to not work along with us but head off in different directions all the time. Producers always have to spend their valuable time trying to pull government back into line or work with government in their way instead of government trying to support and work with industry, if you know what I mean.

CHAIR—Do not get me wrong: I am not trying to put a negative spin on the government; we are trying to find out where the problems are right across the nation and what we can best do to ensure that those problems are overcome. The only way that we can get that information is to ask those sorts of questions of people like you. We need you to be open and frank about it, which you have been. As you are responsible for coordinating FarmBis, what have been its advantages and disadvantages as far as your group is concerned?

Mrs Thompson—As far as FarmBis is concerned, the advantages have been that it has given the opportunity to farmers to do more on the management side of training and develop their skills there. The disadvantages may be that, because of the way in which it is structured, they have not concentrated enough on the workers themselves. They are the ones who are of great interest to us, because we are interested in all facets of development on the farm and the profitability of the farm. Yvon managed this, so she might like to add some comments.

Mrs Wigley—One of the difficulties I saw was that there was no working together. FarmBis was at a higher level. The state government was providing funds for traineeships and the lower levels, but all through the FarmBis program, they just did not gel, which is probably one of the disadvantages because a lot of it was ad hoc and not carefully planned in regions and with enterprises.

CHAIR—In your submission, you recommend that input from industry and community groups be formally incorporated into government processes concerning education, research and extension and advisory services. In what way would this differ from current processes? How should the federal government incorporate industry and community input into its processes?

Mrs Thompson—We have recently taken workshops the length and breadth of Queensland. We have been to nine regions and cities. We have discovered a tremendous amount from this exercise. One of the things which we felt would be very useful would be to have regional reference groups who would get together community farmers with businesses, businesses and possibly trainers et cetera and have panels where they could discuss their needs, because it is through that that you get to the bottom of what skills are needed in the area. About a year and a bit ago, we also went to Charleville where we held a forum and made similar discoveries. In our opinion, we feel that there should be more done in the regions. We took a proposal to these areas, which was very well supported—80 per cent plus supported the ideas that we had, which was a greater involvement of the community and others in these groups.

Mr SECKER—We have received evidence that RTOs tend to cherry pick a bit. They provide some of the things but not all the things that are needed. But you have a different slant on RTOs. You are saying that the state training authorities are extremely input oriented and that time taken up in meeting the Australian Quality Training Framework requirements adversely impacts on the ability of RTOs to develop and deliver training programs. So you are coming up from the other side. Would you like to add to that.

Mrs Wigley—Quite often you might say that the ATQF standard says that you have to have this and you have to have that and, even though there might be a ‘but’, it is not always easy to meet that. In the rural industry is it better to have a highly qualified person delivering something in a theoretical way than to have someone developing the work skills for us? Gradually, what we have noticed in Queensland, is that our RTOs have dwindled in number. We have a smaller number each year of RTOs who are able to meet all those guidelines. Surprisingly enough, in the research we have done, we have found that, like farmers, training providers are getting older and they are not being replaced by anyone younger. A lot of their time is spent on administrative work, particularly if they have what we call a user choice contract. A lot of their time is spent on that when they could be out delivering in better circumstances than they do.

Mr SECKER—We have also had other evidence that it is very hard—and a lot of paperwork is involved in it—for recognition of prior learning and skills and that sort of thing. Do you find that to be a problem as well?

Mrs Wigley—We made a concerted effort in 2000 to make sure that our rural industries, particularly, became the RPL places. We were told originally that it would never work, but in the last five years we have had RPLd something like 880 rural producers. But, when we have gone backwards, most of them have said that the process, even at that high level, has been so

convoluted and so time consuming for people that quite often they would have been better off enrolling in a course. At that scale, it sounds all right, but it is even worse at the lower scales when you want to be RPLd at, say, a level 3, which is a beginning trades labourer level. The reports we get back are that it is more convoluted at that level.

Mr SECKER—I think you would agree that prior skills are often more useful in rural areas than academic skills.

Mrs Wigley—Yes. People will employ on your prior skills rather than on your qualifications. It is nice to have both.

Mr SECKER—How do you think we can quicken up this process? The common complaint we are getting is that we are not recognising existing skills, and it is convoluted, as you say. How can we wave the magic wand to quicken up this whole process and make it simpler—get rid of the paperwork?

Mrs Wigley—A bureaucratic system is demanded under the frameworks to make sure you have done it, and perhaps that is what has to be looked at—right at the basis of what the qualification framework says you can do and what you have to have.

Mr SECKER—As an employer, I am not going to look at 300 pages proving someone has recognised skills; I want to know whether they can do the job.

Mr MARTIN FERGUSON—How many years has it been in existence?

Mrs Thompson—For nearly 30.

Mr MARTIN FERGUSON—How are you funded?

Mrs Thompson—Very poorly. We receive \$80,000 each year from the government. A couple of years ago, as you possibly know, for various reasons an amalgamation was proposed for all the training boards. The rural industry fought against being amalgamated with food and forestry. We did it for a specific reason. As you know, rural people are fairly careful with their money, and we have a bit in reserve. We were being pushed in with two others who, maybe, were not as well funded. We were going to have an equal number of people on the board, with an equal say, but our role would have been hugely diminished. We managed four training packages. The other people, I believe, had only one each. The extensive amount of work that Yvon, our executive officer, had to do to keep in touch with all those people was very great.

Mr MARTIN FERGUSON—The others did not want to merge, did they?

Mrs Thompson—I do not think they would have minded merging with us as long as it was on their terms.

Mr MARTIN FERGUSON—I can tell you, forestry didn't.

Mrs Thompson—Forestry possibly did not. That is right, maybe they did not, but they finally did merge with food and we were allowed to remain as part of a cluster—which was quite a

relief because of the amount that we do, which basically means that the funding is sent in to food and forestry, who have amalgamated, and they send a cheque on for \$80,000 less \$1,500 for handling the cheque.

CHAIR—I do not want to move you away from your thought pattern but you said \$80,000 per annum from the government. Which government?

Mrs Thompson—The state government. We come under, as you know, the Department of Employment and Training.

CHAIR—What is your requirement to operate efficiently—what sort of money?

Mrs Thompson—We have just been doing a budget because now there is movement to discontinue that funding altogether and to close training boards down, so we have been looking at going in a different direction. Yvon, you have done some work on that.

Mrs Wigley—We would need \$200,000 to operate efficiently. We have done that in the past—as we have always done—by doing project work. Sometimes, for example, through DEST, through Commonwealth departments and through AusIndustry we get projects which sustain us financially.

Mr MARTIN FERGUSON—You would get a slice of money for delivering FarmBis, wouldn't you?

Mrs Wigley—We did, but we do not do it any longer.

Mr MARTIN FERGUSON—Did that help top it up over the years?

Mrs Wigley—It did but at the same time we had other projects which were as good as that one.

Mr SECKER—Did you have any problem with state borders with FarmBis having different set-ups?

Mrs Wigley—Yes, particularly in the border regions—where some of our towns have half the farmers in New South Wales and half in Queensland—we did have a lot of problems.

Mr MARTIN FERGUSON—In your submission today you talked about having just done a regional based assessment talking to people about what the future industry needs are. I would have thought after 30 years of existence you would know what the future or current industry training requirements are—what the emerging requirements are as against the declining requirements. It almost sounds as if you are reinventing the wheel.

Mr McCosker—I would argue that the rural industries change so rapidly that keeping up with the training requirements of an industry is an ongoing thing whereby you need a very close relationship with all the industries to enable that feedback to come in.

Mr MARTIN FERGUSON—I would have thought that was your core business that you are doing every day of the year without having to go out and do special consultations. I would have thought that was one of the primary reasons you exist.

Mrs Wigley—We do but every now and then we put it together. We do it every day of the week but every now and then we look at it in its entirety. We do it so that we can do a training plan so you can see where one industry crosses over into another industry.

Mr MARTIN FERGUSON—What do you think, therefore, about competency based training?

Mrs Thompson—I think that competency based training with the right trainer is excellent. My own experience is a degree from a university in England but I gained the competence through going out of my way to work in a practical sense on farms throughout Europe. That has proved invaluable to me in my own business, which is a nursery. I find that people who have that experience and also the underpinning knowledge as to why this happens and that happens, the physiology et cetera that is needed to be understood, is invaluable.

Mr MARTIN FERGUSON—The Queensland government just made a very detailed statement including additional money for a complete review of the apprenticeship system including reducing the period of the apprenticeships, creating apprenticeship schools of excellence et cetera. Has your council considered that proposal and what is its reaction?

Mrs Wigley—In all of the packages we cover, we only have one apprenticeship, and that is in turf. The greenkeeping industry has not agreed with the shortening of the apprenticeship time. After taking advice from industry, they made a submission to the state government saying they did not want to shorten it. As you are probably aware, we do not have apprenticeships in our rural industries. They are all traineeships. We do not have any in the animal care and management package, either. We presently have before the commission some apprenticeships in the rest of the amenity horticulture industries.

Mr MARTIN FERGUSON—What you are saying is that current proposals to reduce the period of apprenticeships from four to three years are acceptable, for example, for automotive engineering—repairing cars—but not for the turf industry.

Mrs Wigley—Not in their view, and I am speaking for the industry. We can only take advice from the industry.

CHAIR—What are your views about the idea of high schools working in relationship with technical colleges and year 10 students undertaking an apprenticeship type training program between year 10 and year 12, with that two-year apprenticeship training program under the supervision of a technical college being accredited to them as two years towards their full apprenticeship training period? In New South Wales, there used to be—and I think they are still operating—what we call technical high schools. That process worked in the technical high schools. What are your views about extrapolating that sort of process across the nation? Do you think it would assist the uptake of apprenticeships and speedy resolution of the shortages of apprenticeships in trades? Do you think that would be a good method of keeping young people interested in the trade that they choose to take up from year 10?

Mrs Easlea—My opinion is that this is a good avenue to get people back into rural workplaces, but we have to make sure that the training is at the same level as that happening in the technical schools. The training they do needs to be of the same standard as what is done outside that school based system. We need to make sure that these school based apprenticeships are well audited and that they meet industry standards, and that those schools meet industry requirements. One of the really important things about any training is that the training needs to be aimed at what is actually happening in the industry at the present time. Those schools need to be able to keep up with what is happening in the system. As far as keeping young people interested in rural apprenticeships, traineeships and industries, it would be good. It would be a good way of keeping them there and reinforcing that interest.

CHAIR—In line with making apprenticeships more attractive to young people and keeping them involved in apprenticeships, one of the issues that continually crops up in my movement around my electorate is that people are concerned about taking on apprentices who stay with them for a couple of years and then decide they want to go somewhere else. They waste two years in training. My suggestion—and I would be interested in your comments on this—to them was: why not use the \$7,000 that you get from the Commonwealth to look after the apprentice as a sweetener to keep them in the apprenticeship by offering that to them as a package at the end of their apprenticeship? Some of them have taken that on pretty positively and thought it was a good idea. I understand that there is flexibility in the system to allow them to that. What are your thoughts about those sorts of incentives to keep apprentices involved in the trade that they have undertaken?

Mr McCosker—Within our rural industry it seems to be very difficult to attract students, full stop. Anything like that I am sure would be a big advantage in attracting the students. As far as getting the students started with their rural training through the school system is concerned, I think that is great. I think it has limitations because of the type of training that our students need in the rural industry. They need to get out and do things on the job. Agricultural training in years 10, 11 and 12 is great, because it gives students a taste of what is out there and gets them to love the industries and that sort of thing, but there are limitations in just how much formal training you can physically do in a period of time. I think we should be concentrating on trying to harvest a crop of students to go into further training after they have completed years 10, 11 or 12. I feel that we should be trying in the school system to recruit them. One of our biggest problems is to try to get a number of students prepared to get involved in rural training.

CHAIR—Do you think that has something to do with the negativity of careers advisers at schools—the lack of commitment to the importance of agriculture as a skill in schools? We have referred to that attitude as a dumbing down of agriculture. Do you think the careers advisers at schools need to lift their games?

Mrs Thompson—I believe that quite often careers advisers just do not know enough about our particular industries and career paths. I am a bit different in my industry, which is nurseries, as I mentioned, from Mike's, which is cotton, because there is a career path and you can see where you are going—if you are in horticulture—but with agriculture it is a bit different. There needs to be a tremendous amount of educating of careers advisers across the board in Queensland so that we promote agriculture, horticulture and animal care et cetera as being very worthwhile careers—as you say, 'dumbing up'. We need to speak it up and speak positively at all times about our industries, because they are tremendous.

CHAIR—Do you think it is because many of the careers advisers are coming from an urban based background, or a suburban based educational learning background and do not understand the situation and have never themselves been placed in a situation where agriculture has been put to them as being a very important part of our national economy?

