

PUBLIC ACCOUNTS COMMITTEE

WESTERN AUSTRALIAN INFRASTRUCTURE PROJECTS: FOLLOW-UP INQUIRIES

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 31 AUGUST 2011**

Members

Mr J.C. Kobelke (Chairman)
Mr J.M. Francis (Deputy Chairman)
Mr A. Krsticevic
Ms R. Saffioti
Mr C.J. Tallentire

Hearing commenced at 10.14 am

BRIGHT, MR FRANCIS ALFRED

Regional Economist, Department of Agriculture and Food WA, examined:

WILSON, MR NOEL STEVEN

Manager, Department of Agriculture and Food WA, examined:

HILL, MR TERRY RAYMOND

Executive Director, Department of Agriculture and Food WA, examined:

The CHAIRMAN: On behalf of the Public Accounts Committee, I would like to thank you for your interest and for appearing before us today. The Public Accounts Committee has nominated the Ord East Kimberley expansion project as a project for follow-up subsequent to its inquiry into the planning, delivery and funding of major infrastructure projects in Western Australia. The purpose of this hearing is to assist the committee in gathering evidence for this follow-up inquiry. The Public Accounts Committee is a committee of the Legislative Assembly of the Parliament of Western Australia. This hearing is a formal procedure of the Parliament and therefore commands the same respect given to proceedings in the house itself. Even though the committee is not asking witnesses to provide evidence on oath or affirmation, it is important that you understand that any deliberate misleading of the committee may be regarded as a contempt of Parliament. This is a public hearing and Hansard will be making a transcript of the proceedings for the public record. If you refer to any documents during your evidence, it would assist Hansard if you could provide the full title for the record. We also have with us here Mr Terry Hill, whom I am sure you know. Have you completed the "Details of Witness" form?

The Witnesses: Yes.

The CHAIRMAN: Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee?

The Witnesses: Yes.

The CHAIRMAN: Did you receive and read the information for witnesses sheet provided with the "Details of Witness" form today?

The Witnesses: Yes.

The CHAIRMAN: Do you have any questions relating to being a witness before today's hearing?

The Witnesses: No.

The CHAIRMAN: There are no technical issues so we are able to communicate okay.

Mr Bright: Yes.

The CHAIRMAN: As part of the procedure, we would like each of you to please to state your full name and the capacity in which you are providing evidence to the committee today.

Mr Wilson: My name is Noel Steven Wilson. I am the manager for the Kimberley at the Department of Agriculture and Food. As part of that, I am involved in the department's work in the Ord expansion project.

Mr Bright: I am Francis Alfred Bright. I am the regional economist with the Department of Agriculture and Food in Western Australia. My job is to have an understanding of the economics of the Ord and the economics of the region.

Mr Hill: I am Terry Raymond Hill, the executive director of irrigated ag and diversification, which is a directorate in the organisation in which the work on the Ord sits.

The CHAIRMAN: We have a series of prepared questions, but perhaps I could, as an introduction to that, say that in terms of looking at the Ord expansion, we are very well aware of the fact that it is both an economic project and very much about social development in the East Kimberley. I suppose today we are after some hard numbers and a better understanding of the economic side in terms of agricultural production. We are very appreciative of your expertise in that area and the degree to which you can help us with information. What are the most recently available figures for the value of production from the Ord River irrigation area? Is there an annual report? Can you give us the numbers or a report that will give us the up-to-date figures?

Mr Bright: We collect an estimate of the value of irrigated farm activity. In 2011 we released the 2010 figures. Last year the total value of irrigated farm activity in the 14 000 hectares was \$122 million. That comprised an estimate of the value of agricultural production that was \$31 million and an estimate of the annuity value of sandalwood plantations that are yet to be harvested of around \$91 million. The estimated value of 2010 was up \$20 million on 2009.

The CHAIRMAN: Can you break down that \$20 million increase between the annuity and the direct product going out of the region?

Mr Bright: It is mainly due to the increase in the sandalwood, because the sandalwood industry is growing at the rate of between 600 and 800 hectares per year.

The CHAIRMAN: Thank you for that. I just ask you to look at the direct agricultural production out of the Ord irrigation area. How does that \$31 million compare going back over the last five or so years? Has it fluctuated a lot or has it been fairly constant?

Mr Bright: There are fluctuations in the value of agricultural production due mainly to exogenous variables to the valley, which are prices. Also, the other thing that is affecting the value of agricultural production is that we have a fixed supply of land of around 14 000 hectares, and investment in forestry has been reducing the area of agriculture by 600 to 800 hectares per year. What we look at is the estimated revenue per hectare. If the estimated revenue per hectare is constant, as there are less land areas under agriculture, you would expect that the value of agriculture would decline in real dollar terms.