Mrs Thompson—That might be part of the problem. But I also think—and, again, I am speaking as a nurseryman and thinking of the trainers with whom I have been in contact—those who are advising on these careers do not get out into the industries enough to be able to understand how they operate.

ACTING CHAIR (Mr Adams)—We will keep exploring that issue. The rural industry is usually put down as an industry that is losing potential and is not worth as much to the country as it used to be. Do you feel that that is a negative point of view with regard to people going into training? If the industry is not going anywhere, why would I want to train in that industry? I would have other options to seek. How do you get young people to focus? Is that a fair assessment?

Mrs Wigley—It should not be. Our major exporters in Queensland are beef, then the fruit and vegetable industries and then the lifestyle horticultural industry—they are the largest ones. We still maintain a high level of profile in Queensland.

ACTING CHAIR—So you do not think there is any problem with people's attitudes in those industries—the perception of the general public?

Mrs Wigley—I think there is, and over these past years the drought, the movement away from rural communities and the competing interests of wages and things like that have been highly publicised. I do know that our training providers find it very hard to meet commitments of placing trainees in remote areas—we have some very remote areas in Queensland—and training that skilled workforce.

ACTING CHAIR—I guess the question is how you people deliver training in that area.

Mrs Wigley—Again, I think you have to appreciate that that starts right away with the cost of that delivery. It is much easier to encourage someone to be a trainee in hospitality on the Gold Coast than to encourage them to go out to a beef cattle property in Birdsville or Charleville and be properly trained and looked after during that period.

ACTING CHAIR—But it is all relevant, isn't it, to the industry?

Mrs Wigley—Yes.

ACTING CHAIR—If the industry cannot pay its way then why have the industry? I think that is how the world thinks now. That is how we look at things. If you cannot pay your way then the industry goes out of existence. The fishing industry says, 'You make us pay for the cost of making sure we're doing it properly.' But the public say, 'If you're taking too much out of the sea, we don't want you there.' Isn't it the same in rural industries? If it cannot pay its way to train then it will not exist in the future.

Mrs Wigley—I hope not.

ACTING CHAIR—But is that an assessment?

Mrs Wigley—I do not think it is a fair assessment. There are still difficulties that they face that are quite unique.

ACTING CHAIR—But it has always faced those difficulties. The changing nature of industry, whether it is producing beef or many other things, and the changes in horticulture, which I will come to in a minute, are enormous compared to what they were many years ago. Those changes are going to bring different pressures. How do we approach those and how do we get people to continue to want to be a part of those industries?

Mrs Thompson—To an extent it comes back, in my opinion, to urban people understanding the lifestyle and the positives about rural production and rural enterprises. Recently, just a week or two ago, QRITC assisted students to go from schools in Queensland out to Longreach to do a course in wool classing. I think that sort of thing needs to be far more encouraged to allow people to see what the lifestyle is. I have never been to Longreach to stay for any time until recently. It is a marvellous place and there are opportunities there, but the problem is moving some of the population out there. It is up to us to maybe promote it better.

ACTING CHAIR—People who live in the urban areas of Australia are basically concerned about how we treat stock, animal welfare issues, the degeneration of rural Australia and salt. That is what they are told about; those are perceived as the problems. How do we get people to look at that in a different way?

Mr McCosker—That is what I was getting at before. We spend half our time trying to explain basically what we are doing to combat those problems—

ACTING CHAIR—Countering the perceptions.

Mr McCosker—and counter those problems instead of utilising our technology to move forward. We seem to be spending a lot of time putting out fires within our industry groups. To give you an idea of the technology that we have adopted over the last, let us say, five years in my enterprise we have changed our cattle breed, for example, to a Wagyu breed to try to meet export demands. To do this we have had to adopt artificial breeding. We have had to do DNA testing with our herd and to learn new supplementary feeding techniques and that sort of thing to meet market demands.

With our cotton enterprise we have adopted genetic technology—Bollguard cotton and Roundup Ready cotton, for example. We have had lots and lots of changes in varieties of cotton and that sort of thing. We have had to change irrigation practices, because of the demands on us, and also for efficiencies economically. We have adopted techniques of improved fertilisation and that sort of thing with our farming techniques. We have adopted minimum tillage and stubble retention—all to improve our bottom line. We have adopted GPS technology, so we have two-centimetre accuracy with our farming system so we can accurately place seed and also we can meet a lot of the NRM outcomes that we were just talking about.

All this has been put upon us in the last four or five years. Producers spend half their time trying to catch up on and learn all this new technology. The trouble is that we are not getting it through vocational training; we are getting it through getting out there and struggling and learning ourselves. The education network is just not working for us.

Mr ADAMS—Is there a need to restructure training to deal with a modern world, a new way? If I could turn to horticulture, Mrs Thompson, horticulture has changed a lot. Mr McCosker just mentioned irrigation and there is a need to understand water and irrigation. Are there any specific courses that deal with irrigation and propagation? In the sorts of programs to do with plants, propagation and irrigation, is there any new direction? I would have thought they would have been reasonably exciting things to learn about and to build a traineeship around.

Mrs Thompson—There are and, speaking from the nursery end of all the lifestyle horticulture courses, they are pretty well up-to-date on the latest techniques and at this very moment there are courses being organised in the nursery industry that I know of. Of course there is an irrigation association as well that feeds into the Queensland Rural Industry Training Council as we meet with them. So, yes, there are those courses.

Mr ADAMS—From the cotton industry, is there training for irrigators to bring people up to speed on that?

Mr McCosker—I have had a fair bit to do with trainees. In our industry we have tried them and they do not really work. I would like to give the agriculture colleges in Queensland a plug because I believe that over the years they have served a really important role. At the moment they are struggling; they cannot get student numbers. The great thing about these ag colleges is that they harvest young talent for us. Through the two-year courses that they have been offering over the last 20 or 30 years they have turned out numerous leaders. If you look at the leaders in the rural industries, a lot of them are products of these agriculture colleges.

Mr SECKER—Is this secondary schooling—years 10, 11 and 12?

Mr McCosker—The students traditionally left at year 10 and went into these ag colleges—Longreach, Emerald, Burdekin and also Dalby. The colleges also offer a diploma-level course, nowadays. The products coming out of these colleges are good because the students that have been through them for a two-year period have had the time to practise these skills so they come to the producer with practised skills. As an employer, I dream that you could employ people to bring skills to your enterprise but, at the moment, that just does not happen. You employ people and then you spend the first year of their employment training them up to have the skills that you require of them.

Mr WINDSOR—Firstly, congratulations on your submission. I refer it to the secretariat, because the case studies in this document are well worth having a look at. They encapsulate some of the problems and the solutions in terms of what we can do in the future. I am particularly impressed with case study 1, which embraces a lot of the precision farming technologies. That removes the myth—the perception—that is out there that there has been a dumbing down. Just in that one case study there is an incredible example of up-to-date technology being used for a whole range of reasons, some environmental, some profitability et cetera. I highlight that as a case study to look at further down the track. Cotton Basics is

something I want to mention and which keeps being talked about here. Are you involved with Cotton Basics at all?

Mr McCosker—Yes, through my connection with Cotton Australia and also through the Cotton Research and Development Corporation. I am on the ACGRA. I am familiar with Cotton Basics. I must say that it is an untried program at this stage. They have pulled together national competencies. Since we pulled Cotton Basics together, we have had other forums in the cotton industry, and we have been trying to get together our training requirements so we can effectively communicate those to RTOs and try to get training happening in our industry.

Mr WINDSOR—We have been told by a number of groups that it seems to be an example of something that is actually reflecting the needs of the client rather than the document designer.

Mr McCosker—That is quite correct. Basically, the producers have got together and pulled out of the national competencies those competencies that relate to our industry. What it is lacking is somebody who can pick that up, keep it relevant to our industry and train people. The agricultural colleges need to embrace the Cotton Basics program. All it is at the moment is a list of competencies. That needs to be pulled into a program and effectively delivered. That is the hardest part: delivering it to make sure that we get the outcomes that we are after.

Mr WINDSOR—I have two more brief questions—I know we are pressured for time. A number of groups have mentioned—as you have today in a similar vein—how the agricultural colleges are delivering an article that is client based and that we need to examine that more. The contrary seems to be happening at a state government level, where they are either being pushed out of existence, underfunded or submerged in the bureaucracy in terms of the costs involved in writing courses and those sorts of things. What do you see as their long-term role? Do you see that as a solution to the problem that we are dealing with, not only in terms of perception but in terms of delivery of the article to the industry? How far up the tree are agricultural colleges?

Mrs Thompson—I will start by saying that the agricultural colleges have been dealt rather a severe blow by comments made in the papers about being basket cases et cetera. Naturally, the morale fell and people left. I believe that we as an industry, and particularly this organisation, need to support the colleges and the direction they are now taking. In QIRTC's opinion, it needs to remain in place, but the new way in which they are operating needs to be given time to function. Yvon has done an incredibly detailed amount of auditing in the colleges. I will ask her to make some comments concerning your question.

Mrs Wigley—One of the things we would want to see change in the agricultural colleges is for them to have more highly qualified people. That reflects what the deputy chair said: that we are now going into a very technological age. We need far more skilled people. We want to see the industry hammed up a bit more. With that change in direction, the agricultural colleges will ensure that in the future the people coming out of those colleges not only have the work skills that Mike talks about but are able to adapt to changing technologies and are able to move very quickly.

One of the benefits that all of our colleges have is the high-quality properties that they own. Every one of our colleges has a property on which it is able to deliver a specialised field. There are five campuses and four colleges, but each one has a property. For example, the one in

Burdekin, because it is in the cane growing area, has a cane farm. Longreach has a sheep and wool farm. Dalby has cattle. It is the same as at Emerald. Both have cattle. Emerald has cotton and so does Dalby. So, as Mike said, the people are not only learning at the college but they are working while in training, more or less like a teaching hospital. I think that the colleges will eventually, because of their past history, deliver a product that will keep abreast of change.

Mr WINDSOR—What can the Commonwealth government do to assist that process?

Mrs Wigley—It could support them more financially, but I am not sure that that would resolve it. It is an immense change.

Mr WINDSOR—In your experience—and the Deputy Chair raised some very important issues—in terms of the future of agriculture, how important are ag colleges going to be? Are they just parallel with TAFE and other similar training organisations, or are they up there with other institutions? How important are they?

Mrs Thompson—I do not believe that they up there yet. As they are, there needs to be improvement. I believe that the various directors who have been appointed need to be given a chance to prove that they are worthwhile. My own experience of agricultural college is of having attended one myself, albeit one with a degree at the end and not a diploma. Nevertheless, they are extremely valuable. The one I attended had extensive college facilities and facilities for practical work, if necessary, although we did not do as much as they do at the colleges here. It would be a very sad day if that died. The colleges here have the opportunity to attract not only students from around Australia—those who maybe want to do tropical agriculture and production horticulture—but also overseas students. It could be a tremendous jewel in the crown of Australia to have them continue and to continue well. One of the difficulties is the salaries paid, which are not nearly high enough. I do not know if the Commonwealth government can do anything about that, but it is certainly an area that needs to be looked at.

CHAIR—I might round off this part of the inquiry by referring you to one of your case studies, which was centred around the beekeeping industry. I ask you as group: what support does your group provide to the apiary industry?

Mrs Thompson—Yvon has had quite a lot to do with them, so perhaps you would like to answer, Yvon.

Mrs Wigley—We encourage them. Whilst, in the training packages themselves there is not yet a stream for beekeeping, which is a bit unusual, it has been placed as a training package but it has not yet been approved. In the meantime, to keep it alive, we encourage them to take up trainees in that industry. We have arranged for a generic certificate of agriculture with emphasis on some competencies that would do it. We are working with the industry at the moment to develop a skills formation strategy which is in line with that required by the present state government. We have singled out and have funded, with some of the funds given to us by the Department of Employment and Training, some beekeeping competencies within the last year to encourage the industry to take up training at a level that will encourage some entry level people into the industry. We have also worked very closely with two of the private training providers, one of whom is a beekeeper himself, to keep in contact with the bee industry.

CHAIR—I thank each of you for the contribution you have made to the inquiry this morning. It has been very gratifying, from our point of view, to receive some sound evidence on issues. I compliment you on your submission, particularly in respect of the point made by Mr Windsor about the case studies. That part of your submission is a very good initiative. I thank you for giving your time to what we believe to be one of the most valuable inquiries that the government could have. All that we need to do now is put it into a report form with recommendations that ministers of the crown will hopefully take up and deliver on.

[11.56 am]

KEITH, Mr Donald Gordon, Private capacity

WHITTEN, Dr Maxwell John, Private capacity

CHAIR—Welcome. Do you have any comments to make about the capacity in which you appear?

Dr Whitten—I am representing the informal group of beekeepers and researchers who made submission No. 99.

Mr Keith—I am representing the same group.

CHAIR—Although the committee does not require you to give evidence under oath, I advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. I remind you that giving false or misleading evidence is a serious matter and may be regarded as contempt of parliament. Do you wish to make a brief statement in relation to your submission or some introductory remarks?

Dr Whitten—I will make a few comments about the problem. Don can then make further comments as a beekeeper. Then I would like to talk about possible solutions. By way of background, my interest is as a scientist—a geneticist, entomologist and research manager. I was Professor of Genetics at Melbourne university in the seventies and Chief of CSIRO Entomology in the eighties and mid-nineties. I worked on reducing pesticide use in Asia for four years with the United Nations, working with both farmers and governments. I was chairman of the Honey Research Council for six years when it was first set up in the mid-eighties. And, at the moment, I am the government visitor for the forestry CRC and for the CRC for national weeds. I am also an amateur beekeeper, but that would rate very low on the scale of my contribution.

We have been fortunate that the problem has been articulated in a number of forums, one of which of course was *About the House*, and we thank those who were responsible for that. I think it has also been covered in a Sky television program, and it will at least be flagged in a *7.30 Report*. So this small industry is making waves. One inquiry was reported in September last year. It was a CIE managed inquiry funded by the Industry Partnership program of the Department of Agriculture, Fisheries and Forestry. In that report, entitled *Future directions for the Australian honeybee industry*, they made the comment that the industry has a good story to tell. By that, they are talking about the unsung heroes.

The industry itself is a small industry. We are talking about fewer than 1,000 beekeepers and a value of the bee products of less than \$60 million. Having heard your comments before: of course if it cannot pay its way it could go to the wall. But the CIE studies have shown that, if you were to withdraw honeybees through something like, say, the introduction of a disease or pest such as the Varroa mite, the immediate impact would be about \$1.7 billion, of which half would be borne by the producers and half by the community through increased costs and so on. The flow-on effects would be a further \$2 billion. The job losses in the short term would be

about 9,000 and in the longer term, given the flow-on effects, something like 20,000. So we are talking about a small industry that has very large external effects.

To give further credibility to that, we can look at America, which often shows us the way not to go. In terms of the beekeeping industry there, in the fifties there were about five million hives. Currently there are about two million hives. That reduction has been caused by things like pesticides and diseases. At the moment, because of the presence of Varroa mite, that number of two million is shrinking.

The almond industry in California alone is worth about a billion dollars. They need a million hives to pollinate it, and the whole country has less than two million hives. They are importing hives from all over the place to try to prop up that one industry, which is 100 per cent dependent on honey bee pollination. They also estimated that the immediate cost of the loss of the honey bee industry is something like \$US15 billion. That figure is comparable to what we are talking about in Australia. The problem is not just the beekeepers but those flow-on effects.

Don's company is the largest honey producer in Queensland, and he has just recently retired as chairman of Capilano, the largest honey packer in the Southern Hemisphere. If Don could, perhaps from a more personal perspective, talk about the problem then I could come back to suggest some solutions.

Mr Keith—I would like to refer my comments only to research. I would like to preface what I am about to say by saying that the honey bee industry over the years has been very independent. It has found its own way with a very limited amount of government support. The significant area where the federal government does give industry support is in the dollar for dollar subsidy of honey levies utilised by the honey program in RIRDC. The issue though is that, as Max alluded to, the honey levy is only on honey, yet through the research that is generated from that levy the industry needs to look after and maintain the scientific knowledge to maintain the health of the industry, which is not only responsible for \$60 million worth of farm gate produce; the most recent research document showed that honey bees per se are responsible for \$1.7 billion worth of pollination in other areas of Australian agriculture. The honey bee industry is under pressure for various reasons. The research effort is limited by the levy on honey, and the profitability of the honey industry waxes and wanes.

To give you an example of the tenuous thread that our research hangs from, the drought from 2000 to 2003 saw a reduction in production down to 60 per cent with a cumulative loss of research over those years. Honey production and research levies equate against the honey sales. The honey research council was in a parlous position in 2003-04 regarding its funding. The industry response to that was that the Australian Honey Bee Industry Council meeting did something that I have never seen in my rural life before: it unanimously approved an increase in the operative research levy of about 85 per cent. Even that will only to some extent touch the surface of the research that we are confronted with.

Over the same period we had an incursion of small hive beetles into Australia. Meeting that challenge required channelling of scarce research resources. Over the same period the north island of New Zealand has had an incursion and spread of Varroa destructor, the worst honey bee pest in the world. At this moment the south island of New Zealand and Australia are the only places utilising European honey bees that are free of Varroa destructor.

Our major concern is how to maintain the industry when that animal gets to Australia. We have very good quarantine, but you could probably fit a dozen bees into a matchbox, so anybody who wanted to break quarantine could do so reasonably easily. If that happens and we are faced with proportionately the same downturn in hive numbers as in America, you can imagine what is going to happen to our other primary industries. The needs are enormous. I present a document to the committee outlining some products from the developing medical honey side of the industry. This was mentioned in our submission. The development of the medical industry side of honey has the potential to provide ongoing and enormous financial benefits to the industry. The problem we are facing is that the company developing these products is focusing on medical products rather than alternative health products, and the cost of getting medical products into the medical system is enormous, largely because of the cost of clinical studies. That is another area where the research funding could be utilised.

Mr ADAMS—Perhaps you could name some of those products to get them on record.

Mr Keith—The main medical product is Antibacterial Honey Barrier. In the 1990s scientists found a special antimicrobial factor in some honeys that are only produced in Australia and New Zealand. Following that discovery this product has been developed for antibacterial purposes for sale through chemists. Also, this company is focusing on developing the product for use in hospitals because the antibacterial properties in this honey can cope with the bacteria that are now resistant to all antibiotics.

CHAIR—So it could have an effect, for example, on golden staph?

Mr Keith—There is information in this document on the level of control of golden staph that it can achieve. From a financial point of view, of course, the company producing this wants to make a profit out of it. From a humanitarian point of view, we have available a natural product that could save lives, save limbs and provide a lot of relief to humanity.

CHAIR—Could you give us a brief overview of each of the other products?

Mr Keith—Antibacterial Wound Gel is a product that is developed with Medihoney but is easy to apply. Medihoney is rather sticky and some people find it difficult to apply. Medihoney Active-Plus is an oral medicine, so you take a spoonful if you have a throat infection, for instance.

CHAIR—I have used it; it is good.

Mr Keith—The most popular product is the eczema cream, which is used for a whole range of skin disorders, and a very new product is the antibacterial nipple balm. Those are Medihoney products. The company is based in Queensland and is a wholly owned subsidiary of Capilano Honey. Capilano Honey is a company that was listed two years ago on the Bendigo stock exchange, but over 90 per cent of its shareholders are beekeepers and retired beekeepers.

CHAIR—Do you have some publications that you could table?

Mr Keith—I have a presentation on Medihoney, which is a proprietary company.

CHAIR—Could you leave that with the committee?

Mr Keith—Yes. And I have a file here of case studies that precede clinical studies.

CHAIR—Thank you, Mr Keith.

Dr Whitten—Can we talk about solutions? You might think first up that the honey industry is small and not viable—let us replace it with the pollination industry. The only way you can have a pollination industry is by having a honey industry. Beekeepers are needed to provide the pollination service, and they require honey. There is a range of threats to that, particularly disease, pests, access to public lands and the value of the honey. If there are ways in which we can improve the profitability of honey production, then we are in a strategically better position to deal with pollination.

The first thing is the problem that the levy, as Don mentioned, is driven by the value of honey. It is not practical to find a levy mechanism that will capture the broader benefits. It is like the Horticultural R&D Corporation. It is very difficult to capture that. It is a classic case of market failure. I think the government has to look for another mechanism to identify the research opportunities and their cost, and fund that research. It may put that money partly through a competitive system such as the Honey Research Council, which is under RIRDC. But it needs to recognise that there is market value here and it should look at doing something about it. There is no doubt about the research opportunities that are out there that need to be addressed. We can talk about those later.

On the research side, that is one of the relevant topics. The other one, of course, is skills and training. Until last week, I had difficulty identifying a model which one may use. But last week I was in Adelaide for the week, reviewing the research in the weeds CRC fifth-year review because they are preparing a case for a third-round application for a weeds CRC. The parallel is this: the cost to Australia of weeds is about \$4 billion. That is the cost to agriculture in terms of lost productivity and it does not account for the environmental effects and things like biodiversity. So we are talking about a problem that is quite significant for the country.

We do not have weed courses within universities, but there are modules within universities. The weeds CRC has a budget of about \$11 million a year—\$8 million in-kind contribution and about \$3 million out of the CRC program. What really impressed me with that fifth-year review was not so much the research about risk assessment and new approaches to dealing with weeds but the education and community empowerment programs. That CRC is made up of a number of research organisations, state departments and the CSIRO. It has recognised that there is research knowledge being created within the CRC and there is a lot of other knowledge out there. It has put that together in a series of documents that are largely web based documents and it has engaged in a number of programs, one of which is the so called Weed Warriors program. The Weed Warriors program has been implemented in 102 schools in Victoria and South Australia. The success of that program was recognised last year by a CRC Association award for excellence. Peter McGauran gave that award. It has just been funded by NHT to go national and, in New South Wales and Queensland—I do not know about Tasmania—we will now see in the curriculum of primary schools a whole set of issues about weeds and about what the roles are. The kids are actively engaged in biological control. I think that by the end of this current CRC we will probably see about 300 primary schools engaged in weed issues. As the teachers say, this

is actually cutting right across the curriculum and dealing with all aspects of learning for kids, so it is not just about weeds and environmental—

Mr ADAMS—Real science.

Dr Whitten—Yes, it is real science. I heard John Taylor talk this morning about the education side. This is a model situation where it has taken education to primary schools. I will not talk about the university but I will talk about the VET sector, because—

CHAIR—I am conscious of time and we want to ask some questions, so keep it as brief as you can.

Dr Whitten—I am just about finished. Over 50 per cent of institutions in the VET sector that are now registered training organisations are drawing upon the material that is put together. I will leave the weeds publication. It is a range of topical issues, fact sheets and training manuals. Much of it is in electronic form. It is available on the website of that CRC. That is the material that is now being used right across the VET sector. I can see a model here for apicultural research, training and education in which you would have a group of institutions funded like the CRC. But there is no way in hell that a CRC on apiculture and pollination will get up. I can explain why. But if government recognise that it could put in place the equivalent of a CRC—a bit like it did with the rainforest and reef CRCs. The organisation that I would see as playing a role in this is the Agri-food Industries Skills Council. If they were the vehicle for helping this institution put together this knowledge and would make it available to the VET sector, then the market forces would operate out there. The VET sector would run all sorts of small courses and modules appropriate for particularly target groups. They would be the skilled beekeepers, the technical skilled beekeepers and the technical skilled pollination users—that is the whole bunch of commodities, and that is a much bigger group in the community.

Mr ADAMS—The issue is that we need assistance to get that information together and in a form that can be utilised.

Dr Whitten—Absolutely. There is a whole bunch of these things, like *Weedwatch*. As I say, over 300 schools will be using these resource kits—half the VET sector is concerned with training in catchment land care and so on. It is sort of a bottom up approach in terms of community empowerment in the education sector and the research sector, if it is under a model like the CRC program. It would need a direct intervention to bring that about.

Mr ADAMS—I just want to get that clear. The issue—and I am sure the committee is going to take this up—in the beekeeping industry is that there is not enough mass from the research component to drive us where we need to be in the broader research area and in building the training capacity. The evidence you have given us is that the government needs to focus on that and see if it can assist in some way to bring it up to a level?

Dr Whitten—I would not say that the problem is in the training of researchers. Researchers are quite adaptable.

Mr ADAMS—No, I meant that I think there is a problem with training and having enough people trained up in beekeeping. We are looking at the skill level. I think we received evidence that there is not enough skill training. That is what I meant.

Mr Keith—The issue is that we need a new model. There have been models before. At Gatton Agricultural College, which I went to about 100 years ago, you only have a small industry and a small part of that industry within range of that college. It needs to be a different model to the whole industry. A range of people are interested in the industry.

CHAIR—The harsh reality of it is that because the industry is small in relative terms, on a scale of one to 10, as I have described it, it does not rate politically with the people who need to sit up and take notice of the importance of the industry.

Mr Keith—That is an issue that we have been challenged by for a long time. It is not only that we are small; we are spread out. We are not concentrated in an electorate that is going to be the balance of power in any parliament.

Mr ADAMS—But the important issue arising out of the evidence we have received today is the pollination that this industry gives to broader industries, which goes unpaid for in many regards but plays a significant role—and we mentioned the \$50 billion from the beekeeping industry in America. That is the important point that we need to make.