The CHAIRMAN: What is your current figure for the area under agriculture, perhaps the area under sandalwood, and you might have a third category that perhaps is not allocated? Are there any numbers for that 14 000 hectares?

Mr Bright: In terms of the 2010 figures, there were 7 074 hectares generating \$31 million, there were 6 163 hectares with an annuity figure generating \$92.8 million, and there was land that was not planted during the dry season of 621 hectares that yielded no revenue or value of production, giving a total irrigated farm activity of 13 858 hectares generating \$123 842 007.

The CHAIRMAN: Perhaps you could enlighten us a bit on sandalwood. Clearly, the calculation of annuity is probably pretty complex to explain to people who are not agricultural economists, but can we get a bit of a feel for the actual basis of that calculation and the expectation as to the markets for sandalwood?

Mr Bright: The way an annuity is calculated is that forestry is a terminal harvesting operation. We believe that the rotation length is 15 to 16 years. What an annuity does is looks at that terminal value and spreads it over the 15 years, and what it assumes is that trees grow at a constant rate. What it also assumes, as heart wood is the money wood within sandalwood, the heart wood is laid

down as a linear function of age of tree. The information that comes in for sandalwood I obtained from the prospectuses of the sandalwood companies and then looked on the net for various prices. I am not an expert in sandalwood, but in terms of not valuing sandalwood, the valley would be a lot worse off. It is the largest land use in the valley. By not valuing it, in my opinion, or in terms of looking at the value of irrigated farm activity, we are undervaluing it.

The CHAIRMAN: So just to get that clear, is that undervaluing total production or undervaluing the sandalwood production?

Mr Bright: Undervaluing the total value of the Ord.

The CHAIRMAN: Yes. We did not take into account that there is real value in sandalwood.

Mr Bright: Yes.

The CHAIRMAN: Of course, some of the sandalwood trees have already been in for 15 or 16 years; correct me if I am wrong. Has anyone done a study to go back and perhaps look at whether the basic assumptions in the prospectuses in respect of the level of production per hectare should be rethought and to what extent that might change the figure that you end up with for the actual annuity?

Mr Bright: Mr Chair, I cannot answer that question as I am an agricultural economist; I am not a forester.

The CHAIRMAN: Sure, but you have worked off the expectations in the prospectus.

Mr Bright: That is correct.

The CHAIRMAN: Marsden Jacob and others have concluded that the existing size of stage 1 of the irrigation project is too small for viability. Can you take us through some of the understandings of the cases as to why the larger area of irrigated land is going to improve the economic viability of crops and, perhaps even looking at different crops, as to why different size is important?

Mr Bright: Yes, I can. Let us start off on the potential size of stage 2 of the Ord expansion. Minister Redman released a report on Cockatoo sands, which is currently, I believe, outside the project area. There is some uncertainty in relation to how far down the line to development the Northern Territory is, so if we assume that the Northern Territory areas are not part of the mix, but Cockatoo sands and the clay soils in Western Australia are identified as part of the potential, there is probably 62 000 hectares of development possible. In terms of the stage 1 area, there is a myth that circulates that the reason that the sugar industry could not survive was that it was uneconomic. At the farm level, if you have an asset that is land that is worth between \$8 000 and \$10 000 per hectare, and the gross margin from sugar is \$400 a hectare and other land uses are up around \$1 000 to \$1 500 a hectare, sugar cannot compete with other land uses. In the expanded area, the potential for sugar—this is based on a report by ECS provided to the Western Australian government—in the Brazil experience, you need 12 000 to 16 000 hectares of cane land to supply a mill. The mill would be a multipurpose mill, much the same as the Brazilian approach is, so that on a daily or a weekly basis during the crush season, which might last five months, they make decisions as to whether to produce ethanol or to produce sugar. I would also expect that a mill in the stage 2 area would also be generating power.

[10.30 am]

The issue with the first stage of the development, that is the M2, the 8 000 hectares, unless it is a monoculture—that is one crop across the entire 8 000 hectares—I believe there is insufficient area to support a sugar cane industry. I will say at this point that it is very hard to forecast what will happen in the stage 2 area because it will depend on the strength of the Australian dollar, the relative returns from each of the crops that could be in the mix, who purchases the land and whether at this stage there are areas outside the M2 area of 8 000 hectares that would be sold at the same time. The last thing in terms of a sugar mill is that the current location of the sugar mill, which is

about 10 kilometres north of Kununurra, is an inappropriate spot for a new sugar mill. In discussion with various groups, the ideal location would be in the M2 area or to the east of the M2 area because once cane is hauled about 50 kilometres, or more than 50 kilometres, to the mill for processing, the various cost structures of getting cane to the mill and then milling it and extracting the sugar, borders on being uneconomic. If the Northern Territory development went ahead, it would be wise to probably put sugar mill on a place called Spirit Hills so it could draw from the M2 area, Sorby Hills East, which is east of the current mine site, Knox Creek, both in the Western Australian part and the Northern Territory part, and to the Keef River plain. That is sugar —

The CHAIRMAN: Before we move on to another crop, can I get some clarification on some of the things you said? Can we start with the actual level of production per hectare? You note, of course, the threat from the high Australian dollar and the rest. We will not try to guess at that. If we are compared with sugar production in Queensland, are we able, in the Ord, to get basically the same amount of sugar per hectare as Queensland if we were to compete with them?