Dr Whitten—The pollination sector needs that research and training.

Mr ADAMS—I know the forestry CRC is doing some research on pollination of trees in Tasmania. There would be some research going on. Do you know of any?

Dr Whitten—There is very little work on pollination. The organisations involved before were Gatton, Hawkesbury and the Waite, and there is no research and virtually no teaching in those places.

Mr ADAMS—There are all these other opportunities for industry development with the health issues that we have seen. Are there wild bees in Australia?

Mr Keith—There are feral bees. There are 3,000 native bees or something. Max would know more about that.

Dr Whitten—They are not significant. That is an interesting point, because feral bees are honey bees that have gone wild. If the Varroa mite comes into Australia, they will disappear. That is the story in the US. We would then be relying on commercial beekeepers. We have industries like the apple industry, which is now concentrated. Look at the list of commodities. Almonds and apples are up there. Without the presence of feral bees, we will become increasingly dependent on commercial beekeepers to provide those pollination services. I do not believe that there is a case for one institution technically training beekeepers. I think it is much better to have that information out there so that the VET sector will pick that up. People will run with modules that are appropriate to them.

Mr ADAMS—Thank you.

CHAIR—We have received a number of submissions to the inquiry highlighting a lack of institutional resources for the apiary industry. If the federal government was to support the provision of such institutions, what in your opinion should be the order of priority?

Dr Whitten—The priority for research?

CHAIR—Institutional resources for the apiary industry.

Mr ADAMS—Training as well.

Dr Whitten—I think that part of those resources should certainly go to the existing mechanism, which is the Honeybee R&D Council, which is part of RIRDC. That would then go out on a competitive basis. But, when you look at some of the major problems like pollination, how can one provide more effective pollination for crops in Australia and genetic improvement of honey bees and bee diseases? I think the model is the one I suggested before, which would be a cooperative and sort of virtual centre based around one institution like, say, the University of Western Sydney but with links with Sydney University and the Waite with Queensland, much like the CRC model. That way, you then have a critical mass of interactions just like the weed CRC. There is very little research on weeds done in Australia but, by bringing it together in one CRC, you have a very powerful force that has worked in the interests of a whole range of industries.

CHAIR—Leaving aside the obvious positive outcomes from that sort of institution, what would be the ballpark figure that government would be looking at to get that underway?

Dr Whitten—The levy contribution must be about \$200,000 at the moment. I would be thinking somewhere between \$2 million to \$3 million. It is small when you look at the industry.

Mr MARTIN FERGUSON—Over what period of use?

Dr Whitten—That is per year. It really is peanuts that we are talking about. If you are talking about strategically protecting an industry, if Varroa mite comes into Australia—and the chances are that that is likely to happen—we will lose feral bees. Some people will cheer over that, particularly in the context of national parks. The industry itself will have enormous problems. That will have those flow on effects that we talked about before. We have other stresses like in Queensland where access to national parks is going to be phased out. Yet a good beekeeper needs about 16,000 hectares of native flora to work with.

CHAIR—Would you envisage that sort of institution incorporating the Medihoney part of the equation?

Mr Keith—Even with the Medihoney there are a whole range of issues that are yet to be researched because whilst they have found this special antibacterial property in *Leptospermum* species it has not been identified yet. Australia produces perhaps 600 honey types that all need to be pursued. Some of them have been and some of them while they do not have the special antibiotic property are useful because all honey has an antibiotic property in that it creates peroxide when placed on a wound and that helps healing. Different honeys have different levels

of the ability to produce that. There is a whole range of research in that area that I do not even know about.

Mr ADAMS—Overseas, honey is seen in many countries as quite a healthy product. It is taken and used that way. I know the Koreans have a tariff of something like 250 per cent on getting honey in there and there have been some ingenious ways of getting honey products into Korea. The other one is that I always put a bit of honey on the bottom of my rose cuttings to get them up and that works very well too.

Mr Keith—The advent of antibiotics more or less set aside the use of honey for healing. A lot of old people still stick by it. Now science is finding out the reason that it was good for healing. Antibiotics are losing their punch because of resistance. It is a real light on the horizon for antibiotic resistance.

Mr ADAMS—So there are no Australian wild bees—bees that were here before white settlement?

Dr Whitten—Yes, there are a lot. But like the *Trigona* species these are not commercial at all. There is a small group in Queensland trying to use them for things like macadamia.

Mr ADAMS—The issue I was thinking of was the amount of bees that are in national parks. In your professional view, you have studied in this area, does that cause any difficulties in the cross-pollination of plants?

Dr Whitten—When I was chairman of the Honey Research Council we funded some of that work because there was a threat to access to national parks. It is still a controversial issue. We certainly still need access to national parks. But, in balance, I do not think that there are any long-term deleterious effects. That is the sort of thing which would still be researched.

Mr ADAMS—We basically accept in our world that life goes on and things change. Biodiversity is not static.

Dr Whitten—But right now we have the threat to access. One of Don's interests was putting together the national strategy on access to national parks. Loss of access is a serious threat to the industry and it is one of the topics that should be researched.

CHAIR—I am conscious of time and that my parliamentary colleagues want to ask some questions.

Mr MARTIN FERGUSON—Most of your focus is clearly on a school of national excellence for research into the industry which is about using CSIRO and the University of Western Sydney et cetera.

Dr Whitten—I want to qualify that. I think the weed CRC is a good model. You have three research programs there. One deals with risk assessment, one deals with crops—grain particularly—and the other with natural environment. The other two programs are education and community empowerment. I envisage this centre would not just have a research component, one of its really distinctive features would be the education and the community empowerment.

Mr MARTIN FERGUSON—That is the issue I want to go to. I accept the need to do more on research. This industry is basically an industry of small business people who really need some special assistance in terms of how to survive assuming that the research is done and funded through the industry at a national level. The biggest challenge at the moment is keeping people in the industry isn't it?

Dr Whitten—I think so. In America they have tried encouraging the growth of amateur beekeepers and some states, such as Maryland, have been training amateur beekeepers. I do not believe that that is going to be a solution here—I think it will still have to be a commercial industry—but it is a small number of people. If the feral bee goes, and I think it is more than likely that we will get things in like Varroa, those industries will probably go to the wall, and that is when we are talking about between \$1 billion and \$2 billion. The almond industry would be the top one to go. One would then need to have a very professional industry that would need access to native resources to provide pollination for the honey.

Mr MARTIN FERGUSON—One of the biggest challenges to the industry, therefore, is potentially denial of access to national parks, because more and more parts of Australia are becoming national parks. If that occurs, irrespective of whether we do the research, the industry is finished, isn't it?

Mr Keith—Yes. The recent decision of the Queensland government to make most of the native forests in south-east Queensland national parks and to phase bees out by 2024 will have an enormous effect on the honey bee industry in Queensland. If that policy were extended to other parts of Queensland and Australia, it would cause the annihilation of the honey bee industry in Australia.

Mr MARTIN FERGUSON—Urgent research, then, is needed to prove to the state and Commonwealth governments that whilst we can have national parks, if we deny access, that is the end of the honey industry. What work is being done to put this on the table, because it is rather urgent now, isn't it? Put aside the issue of forestry—that is a separate debate. The way they are going, they can kill this industry.

Dr Whitten—I do not think you need research.

Mr Keith—The science already indicates that the activities are at best benign. There have been a number of research projects and none have identified a significant adverse effect of having European honey bees in a conserved environment. But the problem is philosophical with the conservationists. The conservationists have the ear of government, so it becomes political. That is not to say that more research will not help, but the issue is not only one of research.

Mr MARTIN FERGUSON—Can you supply that research to us, including any indication of where you think more research might help to shore up the case for access? Can you make that available to the committee?

Dr Whitten—Yes, we can do that.

Mr MARTIN FERGUSON—I looked at your submission and I totally understand the higher level R&D and the problems of pests et cetera, but there is another bigger threat. The industry could fail anyhow. There are a whole variety of issues beyond R&D.

Dr Whitten—The biggest threat to the industry is obviously exclusion from national parks and the incursion of, in particular, the Varroa mite. It will wipe out the bees in national parks, as it has done in America. So you have an environmental plus for those people interested in that, but you will obviously lose the industry unless there are certain quite powerful interventions to stop that. I do not know that further research is needed. When I was Chairman of the Honeybee Research and Development Council we funded quite a number of projects, and that has happened since. As Don says, the question of access to national parks is more a philosophical issue.

Mr MARTIN FERGUSON—You need to bring this out in *The 7.30 Report* too so that people understand what the real threat to the industry is.

Mr SECKER—I am interested in the Medihoney that you were talking about. You were saying that the antibacterial levels—this is in the pamphlet—depend a lot on the floral sources. What are the best floral sources?

Mr Keith—There are quite a number of leptospermums growing in both New Zealand and Australia. Three of them to date have been identified as being able to produce that special antibacterial property in honey.

Mr SECKER—So it is just the leptospermums at this stage?

Mr Keith—That special antibacterial property is, but, as I mentioned, some honeys produce higher levels of peroxide when applied to wounds. Jarrah in Western Australia is an example. So there could be more out there, but those are the ones that have been identified at the moment. The difficulty for the honey bee industry is that, whilst the plants might flower every year they get enough rain, they do not give the honey the special antibiotic property every year. That has to be measured every time to see if the honey has it. That honey is paid for according to its activity. If you produce that honey and it is not active at all, it is almost worthless. If you taste it, it tastes like medicine. But if it has these antibacterial properties it is worth somewhere between \$10 and \$20 a kilo.

Dr Whitten—Are you hoping that Salvation Jane might be one of those?

Mr SECKER—No, I was actually hoping lucerne seed might have something.

Mr Keith—It might have been one of the earlier ones looked at.

Mr SECKER—That is an interesting point I was not going to raise. I think there is still, because farmers have got long memories, some ill feeling towards the bee industry from when they had that injunction 30 years ago against the control of Salvation Jane. But that is another side. Your submission stated that mechanisms need to be found so that more commercial beekeepers can capture a fair share of the benefits from the pollination of crops. I know from my own experience in the lucerne seed industry that most of us do pay for our beekeepers. Some are

actually doing it now with canola and small seeds. It seems to me that a lot of the industries that are getting benefits out of the pollination have not been paying for it and have been having a free ride, even when it comes to putting money into research. It could be argued that it would be sensible for them to put some money into research in the bee industry because of the often understated and less understood benefits of pollination. As I said, I understand that because of the industry I am involved in. What sorts of mechanisms—and I think you talked about this—can you use to have a better return for pollination services in this country and to get a fairer share of the benefits bees bring?

Dr Whitten—There are probably several things. One is that the likely loss of feral bees will focus attention.

Mr SECKER—That has not happened yet.

Dr Whitten—No.

Mr SECKER—And we hope, in a lot of ways, that it does not.

Dr Whitten—We hope it will not, but it may well happen. The other one is the lack of professionalism among some beekeepers coming in, not providing a good service and not charging properly for it. In America they are getting up to \$US100 a hive for pollination work. I think that is what is going to focus attention. When you lose the feral bees—and it may not just be Varroa; it could be to other diseases as well—they will have to rely more on paid pollination, and then it is a matter of market forces operating for industry to get their act together to ensure that they get a return that justifies their efforts.

Mr SECKER—That is about the future. We have not reached that stage, and I hope we do not reach that stage. Now we have still got feral bees, but we have still got a very large and varied agricultural industry in Australia that is probably not paying its fair share towards what bees can do.

Mr Keith—I do not think there has been enough emphasis on value adding of adequate pollination in crop production in all the institutions that train people in crop production issues. From a farmer's point of view, the nature of the land bees is that they thrive in the environment if there is bush there. Even in the Darling Downs they go into the bottom on a rotten strainer post or anywhere they can get. So there is always that background of feral bees providing pollination. It is not until you get these concentrations of those like the almonds and apples now—but 30 years ago they were not—that people recognise that they cannot get a crop without added pollination.

Dr Whitten—That is where I think the other terms of reference about skills and training come into it. The weed CRC I think is an excellent example, starting at primary schools but going right through the VET sector and training people for national parks, agronomists and so on. As I suggested before, this centre could not only have a research focus in terms of a network across researchers but actually bring together all the relevant information and make it available in the same way that the weed CRC is doing, so that the majority of schools and community groups would become aware of what the issues are and you would get all sorts of changes, political pressures and so on.

Mr SECKER—So are you suggesting an overarching CRC that tries to bring them all together?

Dr Whitten—Absolutely. It would be similar to the weed CRC, the forestry CRC, but it would not happen through the CRC program. We just do not have the momentum amongst the institutions to put one together. I have been involved in preparing a number CRCs—

Mr SECKER—So it could be an association of CRCs?

Dr Whitten—Not even close to that. I think there needs to be something similar to what happened for the rainforest CRC and the reef CRC. Because of a change in policy, downgrading public goods research and looking for short-term commercial stuff those two CRCs went to the wall. I wrote an article in the *Financial Review* on that topic, which focused some attention and which ultimately, amongst other groups, led to the allocation of \$100 million, \$40 million of which went to combining those CRCs. It is not a CRC but it is basically the same thing. Here I think you need government intervention to say, ‘We need to set up something like a CRC which would have a research focus but would also be the purveyor of information,’ in much the same way as the weed CRC, and then have it picked up by the VET sector in terms of training and skill.

Mr SECKER—Would you see an organisation like the CSIRO having a big involvement in this?

Dr Whitten—They could be involved in it. When I was chief of entomology we had a number of researchers there, including Dr Denis Anderson. But they would be just one of the players; there are also the state departments and the universities. There is very little research effort into bees in Australia at the moment, and with a total levy of \$400,000 per year—because it is not capturing the pollination. So it is a classic case of market failure. I think that if there were a CRC-type enterprise set up which was funded directly, in the same way that the reef and the rainforest CRCs were set up, and given a seven-year life to bring together the research effort but also to capture knowledge, that would be good.

In fact, when I was chairman of the Honey Research Council we recognised the huge variation in capability and productivity between the top beekeepers and the other beekeepers. We set up a committee that went to each state and captured best practice from beekeepers. Those manuals are sitting there, but they should be living documents. If they were digitised and upgraded all the time, the knowledge that would be going out—if you watch *The 7.30 Report* on this topic you will see Gretchen When, who is in her 70s, and Linton Briggs, who is in his 70s. These are people who over the years have accumulated enormous knowledge, but we are losing that information. If we can capture that in living documents, I would see this centre as being a purveyor of that sort of information.

Mr SECKER—So you are suggesting that government should pay for that and get it up and running.

Dr Whitten—By God, you would get a return on your investment.

CHAIR—Mr Keith and Dr Whitten, thank you very much for your contribution. You have given us very good evidence which needed to be put on record for obvious reasons. The committee will take as exhibits the ‘Medihoney creative solutions for healthcare’ presentation, the ‘Medihoney and wound care first choice in infection control’ document and the weed publication 2006 by the weed CRC.

Dr Whitten—I have two more documents that are just examples of the publications.

CHAIR—The committee accepts those two additional documents.

Proceedings suspended from 12.43 pm to 1.45 pm

CARBERRY, Dr Peter Stanley, Group Leader, Agricultural Landscapes Program, Sustainable Ecosystems, Commonwealth Scientific and Industrial Research Organisation

KEATING, Dr Brian Anthony, Deputy Chief, Science Integration, Sustainable Ecosystems, Commonwealth Scientific and Industrial Research Organisation

CHAIR—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament and consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that the giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. Do you wish to make a brief statement in relation to your submission or some introductory remarks?

Dr Keating—I would like to make some introductory remarks, and then we will be happy to take questions.

CHAIR—Please feel free to do so.

Dr Keating—Thank you for this opportunity this afternoon and thank you for coming to Queensland. It is a pleasure to be able to talk to Canberra without having to get on an aeroplane, which is what we usually have to do. It is great to see you here.

CHAIR—We aim to please.

Dr Keating—Thank you. The topic of this inquiry, rural skills training and research, is clearly a very broad topic, and many interesting and important submissions and hearings have made over the period of time that the committee has been inquiring into it. CSIRO's submission was also quite broad ranging, but we think CSIRO's contribution is most relevant to terms of reference 3 and 4, particularly around the research questions and the relationships between research and rural skills. As I said, I would like to make some introductory comments, and then we would like to flag upfront two particular issues that we think may be worthy of further discussion.

Under CSIRO's act we have two primary purposes: one is to carry out scientific research for industry, community and national objectives; the second one is to facilitate the use of the results of that research. So CSIRO is a large complex organisation but with two fairly simple and clear primary purposes. Those primary purposes relate to this inquiry in particular around the connection between research, if you like, in the world of science and the practical skills and knowledge that are needed in the real world. Rural skills are relevant to both rural industries and natural resource management and environmental issues in rural regions. They are all connected here. We see rural skills as increasingly important in the application of our research results, and that is a primary theme in our submission—if you like, making sure that we ask the right questions with our research and that we understand the drivers, the shaping, of rural livelihoods and the environment.

CSIRO has always had a strong focus on rural industries and natural resources on which those rural industries are based. Depending on how you do the accounting, something like 30 to 50 per cent of CSIRO's activity is relevant to Australia's rural landscape and rural industries. That is not an insignificant national investment, perhaps in the order of \$200 million to \$300 million annually. Co-investment from rural industries and other government programs is also on the table in association with that core investment.

As I said at the outset, the inquiry's terms of reference are broad and our submission was reasonably broad as well. We thought that we would like to flag two important issues in particular, and they both have something to do with partnerships. Firstly, the way in which CSIRO is partnering with the Australian university sector is one issue that we would like to mention briefly and, secondly, we would like to discuss the way we partner with what you might call the grassroots farming or community groups. In both cases, the partnerships are about ensuring that we have more useful and relevant science and that that science connects up with the real world practice more effectively. I will make just a couple of quick comments, firstly, on CSIRO university partnerships and then, secondly, on the grassroots partnerships.

CSIRO believes that partnerships with the university sector are important in the development of formal research and management skills for industry, community and government. CSIRO believes that in this case we can make a unique contribution, where our more applied research skills, more focused on a problem setting for research, can link up with the universities more formal academic training environment. In our submission we flagged a number of such partnerships. We sat in this morning on the conversation with Dr John Taylor from Rangelands Australia. John mentioned that he was a CSIRO secondee into a partnership with the University of Queensland to help mount that Rangelands Australia effort. Every one of these CSIRO-university partnerships has its own particular character. It is something that we intend to continue to do, where we can see there is clear national interest in doing so. I am happy to take questions on that later.

The second area that we want to flag is what we have called in our submission the 'learning in action partnerships'. These are with either industry groups or community institutions of some shape or form. Once again, they are about connecting R&D in the world of science to the real world. These partnerships are often directed towards farmer groups or community associations, but the same principles apply to the catchment conservation groups and natural resource regional groups that have developed. In these partnerships, researchers and practitioners work together. Research knowledge and practical knowledge grow side by side, and the research is more relevant and the adoption of results much easier. Dr Peter Carberry has first-hand knowledge of this approach, and he is keen to talk to you about that if you are interested. The point that we are on about there is that the traditional view of science, research, development and extension practice is breaking down. It is a much more dynamic environment. We are finding some real benefits from dynamically linking research practice and research activity with real world farmer practice or real world natural resource management activity.

I want to finish these opening comments with one final point. The Australian government makes significant investments aimed at an economically viable and environmentally sustainable rural Australia. Increasingly these investments are made through a regional model, something that brings many advantages by tapping into local knowledge and creating local ownership for action programs. One challenge that we see as this unfolds is the creation of effective links with

the science agencies to ensure appropriate science support is available and to ensure we develop longer term learning from major national investments. We see this as a major ongoing challenge, which I know has come up before at hearings in this inquiry. We have some experience of linking up our research through some of those national programs, with things like the NAP, the NHT, FarmBis and so on. Once again, Dr Peter Carberry himself has some experience in that. They have tended to be very productive activities, but in many ways it seems as if the system is not quite designed for that upfront. We can achieve those partnerships more despite the system than because of it.

We have put a lot of effort into engaging with those programs and taking these 'learning in action partnerships' into rural industries or communities. But we feel that if there were more effort in embedding national investment and various other research investments that the government makes in the science agencies, at the same time as planning the on-the-ground action programs, maybe we would get some better outcomes in the end. It is an upfront, more deliberate coordination. If you like, it is, on the one hand, national investment in science and research for rural Australia and, on the other hand, national investment in the on-the-ground action programs. I might leave my comments there.

ACTING CHAIR (Mr Adams)—Thank you, Dr Keating. Dr Carberry, would you like to make some comments?

Dr Carberry—No, but I am happy to respond to questions.

Mr WINDSOR—I have a couple of questions. In a moment I will read from the submission of the University of New England. We have heard a lot about training and that it should be responsive to clients' needs, and Cotton Basics has been mentioned from time to time as an example of that. Even today we have heard more about a lot of the training packages not addressing industry needs as specifically as they probably could. In the area of research, the University of New England submission stated:

Researcher training is probably one area where industry will not necessarily identify future needs ... there has been little succession planning to provide either full time researchers or tertiary teachers for the future.

Would either of you like to comment on that remark and how that applies in your fields or to agriculture generally?

Mr MARTIN FERGUSON—I will just add to that question. What can be done to address the decline in the number and academic standards of students, which is raised at length in your submission? In a practical way, what are your recommendations?

Dr Keating—You are correct: in our submission we expressed some of the challenges we face in recruiting Australian trained researchers with a particular skill set. In our case it has been particularly difficult finding people who can integrate biological, physical and economic skills and who can still work in rural communities or with rural industries. That has been the skill set that we have been looking for, and it has been difficult. I have no magic solutions here. It is a little out of my field of expertise, not being part of the formal education sector, but it seems to me that we have really fragmented our national agricultural training effort at the higher end of the researcher range.

We have a large number of schools offering agricultural science and related subjects. It is not just agriculture; as I said, it is economics and the environment. There are many offerings. Dr Taylor, who has done a survey on this, mentioned to me this morning that there were in excess of 150 different programmatic offerings. I do not know how many institutions are involved, but it is a fairly large number too. I not sure if as a nation we can afford to spread our effort that thinly. You can look elsewhere to other nations of the same size as Australia that have very strong agricultural universities. I am thinking of the Netherlands, for instance. Obviously the physical comparisons are very different, but the population is about the same size. They have one outstanding world institution, the Wageningen Agricultural University, which we partner with in many instances.

ACTING CHAIR—They have a big agricultural industry.

Dr Keating—Yes. So the sense I have is a sense of fragmentation and that sort of feeds into the issue of quality.

Mr WINDSOR—I am not sure whether the secretariat has put this in our papers or whether it is part of your submission, but there is a press release from CSIRO of Tuesday, 1 November 2005. The headline is ‘CSIRO plans to scale back on rural research’. Obviously, there are a number of words, but it tends to say further down the press release that it is a reorientation rather than a scaling back. In the context of this inquiry could you elaborate on, firstly, what the press release means and what is the real world within CSIRO saying? Is there anything that we should be doing as a Commonwealth parliamentary committee to assist?

Mr MARTIN FERGUSON—To be fair, I think it is more an ABC report of what they accuse CSIRO of. Knowing the ABC, it must be right. What is your view? I am sure it is accurate, just as they towelled you up recently on clean coal technology.

Dr Keating—Thank you for that clarification. CSIRO does review all its science programs all the time, as you can imagine, to make sure that they are aligned with the national needs. I can comment here as a practitioner in the organisation, if you like. I do not feel there is any sense of reducing our focus on the future needs of rural Australia. I will speak of one immediate experience I am involved in, which is an examination of our agricultural sustainability R&D. I am chairing a working group on that to look at some of the science linkages across the divisions. We have about six different divisions of CSIRO working on that particular topic. They have looked at their research investments in themes. There are about eight themes being talked about there. So it is not surprising that CSIRO corporately is asking: are these six divisions and are these eight thematic areas well aligned, are they working well together and are they aligned with what the needs are? There is about a \$50 million annual investment there. It is not surprising that there is an opportunity for some new synergies across those divisions: everything from livestock, plants, forestry, my own division—which is sustainable ecosystems—to land and water. We are looking at our programs and we do make changes, but I do not get a sense that there is any agenda, if you like, to substantially change the long commitment we have had to the triple bottom line needs of rural Australia.

ACTING CHAIR—Maybe we could change the themes a little bit—maybe fly us straight to sustainability?

Dr Keating—The themes evolve and sustainability is certainly more on the agenda now than it would have been 70 years ago. It is also on the agenda of industry now more than it was 70 years ago.

Mr WINDSOR—I have one final question. In terms of research and applied research with respect to agricultural environment, salinity, water quality—those sorts of issues—that CSIRO has carried out over the last, say, decade, has there been any measurement of success or otherwise or progress that you can encapsulate in two or three sentences?

Dr Keating—I am not sure there is something I could encapsulate in two or three sentences.

Mr WINDSOR—A lot of money has been invested through various programs. I have not yet seen anything that gives me a material view of progress. I recognise that a lot of these problems are very long term, but are we making headway in applied research?

Dr Keating—Probably the best people to ask there would be some of the industry groups that CSIRO works with. That applied research is nearly always done closely with industry groups, often cofunded by industry. The sense I have is that there is good progress made on a broad range of fronts. Is there a silver-bullet winner out there, a myxomatosis or something? I guess many of the challenges have got more complex than can be solved with a single silver bullet.