Mr Bright: Based on past information, which is the second-last year of harvest—I do not have the figures in front of me—the average over the rotation approached 124 tonnes of cane per hectare. In Queensland, which is mainly a dryland system, I believe that their current extension programs are trying to achieve 85 tonnes. If we are looking at an Ord system, I believe that we have—it is not only by belief; it is shared by many—that although the Ord is a high-cost producer, it is a world-class producer in the production of cane.

The CHAIRMAN: Thank you. Coming back to the factors of economy of scale, you are saying that 12 000 to 16 000 hectares is required for a mill. I am assuming that is because it is a standard-sized efficient mill and you want to run it close to full capacity, and for that reason you need that area for sugar; am I correct?

Mr Bright: Yes. The mill that is currently there was only ever really an experimental mill. Its maximum capacity was 560 000 tonnes of throughput. I think the most it ever got to was about 510 000 tonnes. The standard mill that would be ideal and be of a size where there are economies of scale is in the order of between 1.5 million and three million tonnes. I do not have a calculator, but three million divided by 125 will give you the probable areas needed. We do have here on the research farm blocks of cane that are smut resistant, and several of those are showing very encouraging yields compared with the industry standard varieties that were grown in the Ord whilst we had a mill.

The CHAIRMAN: You mentioned a standard mill of 1.5 to three million tonnes per annum. What is the ballpark figure for the cost of a mill of that size?

Mr Bright: The capex needed—I would say that part of the new mill would be a boiler with sufficient capacity to produce power—would probably be in the ballpark of \$120 million.

The CHAIRMAN: Thank you for that. Before we go to another product, do other members have any other questions on sugar?

Mr C.J. TALLENTIRE: In terms of the energy required to run the sugar mill, are you saying that the by-product from the mill would be enough to power the mill as well, or would it need to be connected to the local grid?

Mr Bright: That is a difficult question to answer because there are two phases in a mill's life on an annual basis. Number one is during the crush season. During the crush season there is excess capacity based on the capacity of the production steam, so it would be a net producer of power and also, surprisingly, water, during the crush season. But in the off season, I do not know the answer to your question because I do not know whether the boiler is run 12 months of the year. I am not sure whether there is a smaller boiler to power the mill's power requirement in the off season. That is about the limit of my knowledge on that.

The CHAIRMAN: You mentioned the fact that the citing of the mill obviously has economic implications in terms of transport costs. Are there other transport costs, such as the port and shipping, et cetera, which are affected by the overall size of the number of hectares and the size of annual production? I am asking whether it is a major or minor factor in the economics of sugar.

Mr Bright: I can answer the question; I am just working out a way to say it easily. As the freight per tonne of sugar produced is a linear function of the amount of sugar produced, as production goes up, the amount spent per tonne of sugar produced should stay constant. The cost of who pays for that transport will actually depend on a supply agreement for growers providing cane to the mill for sugar production. The people who I have spoken to in the valley who are landholders and who are keen to grow sugar would prefer to go to a Queensland-type split in their pricing in their supply contracts. They would also need longevity in their supply contracts. I think that a mill or miller who may be independent of the growers would also like a long-term supply agreement because mills make money by having large quantities, or high throughput, on an annual basis for their business planning horizon.

The CHAIRMAN: Thank you for that. You were going to move on to another crop.

Mr Bright: The next crop that we can talk about is rice. Until three weeks ago—it does not matter; rice will be in the mix. I am not sure how big it is, but the commercial experience from last year was that seven and a half tonne per hectare was produced. The exposure of the rice industry as an agro industrial crop is that it is sold in the world market. Last year's price was up to around \$500 a tonne and this year's price is around \$280 a tonne. If you are looking at constant growing costs and the same yield, growers would receive about 60 per cent of the revenue that they did last year. That is the volatility of rice. The area of rice needed is probably in the order of 6 000 to 7 000 hectares. The preferable soil type is the aquitaine soil type, which underlies probably 70 per cent of the M2 development. There commercial yield is around seven or eight tonnes. It could be higher, depending on whether the economic practices and husbandry of the crop is finetuned for this area. The amount of capex needed for investing in the rice industry would be in the order of probably \$30 million to \$40 million. There would need to be a dehuller, and it depends on how we can attract an investor who wants to go further than just dehulling and sending out brown rice semi-hulled.