ACTING CHAIR—We have done a lot of research on sustainability, we are moving on natural resource management and we have done a lot on land care. I think what Mr Windsor is saying is, ‘Where are the reports that say what we have achieved? Have we set any benchmarks for ourselves? Are we moving in the right direction? How much of that have we got recorded? How far have we moved?’ I think that is where we are getting—

Dr Keating—If you are asking, ‘Is there a single bottom line indicator table?’ then I am not sure I know where that is. As you know, CSIRO reports to parliament every year. Every project reports to CSIRO and to its industry partners every year. So there is no end of reporting. If you are saying, ‘Is that being brought together in a really concise form and directly related back to the research?’ I am not sure that I have seen that.

Mr WINDSOR—It may be early days yet. There were a series of audits done on the Murray-Darling system, for instance, that highlighted a number of specific problems. Out of that, government expenditure was made at a number of levels to try and address some of those problems. It will be interesting to see, when the next audit is done, whether—I am probably asking a question you cannot answer.

Dr Keating—I think it is a reasonable question, but answering it in one or two sentences is a challenge.

ACTING CHAIR—You just said that you were chairing a committee that is looking at what sorts of research you are doing and where you are going with it over CSIRO departmental areas. I would not have thought it would have been difficult to look in a broader sense. It would be basically so that we have the tools to see where we are and what we are achieving.

Dr Keating—That is the flavour that we are bringing into this review, to structure it around a much more explicit set of targets and indicators rather than having a set of programmatic areas that are somewhat disconnected. The aim is to get much more specific: what are the economic and environmental performance indicators of Australian agriculture, right down, for example, to the number of tonnes of grain per kilo of fertiliser we produce and whether the research changes those sorts of things? So we are building into this new program a much more specific set of indicators in terms of—

Mr ADAMS—Are there areas that we probably should not be in, where we should be somewhere else more intense or—

Dr Keating—Are you thinking geographic areas?

Mr ADAMS—Geographically, yes.

Dr Keating—This is a topic the media are always interested to talk to CSIRO about to get us to inflame some debate. Our view is that in all parts of Australia there is more profitable and less profitable farming land, more sustainable and less sustainable, and it is about having the knowledge to identify that, target management practices to land—

Mr ADAMS—The price of water and long-term marketing viability are issues that you could be looking at, aren't they?

Dr Keating—They are big issues facing rural Australia and CSIRO does contribute to research on those issues, with other organisations, from time to time.

Mr WINDSOR—I was just thinking about the privatisation of Tasmania!

Mr ADAMS—We have only got the gene pool left.

Mr SECKER—I recently went to a Rural Industries Research and Development Corporation, RIRDC, field day. The farmers got a lot out of it. They saw where their research had gone and how it was being used on a practical basis. I do not hear or see a lot of this from the CSIRO; its research seems to be at another level. Whilst the farmers have respect for CSIRO, they do not often see the results of its research. I think this gets back to what Tony was talking about. Do you think CSIRO could transmit some of its research to farmers in a better way and how do you think it could do that? It just does not seem to be happening too much at the moment.

Dr Keating—I am going to hand this question to my colleague Peter Carberry, which is really why I asked him to come along. I am disturbed if the general feeling out there is that CSIRO research is not impacting at the grassroots, because I do not think that is an accurate view.

Dr Carberry—Over the last 10 years a revolution has happened in how agricultural R&D is being done and delivered around Australia. In the past, as Brian said, the idea was that you have high-end science, applied science and development extension. There was a linear transfer of information from one end to the other and practitioners would pick that up through extension. In more recent times, landholders are not waiting around to access the information to come through that conduit. They want to get involved in setting the research agenda and in deciding how that

research will be done and how it will be applied on their own land. CSIRO has responded to that by saying, 'Okay, let's get involved with landholders in the issues on their own lands and work together.' This revolution has happened in the last 10 years and it is manifest in the emergence of these farmer groups around Australia. I do not know whether the members of this committee are aware of groups such as the Birchip Cropping Group or the Mallee Sustainable Farming Systems Group, which is in your electorate, Mr Secker.

Mr SECKER—I launched it on Friday.

Dr Carberry—Groups of landholders are bannng together and saying, 'We want to be part of the R&D community,' and CSIRO has hopped on board in this domain. You might not see CSIRO up in lights at a Mallee Sustainable Farming Systems field day or at a Birchip Cropping Group field day, but you will see CSIRO staff there who have contributed to the research or who have been involved in that type of research or who are there giving talks. I think it has changed the way CSIRO does its practice. The way I did my research 10 years ago is completely different from the way it is done today, because of that revolution. So I would hope that the committee and others would see CSIRO scientists as being out there on the ground, doing practical research and addressing real-life questions rather than their always being seen in a lab coat in a lab somewhere, developing something that might be used in the future.

Mr SECKER—That is interesting, because I launched that on Friday and no CSIRO people were there. PIRSA, Primary Industries Research South Australia, were taking almost all the credit for it. It seems to me that this is more about marketing what you are doing out there. Here I was launching something and, whilst I saw some results, CSIRO were not out there in bright lights to say that they were involved. To what extent does CSIRO take note of the farming community when it develops research programs and sets priorities? It has obviously done that in this case? Is it through consultation with the local farming groups or do CSIRO field officers go out and see what people want? How do you get that connection with what the farmers want?

Dr Keating—There are two levels of response here. At a higher level, as I mentioned, there is the agricultural sustainability review that we are looking at internally. Consultation is going on right now with groups like the NFF, the state agriculture departments and the funding bodies, like RIRDC and so on. But as to CSIRO's involvement at a lower level, the more local-regional level, I will hand you back to Peter.

Dr Carberry—Australia is the envy of most of the world in how we organise our R&D funding and delivery. They envy us because we have R&D corporations such as the Grains R&D Corporation and the Cotton R&D Corporation, which are industry based, as well as issue based R&D corporations like Land and Water Australia. GRDC in the northern region, for instance, have research advisory committees that collect issues from land-holders that feed back into GRDC's priority-setting process. For instance, I am a member of the Darling Downs RAC and there is a CSIRO nominee on each of those RAC committees.

In issues like the Mallee Sustainable Farming Systems Group, a CSIRO researcher is a member of the board. So part and parcel of the change in the way we have done our research in more recent times is that CSIRO staff and employees are becoming involved in these processes developed by industry and government to decide what the research priorities are. Across the

board, whether it is South Australia, Tasmania or Western Australia, you will find CSIRO staff involved in these priority-setting organisations or operatives.

Mr SECKER—Would you say you are getting more of an extension officer outlook?

Dr Carberry—That is a good question. A lot of people, particularly old hat CSIRO staff, would look at the research and say that it is extension. To me it is a different form of research. It is defining research differently. It is this idea of participatory action research, where we are embedding our research in the practices of real world practitioners. We still write our journal papers and we still produce knowledge, but it is done in a different domain. I think it is quite exciting.

Mr ADAMS—Are there any dangers in that?

Dr Carberry—There are dangers in things like rewards. I cannot produce as many publications for my scientific peers by going out, having a few beers with a group of farmers and talking about research and what you might do as I could if I was in a laboratory doing biotechnology. There is the issue of rigour in our science. Some people ask: 'Is this rigorous science? Is it what our premier science organisation should be investing in?' So there are some challenges and some risks, but hopefully the achievements in terms of on-ground impact, with the benefit to Australia and the knowledge that we generate, will offset those risks.

Mr SECKER—For the record, it is very interesting that the Murray-Mallee sustainable farming setup have gone from virtually zero to 40 per cent using zero till, which is very important for their fairly fragile soils compared to what it would be used to. They have also found better ways of when to put urea on for barley production and better uses of fertilisers for different soils. So it has been a very practical plus for those farmers.

Dr Carberry—Can I say that underpinning a lot of that work is some basic science done by CSIRO on the biology of those systems. The microbial biomass and carbon dynamics in those systems was instrumental in being able to get those systems up and running.

Dr Keating—If I can I add to Peter's list of risks and dangers, there is a third one that relates, if you like, to it being overly captured by a small group of leading edge farmers and not finding ways to get connected more broadly. That is a danger that we recognise. I will throw it back to Peter to comment on some of the techniques that they have been researching on how we can get beyond the small groups that you inevitably can work with on a one-to-one basis.

Mr ADAMS—Those groups are usually those with good and high-level skills. I find that leaves a lot of others down the back and struggling to catch up.

Dr Keating—Yes, we accept that. Peter, would you like to comment on the ICT?

Dr Carberry—It is a big issue. In the grains industry there is something in the order of 25 farmer groups that have started up over the last 15 years, from the northern wheat belt in Western Australia all the way around to Central Queensland. Some of those are in quite isolated areas. One of the initiatives that a number of those groups have adopted is the use of information communication technology. You could be a farmer in Buntine in Western Australia and have

access, by running an online meeting, to a marine researcher in Hobart who is an authority on seasonal climate forecasting. It is about trying to access resources and skills nationally, using things like videoconferencing.

Mr ADAMS—Having broadband helps.

Dr Carberry—Broadband helps. There is technology out there that allows you to have a pretty good video conference with a 25k modem.

Dr Keating—That is a real world example that Peter just gave. We do have a researcher from Hobart supporting a farmer group in Buntine.

CHAIR—Broadband is okay providing you have exchanges that can carry the broadband. There is evidence that we have not gotten that yet and that is a massive problem in rural and regional areas, particularly in more isolated communities.

Dr Carberry—It would be a good recommendation from this committee to do something about—

Mr ADAMS—It is. It is one of the issues we are talking about.

Dr Keating—In our research the guys and girls have been careful to not be, if you like, overly dependent on technology—so adapt. We are there because we believe communications are going to improve but now they have to work with what is there.

CHAIR—Just talking about the 45 farmer organisations that have sprung up all around the countryside, do you think they are really fulfilling the role that they were designed to fill or are they becoming more engrossed in agripolitics than they are in delivering outcomes for their constituency?

Dr Carberry—With all due respect, absolutely not. These farmer groups do not want to get involved in agripolitics. I recommend anybody have a look at the Birchip Cropping Group as an example. A group of farmers in Birchip, a little town of 500-odd people in the Victorian Mallee, decided they needed to do something in their community. They did not want to go along to the tennis club on a Saturday and have no-one to play with any more, so Ian McClelland and his fellow farmers said we will do this through R&D.

CHAIR—What about the larger farmer groups, like the NFF and the farmer associations?

Mr SECKER—They are not involved at this level.

Mr ADAMS—This is about being practical.

Dr Carberry—I have to say something about the Birchip Cropping Group. They started with the idea that they were going to do something through R&D. They had one staff member back in 1995 or whenever and now they employ 17 young, energetic staff and have an R&D budget of over \$2 million. Their impact in the community is such that many of the kids who would have been sent to boarding school 10 years ago are being educated locally at the Birchip High School.

They are not in this just to make the top 20 per cent wealthier; they are trying to deal with the other farmers out there. So they address issues like making conservation pay: how, as landholders, they can not just make a quid but look after the environment as well. That model is being adopted I think around Australia.

CHAIR—You are talking about empowerment from the bottom up and that is what we should be looking for.

Dr Carberry—Absolutely. They are having an influence on us. They are changing the way CSIRO and state agencies are doing their work. They are bringing more dollars into the R&D scheme.

Mr WINDSOR—Before we get off that theme, are any of these groups working on the use of modern techniques—zero tillage, stubble retention and that sort of stuff—in terms of a carbon bank? Is CSIRO working on how you can establish some longer term incentives other than the existing ones to drive that technology through the use of a market driven carbon bank?

Dr Keating—CSIRO works on some of the underpinning, if you like, science of how does soil management affect soil carbon and those sorts of things, of course. CSIRO does have a program we call markets for ecosystem services. The federal government invests in that as well through DAFF. There is a significant case study program going on there. Yes, you can view soil carbon as a service an ecosystem—or, in this case, an agricultural ecosystem—could provide and then look at how you develop markets for that. I think the answer is yes, there is active research in those areas.

Dr Carberry—The Birchip Cropping Group has a number of programs funded by AGO and others looking at what they as landholders can do in terms of mitigation, offsets and other dimensions with CSIRO and other research providers as partners.

Mr MARTIN FERGUSON—You have been critical of the quality of education in Australia. Firstly, what percentage of your staff are now recruited overseas for that reason? Secondly, I notice you have summer student trips et cetera. What is CSIRO doing with respect to cadetships to help get people through tertiary studies and also what assistance does it offer employees undertaking postgraduate work, given the high HECS for postgraduate studies?

Dr Keating—Help me if I miss some of the subcomponents. At the senior scientist level—the post-PhD, postdoctoral level—in the part of CSIRO I know best, in the division I work in, about half of all our recruitment is international. If you are not happy with an approximate response, I would have to go back to the books to get those figures more accurately. CSIRO has always recruited internationally, and that is a healthy thing, but that is a fairly big slab now.

Mr MARTIN FERGUSON—That is a big slab now. It has increased in the last 20 years, hasn't it?

Dr Keating—Yes. If you go to a laboratory in Townsville, for instance, it is like a mini United Nations, which is a good, healthy thing. But there is a challenge with some of these really bright new staff. It takes them a few years to get up to speed with the Australian environment and our

industries and so on—and the North Queensland way of dealing with things. That is just an example.

I will move on to how CSIRO is getting involved, putting its money where its mouth is and investing and so on. CSIRO does have an annual round of postdoctoral positions and postgraduate scholarships. A lot of those are what we call top-up scholarships to make postgraduate programs more attractive. For people getting Australian government postgraduate awards, CSIRO will come in and do three things: (1) top it up with a supplementary allowance to make it more attractive; (2) provide some operating costs for the postgraduate training; and (3) connect that person to a real world practical research problem that CSIRO is working on. To build that bridge between the formal university academic home and—

Mr MARTIN FERGUSON—What about cadetships for undergraduate studies, which used to happen a lot in institutions and government work?

Dr Keating—I could be wrong on this, but I am not aware of CSIRO ever being involved in cadetships at the undergraduate level or in cadetships for Aboriginal and Islander peoples. We support our staff in any training activities related to their jobs. There is a good support system that involves time off or some shared subsidy for fees and so on. We run a staff development program in all units, and I think that is good support for our staff. Because we have tended to recruit at the higher end of the range, we have tended to focus our linkages more on the postgraduate end.

CHAIR—I am conscious of the time, but I need to ask you a question. Your submission states:

Explicit recognition of the value of partnerships with R&D organisations, such as CSIRO, could be more strongly developed in future government programs such as NAPSWQ ... [and] FarmBis.

Do you have any specific suggestions for how this can be achieved?

Dr Keating—I do not want to imply that there is a lack of goodwill or that all concerned are not intent on those programs linking up with research and good science. I think there is goodwill and good intent on all sides, but inevitably those programs get big and complex. In some cases they get complex because of state and Commonwealth issues as well. I think the NAP is probably a case in point there. Sometimes the importance of research and science connections somehow gets lost in all that complexity. There is goodwill and good intent. This is a personal view, but I think there needs to be a stronger signal that when those programs are designed, when \$1 billion is put into them, we will make sure that some small fraction of the funding is invested to make sure that, firstly, we have the connections to the underpinning science firmly in place and, secondly, we are learning from it; we are monitoring; we are evaluating; we have strong learning coming from it so that the next time we do it we can do it better again.

Mr ADAMS—Do you accept that we have lost some of the information—information that should have been written down—that we should have got from some of the programs we have run over the last 10 or 15 years?

Dr Keating—Getting the regional process off the ground has been a big challenge in itself.

Mr ADAMS—Sure. It is not a criticism.

Dr Keating—It is easy to be critical here, but getting the regional process off the ground has been a huge challenge. There are lots of potentially good things about it in terms of connections. But the downside, if you like, is that the underpinning infrastructure is more transient. I read the conversation you had with Andrew Campbell from Land and Water Australia. He talked to you about this workforce of thousands of people out there who are the frontline of regional natural resource management and how they are all on 12-month contracts and so on. Getting a little bit more substance and memory into the system is going to be the next challenge. We have put some effort into getting the regional hooks in. That required, perhaps, dismantling some of the systems that were there before, but we are going to have to reinvent them in this new environment.

Dr Carberry—CSIRO is one of the few national organisations that can play a role in many of the state and regional initiatives. It is important that CSIRO takes an interest in how the process could be done better. We need to monitor and evaluate and learn by doing, and then prove that so that next time we can do it better. CSIRO does have an opportunity and a role there to look at what is happening nationally and focus at the regional level and learn what happens there and translate that and extend that to other regions.

Mr ADAMS—Do you think that maybe it is time we looked back again at the state-based extension services or something along those lines?

Dr Carberry—I see that a number of the states have put in submissions. Around Australia, the extension as it was in the past is disappearing. A number of things have taken its places. Agribusiness is involved in the whole RD&E spectrum. There are farmer groups. Groups like CSIRO are now out there on field days doing—

Mr ADAMS—But they are limited to the people who can put the time, effort and money in. The old extension officers used to carry knowledge right across the spectrum, and we are losing that perspective. Whether it is environmental processes or new ways or whatever, we are not getting that information out there. That is my experience.

Dr Carberry—There could be a role. Organisations like CSIRO, which are national and which have this broader view of what RD&E is, could be repositories of that. But it is a real issue. We do not want to lose the capacity within our state agencies for that more regional and state based information. It is a big issue.

CHAIR—Gentlemen, thank you very much for your evidence today. I apologise for the delay, but we got a little behind. There has been some good information in your contribution and in answers by you to questions asked by the committee that is going to be beneficial in our report. Thank you once again for coming. More importantly, thank you once again for your solid input to the inquiry.

[2.34 pm]

CAMM, Mr Rod, Executive Director, Industry Development Division, Department of Employment and Training, Queensland

HARVIE, Ms Kirstine, Director, Office of Industry and Community Development, Industry Development Division, Department of Employment and Training, Queensland

KILLIN, Mr Damien, Policy Officer, Department of Employment and Training, Queensland

CHAIR—I welcome witnesses from the Queensland government. Do you have anything to add about the capacity in which you appear?

Mr Killin—Previously, I was involved in the performance management of agricultural colleges and was a member of the project team that led the amalgamation of agricultural colleges.

CHAIR—Thank you. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as contempt of parliament. Do you wish to make a brief statement in relation to your submission or some introductory remarks?

Mr Camm—Yes, I certainly would like to take that opportunity. I would like to talk briefly about three areas of vocational education and training in the submission: investment, policy reform, particularly the Queensland Skills Plan, and the Australian Agricultural College Corporation. In terms of investment in rural training, Queensland has a document called *Queensland training and employment priorities*, which identifies rural industries and the rural cohort as a priority population group.

We have both industry and regional planning processes that we utilised to elicit market intelligence with regard to that skilling program. I will talk a bit more about the reform processes underway in a moment. In 2005-06 rural industries, including agriculture, horticulture, forestry, seafood and land care, will benefit from a \$16½ million spend for 2,000 full-time equivalent TAFE places, \$5½ million for 2,000 rural industry trainees, \$1½ million for high priority training to rural sectors including sugar, forestry, seafood, wine, pigs, tobacco, macropods, fruit and vegetables and also a skills passport initiative, which is underway for seasonal rural workers. In 2005-06 there is \$14.3 million for the Australian Agricultural College Corporation, a specialist rural training provider, plus another \$7½ million over two years for the amalgamation process that is underway.

The Queensland Skills Plan—and I have a copy for the committee—was recently launched by the Queensland government. It identifies 24 actions for the reform of the vocational education and training sector specifically around industry and our relationship with industry and the

economy. The actions identified in the plan fall into four broad categories around improving the efficiency and responsiveness to demand, which is a training system that works for Queensland. It is about user choice reform and TAFE reform. It is about establishing a shared responsibility for skills with industry and government in partnership. It is a training system that works for industry and employers. It is about expanding and modernising the apprenticeship training system—the competency based training system—and also growth of trades places of 17,000, plus another 14,000 places outside of the trades for certificate IV and higher, and increase in customisation of training and recognition of prior learning and streamlining the processes that sit around that.

For the rural industries there is what we call a skill formation strategy, which is simply a process of bringing employers, industry, government, training providers and other stakeholders to the table to talk about the skilling agenda and to identify priorities. There is a new industry advisory arrangement, moving on from the previous model we had where we relied solely on industry training advisory bodies. It is also about the Australian ag college, which I have talked about. In terms of the ag college, as you would be aware from the submission, we have now amalgamated the four previous separate agricultural colleges into the one organisation. The former bodies were plagued by a range of issues around the difficulty to comply with the national training framework, governance and financial management problems.

Some of the examples of that include the lack of responsiveness of the board to skilling priorities, suspension of one of the colleges for failing to comply with the Australian Quality Training Framework and the appointment of an administrator at the Dalby Agricultural College due to the multiple Queensland Audit Office findings. These problems occurred at the same time as other rural training organisations around the country were closing. Additional funding of \$8 million was invested to amalgamate the colleges, change their governance structure—certainly to have an industry based board—restore a balance sheet and to upgrade IT infrastructure.

In terms of the future, we envisage that the Australian agricultural college will lead our industry partnerships in this sector. There are two important strands. One is entry-level training for youth and the other is to improve the skills productivity and qualifications profile for existing workers. We still consider entry level training in a residential setting a priority, but it is expensive and very few options exist around the country. It gives practical skills in realistic farm rural settings—many of the colleges certainly still have farms—and it helps avoid sending youth to cities. It establishes a very good peer network. The Australian Agricultural College Corporation is changing to better understand those needs and the broader needs of the rural sector.

With limited choices available regarding rural training, it is Queensland's position that other states and territories should consider outsourcing some of their rural training obligations to the Australian Agricultural College Corporation. It makes sense to develop a national rural training strategy because many peak bodies in this sector are truly national and many workers move across state boundaries. An effective national strategy needs to involve both the Commonwealth and state governments as well as key training providers which specialise in rural training and there needs to be much greater engagement by rural industries.

The Commonwealth currently provides approximately \$170 million or 25 per cent of Queensland's annual vocational education and training budget. This payment represents 17.6 per

cent of the Commonwealth recurrent VET funding yet Queensland has around 20 per cent of Australia's working population. With regard to the net movement of students seeking agricultural training, there is no current Commonwealth funding formula for those students. It is an issue for states and territories to resolve.

It is our argument today that rural industries are characterised by a number of unique challenges which make the current approach of states and the Commonwealth inadequate. There is a pressing need for rural industries and regional communities to retain and attract youth. Intense practical training needs to be embedded into entry-level training for youth. Practical training is too expensive, particularly farm based training, and rural training services for existing workers depend on close links and partnerships with rural enterprises. The search for solutions to rural skilling needs has to be collectively owned and managed. While we are currently working with states and territories in terms of the movement of students across state boundaries we certainly hope to find an alternative model.

CHAIR—I will start by asking a couple of questions. Submission 99, which we have received from the group of Australian apiarists, recommends that a component of beekeeping and pollination biology be included in agricultural studies. Do you agree that there is the need to include such studies in state funded education and training activities?

Mr Camm—Our whole state investment portfolio is driven by a range of priorities predominantly around industry. Whilst there are national training packages that again are developed through a national industry based process, the actual investment decisions are often directly influenced by industry. I must say I am not aware of what level of funding we provide to that industry at the moment. My answer to that would be if the industry is demanding an investment around skills priorities, it is our job to try to facilitate that if it suits the growth in the economy in terms of jobs.

CHAIR—I would have thought that there would have been an urgency centred around the beekeeping industry because of the by-product of the industry itself which is the pollination process. It would appear that governments of all political persuasions at both state and federal level have conveniently ignored that. Would you like to comment on that? I am talking about a pollination process that directly and indirectly produces about \$2 billion worth of positive outcomes to the economy.

Mr Camm—My only comment would be that we rely on our advice on skilling and investment from industry bodies. In the past, it has always been the Queensland Rural Industries Training Advisory Council and we rely on that organisation to provide us with that advice. Currently, we do not have that advice from industry.

CHAIR—Thank you for that. A submission from Conservation Farmers states:

State agricultural departments continue to under-resource research and extension in Agriculture and have directed their staff to source 'external funds' from R&D organisations such as GRDC, RIRDC, CRDC ...

This suggests a cost shifting from the state and federal government. Could you comment on that statement?

Mr Camm—No, the extension program is actually a program that is managed by the Department of Primary Industries and Fisheries. I am not aware of the details on that.

Mr ADAMS—Your submission highlights the high percentage of interstate students at your agriculture colleges and you are going to reduce that, I think. You highlight the fact that you are training other state's people. This is the problem we have with nurses and teachers training, people poaching and everything else. We have the overseas issues as well. Don't we need to do something about that as a Commonwealth? Are you doing anything through COAG; is your minister doing that through ministerial councils? Do you have any ideas you can offer the committee?

Mr Camm—Certainly. We agree with the sentiment that the training of students for jobs is our key priority, and there have been some issues around what the state provides versus students.

Mr ADAMS—I accept that that is genuine.

Mr Camm—There has been an exchange of letters between our minister and the Commonwealth minister, at least raising it as an issue. The then Commonwealth minister, the Hon. Brendan Nelson, referred to this committee as being the appropriate forum for consideration of that. It is certainly our view, because of those issues I identified earlier—the Queensland government came to a decision on whether they should close the agricultural colleges. The decision was made to invest heavily in the Agricultural College Corporation, the amalgamated version, with a view to thinking nationally—certainly acting locally, but thinking nationally. So it is our hope that there is a way through that funding formula.

Mr ADAMS—You could look at the Commonwealth-state issue to see if we can find some funding formulas that can assist right through. I think we just heard that 25 per cent of your funding comes out of the national bucket. Your colleges started in 1967 and you have had a review. When was the review done? Was it a year or two ago?

Mr Camm—Yes. The cabinet decision to amalgamate was taken in December 2004, so it preceded that.

Mr ADAMS—How much of that decision was along the lines of there being a changing agricultural base; agriculture is changing and needs a new focus? Did that drive some of that decision?

Mr Camm—Certainly from a planning perspective that has been a major shift for not only agricultural colleges but also the TAFE institutes and the rural training providers, and that is also one of the reasons we have restructured our industry advisory arrangement. A lot of that review focused on corporate governance and the financial issues and related problems.

Mr ADAMS—Was it looking at the way colleges are run and those sorts of things?

Mr Camm—That is right, and at their relationship with local industry and their capacity to shift priorities according to industry shifts.

Mr ADAMS—Are there many Indigenous students at agricultural colleges?

Mr Camm—I do not have that data.

Mr Killin—There would not be many at all. I think the one in Northern Queensland does deliver training up in Cape York, but as far as attending residential colleges I do not think there are many Indigenous students.

Mr ADAMS—Is the gender mix pretty reasonable?

Mr Killin—There are more males than females, but certainly in the visits I have made out to colleges I have been surprised by the numbers of female students.

Mr Camm—We do not have the hard data. If the committee would like that data we can supply it.

Mr ADAMS—I do not think we need it. I have gathered all that I need to know now, thank you.

Mr MARTIN FERGUSON—Are the agricultural colleges actually years 11 and 12?

Mr Camm—No, it is vocational education and training so it is post years 11 and 12.

Mr MARTIN FERGUSON—It is for two years; what do they graduate with?

Mr Camm—Their flagship program in the past has always been a two-year program that resulted in a diploma level qualification. I think there were two qualifications that they received.

Mr Killin—The first qualification would often be at the certificate II or certificate III level, followed by a second qualification at the certificate IV or diploma level.

Mr Camm—That represented the majority of the training. The advice from industry is that it is an important pathway but it cannot be the sole pathway. So we are looking to our agricultural colleges to come up with a range of pathways, including certificates I and II that articulate to higher—

Mr MARTIN FERGUSON—It is like a traineeship/apprenticeship?

Mr Camm—Traineeships are part of it, but they can be more institutionally based as well.

Mr MARTIN FERGUSON—What percentages from the colleges go to work as against doing other studies?

Mr Camm—Do you mean in terms of employability?

Mr MARTIN FERGUSON—Yes.

Mr Killin—Typically, around 90 per cent of graduates are employed in a range of industries. They will not all go directly to rural industries, but there are certainly very high employment outcomes for graduates.

Mr MARTIN FERGUSON—What is your Skills Passport initiative for seasonal workers and how does it work?

Mr Camm—Because of the nature of the industry seasonal workers buy into work and then buy out, and this is about enabling them to have their skills recognised. Recognition of prior learning is one of the strategies, but it is also through formal training. The Skills Passport is a way of recording that so that it is not lost, and the worker can present their Skills Passport and continue to learn.

Mr MARTIN FERGUSON—It is recognised across state and territory borders?

Mr Camm—It is an initiative of Queensland. It is capturing nationally-recognised qualifications. It is nationally accredited training.

Mr MARTIN FERGUSON—One of the challenges now for COAG across all apprenticeships is to make them transferable. Effectively, you are working towards ensuring this passport is transferable and recognisable? For example, apprentices could do part of their training here and then go to WA and do some other, seasonal work. It could all be recognised through your passport?

Mr Camm—Absolutely. They can do either competencies, which is the base level part of the program, or full qualifications. They could go to Western Australia and have those skills recognised. The key issue for COAG, though, is not so much the recognition of vocational education and training competencies or qualifications; it is more those industries that have a licensing outcome. Whilst a qual might be recognised, there are different licensing jurisdictions—for example, in electrical safety, plumbing and things like that. That is the key issue.

Mr MARTIN FERGUSON—With respect to the passport and your agricultural colleges and this seasonal work, what is the capacity to do a program which combines seasonal work and your agricultural training opportunities?

Mr Camm—Like a traineeship?

Mr MARTIN FERGUSON—Rather than do two years, you could do six months seasonal work, six months at the college and gradually acquire the skills.

Mr Camm—Certainly, that is the sort of flexibility we want from the agricultural college; hence that is why we cannot just rely on a two-year program. That is precisely where we are trying to go. Some of that is happening.

Mr MARTIN FERGUSON—Effectively, the agricultural colleges are all state financed at the moment?

Mr Camm—They are certainly owned by the state and there is that mix of funding, but the majority of the funding is state funding.

Mr WINDSOR—We had a submission put to the committee, and I quote:

The Queensland sugar industry is currently unable to influence or have any input into the delivery and assessment of rural training offered through the Queensland Agricultural Colleges.

Could you comment on the validity of that statement?

Mr Camm—In terms of the sugar industry, one of the things we have made a radical transformation of is the way we engage with industry. We have always relied on the Queensland Rural Industry Training Council. I know it was here today. That has largely been a successful model of the mechanisation or the mechanics around training packages and the like. We are now trying to reform how close we are to those genuine industry groups to give them actual ownership—not just a capacity to influence but ownership of the skills agenda. Whilst we do provide training, it sounds as though the sugar industry wants more direct involvement in the actual determination of assessment and that is the quality mechanism in our system. The groups we work with are organisations, such as the Canegrowers, and the sugar industry association is also represented on that ITAB. It is not feedback that I can say I have heard directly, but it is a concern to me.

Mr WINDSOR—One of the issues that keeps coming up, irrespective of where we go, is that there needs to be a focus on the client in terms of training. There is a perception out there—it is anecdotal and some of the training is probably not as great as what it really is—that there are many training packages put together that are more for the benefit of the trainer than the trainee or the industry that they are trying to cater for.

Mr Camm—I heard your question to the CSIRO on that and I must say my ears pricked up.

CHAIR—And compounded by the amount of paperwork that goes with the accreditation process.

Mr WINDSOR—We had an example in New South Wales, for instance, where to become accredited for a particular course at an agricultural high school that was also an accredited trainer it involved about 1,000 pages of paperwork—600 pages in the initial work and 400 in the—

Mr Camm—It was 18 months, wasn't it?

Mr WINDSOR—Some extraordinary length of time. So we are getting mixed messages. When the sugar industry—we all have to be very careful who the sugar industry is or any industry is, and I understand that—are saying they are having very little input about their industry's needs related to training, that creates a red light for this persistent issue that keeps getting raised. Do you see that as a problem?

Mr Camm—Certainly. In terms of industry what we have learnt is, whilst vocational education and training for a long time has called itself industry-led, there are some arguments

around there that it has actually been bureaucratised and therefore industry is not influencing our skilling agendas sufficiently. If you look at the mining industry, you will see we have now created what is called the Mining Industry Skills Centre. That skills centre has been given our training dollars for TAFE. So industry now has the purse strings rather than government and it is deciding what the priorities and the outcomes should be. We genuinely want to move closer to industry.

Mr WINDSOR—How long has that arrangement been working?

Mr Camm—It is only a new initiative; it has been happening in the last year.

CHAIR—The reason it is worth taking so far is that they are doing their recruitment to cover the skills shortage in the mining industry on the cheap—they are poaching everybody else's apprentices.

Mr ADAMS—From the rural industry.

CHAIR—Yes. Would you like to comment on that?

Mr Camm—I know what you mean. There has certainly been a shortage of skilled workers created in many provincial cities, particularly by workers picking up and going to the mining industry. The comment made by those industries is that it is because of the high wages being paid by the mining industry. That is certainly an issue that we need to grapple with. I would like to comment on bureaucratisation and the process around gaining registration as a training organisation or accrediting a training program. The Commonwealth is currently leading a process looking at reform of the Australian Quality Training Framework because it is considered too compliance focused with all the details, forms and things. That process is under way and is an important process for our system.

Mr ADAMS—Do you mean things like electricians' qualifications?

Mr Camm—It is more about the question: if you want to be a training organisation, what do you have to do to deliver the course? That is that process. On your comment around the training packages themselves, whilst national skills councils lead that process, there was a high-level review of training packages probably a year and a half ago. The clear message is that they have to be more responsive. That involves the turnaround time—the industry environment is shifting quicker than training packages can; it is about a three-year review process. That is unacceptable and we need to accelerate it.

Mr WINDSOR—Regarding the mining industry package that includes the skills centre that you talked about, do you see that as a model for other industries?

Mr Camm—We are embarking on that journey now under the skills plan. We say that, when industry can develop that level of engagement, we are happy to look at those types of options—absolutely. Our first principle has to be to give industry more influence and ownership of our agenda, because that is where our recruits go—they go to jobs. The closer we are to that agenda, the more employable our graduates will be.

Mr ADAMS—What do you think the dangers are? Are they in having industry driven jobs that only apply to one particular employer and having a very narrow skills base? What have you put in place to deal with that?

Mr Camm—There is a risk around a narrow approach to skills sets and a lack of portability of employability or qualifications. To deal with that, we certainly negotiate with the skills centre on priorities and the breadth of qualifications. Whilst you can broaden qualifications by having electives and all those sorts of things, ultimately employers make the choice. It is about making sure we do not throw the baby out with the bathwater. Government certainly still has a role in quality assurance and in the determination of priorities, but it is about making sure government is working closely with industry. I think that a partnership is the way you negate some of those risks.

Mr ADAMS—Sure, but what other stakeholders sit within that skills centre? Are we just saying to industry: ‘Here you are; teach them how you want to’?

Mr Camm—No, there has to be accredited training, so the qualifications have to be recognised nationally. That is one key point. That industry had been characterised previously by a lot of local, employer, just-in-time training that was not recognised, so we are trying to leverage that as well. On the board of that skills centre are both peak employer associations and real employers, as well as unions and government. A range of parties is involved in the prioritisation process.

CHAIR—Can I relate to you something that happened in New South Wales in the late 1980s and early 1990s. The government of the day decided in the interests of recognising the apprenticeship shortfall at that time to bring in what they called technology high schools, where high schools worked in collaboration with TAFE colleges—in fact, they moved the TAFE colleges onto the campuses of the high schools. That allowed years 11 and 12 students to access apprenticeship type programs of training in the TAFE colleges while they were in high school. They might do two or three days a week in the TAFE apprenticeship program, and at the end of year 12 the time that they had spent was credited against their apprenticeship time frame. Have you considered anything like that or are you doing anything like that in Queensland?

Mr Camm—It is absolutely critical to attracting more youth to the vocational education and training system. For some time a range of industries have had trouble recruiting youth, and the secret is to offer these pathways early. Queensland still has over 50 per cent of the school based apprenticeships and traineeships that are operating in the country. This is a big part of our policy platform. It is about youth being able to study vocational education and training as part of a contract of training in an apprenticeship or traineeship whilst they are at school, and absolutely that is recognised once they make the transition to a full-time apprenticeship or traineeship.

We are finding that a very successful program, but that is also supplemented by more institutional type training—I guess you would call them ‘taster type programs’—where youth can get access to both TAFE training and school based vocational education and training programs. There are some good examples in the marine sector—for example, a major employer just could not get any youth into his business but after getting involved in schools and school based apprenticeships he now has something like 200 school based apprentices and trainees in his industry.

CHAIR—That is obviously a very positive move. We have heard in a submission from Horizon Rural Management about their dissatisfaction with the lack of contact from government extension officers and researchers with farmers. Are you aware of that dissatisfaction, and what are you doing to address this concern, if it in fact is a concern? Are Queensland government agencies still involved in providing extension services?

Mr Camm—I am sorry, but it is a question that I am not across. The extension program is a policy responsibility of the Department of Primary Industries and Fisheries. I do not know if they are appearing before the committee. They certainly have an extension program and extension officers, but I am not aware of the detail.

CHAIR—Thank you very much for your contribution this afternoon. I apologise that you were a little bit later than was scheduled, but we got behind in our evidence taking and we continued to let it run over the scheduled time because we thought we were getting some very good information. We cannot do it without you guys, and I appreciate the contribution that you have made this afternoon. It is certainly going to be helpful in our deliberations once we get into the report process and the recommendation process. Thank you for coming.

Resolved (on motion by **Mr Martin Ferguson**):

That this committee authorises publication of the transcript of the evidence given before it at public hearing this day.

Committee adjourned at 3.03 pm