The other issue that is quite apparent in our return to growing rice commercially in the valley from when it was done previously is that it needs to be harvested at about 22 per cent moisture and dried down in industrial-scale grain dryers to a moisture content of about 14 per cent. From there on it can be treated like any other grain crop. The issue in the Ord is that the harvesting period is during the build-up. If the harvest is delayed until the grain contains 16 per cent moisture, the result is that a high proportion of the grain will be cracked. That means it looks slightly milky on the end. A cracked grain does have markets, but it is not the premium whole grain. Developing a rice industry in the Ord would be limited by the capacity of grain growing, and I expect it would require \$30 million to \$40 million capex to get it going. Any questions on rice?

[10.45 am]

The CHAIRMAN: If I can just see if I understood those figures: if you are getting \$280 to \$300 a tonne, and you were getting eight tonnes to the hectare, then \$2 000 to \$2 500 per hectare would be the general area of return with a low world price; is that realistic or not?

Mr Bright: Yes, Mr Chair, that is correct. To add a little bit more weight to my statement: we do have an industry development group, which is a group of farmers who provide advice to the department, and one of their cut-offs in terms of looking at what could be in the mix is—crops that generate more than \$3 000 revenue per hectare per year are considered the mix. So, I am not a rice farmer, but my budgeting indicates that the growing costs of rice, depending on the operator, depending on the machinery mix and depending on the amount of chemical that is used each year, you are looking at between \$2 200 and \$2 400 per hectare. That would include harvesting, grain

drying, dehulling et cetera, et cetera. So, if you are making \$2 400 to \$2 500 per hectare, the gross margin per hectare, when there is a low world price, is looking at around \$100.

The CHAIRMAN: Thank you. Any other questions on rice?

Mr J.M. FRANCIS: This is just little bit off your area, but other than the fluctuations in the value of the Australian dollar, what roughly are the big forces that create such diversity in the grain price and of rice in the world market? I think you said it went from \$500 to \$280 or something; that is a massive change in one year. What drove that in the world market?

Mr Bright: Well, in Australia, up until last year the major rice-growing area had low quantities of water. The Riverina, which is the traditional rice growing area which can produce up to, I think, high quantities of half a million tonnes, if they are not in production there is a half a million tonnes not going into the world market. There are also other supply areas that may have suffered various problems.

Mr J.M. FRANCIS: So that forced the price up last year then?

Mr Bright: Well, I am on the edge of my knowledge.

Mr J.M. FRANCIS: No, that is fine; I just thought rice is one of those things, I guess, that has a shelf life if stored. It does not have to be used straightaway; it is not like fresh food as such. So, I would have actually thought the fact that it can be stored longer, the prices would average out over years. But that is fine; I will research that somewhere.

Mr Bright: I think that actually, Joe, if you are looking at a 10-year drought in the Murray-Darling basin, inventory stocks of Australian-produced rice would have been at an all-time low. That is my gut call, given what you have said about it being a grain that can be stored for more than one year.

Mr J.M. FRANCIS: Thank you very much.

The CHAIRMAN: Just as a cost comparator, if we could, please, Francis: how do we compare with rice growing in the Murray region in terms of level of production and cost factors in production?

Mr Bright: Mr Chair, I cannot answer that question with the information I have in front of me. I can find out, out of session, and provide the information to you, but I would need to speak to some contacts here in the valley who have come up from southern New South Wales.

The CHAIRMAN: If you would provide that information later as supplementary information that would be most appreciated. Any other questions on rice?

Mr C.J. TALLENTIRE: Francis, accepting the difficulties we have had with the 2011 rice harvest, what is the return per hectare likely to be there?

Mr Bright: Based on the \$280 a tonne, and assuming the difficulties have no impact on yield, then the people who are currently in the industry expect to just cover costs here in the Ord, but their philosophy at the moment is that they are willing to wear a loss while they find out more about crop husbandry. So, it is really a commercial-scale trial where they can try things. A couple of the issues they have talked about are strategies in applying fertiliser and strategies in applying seed. Last year they found that the highest yielding spots in their bays were actually on the headlands, and it is likely that those spots were double-seeded and double-fertilised. So they have now looked at increasing the planting rate from—I think it was 120 kilograms last year, and growers went up to between 160 kilograms and 180 kilograms. As to fertiliser, I do not know the planting rate, but I do know that this year they have applied urea by air about six weeks ago. Because once you wet a paddock up, it has 25 centimetres of water on it, it is clay soil, and the only way to access or spread chemicals or spread fertiliser is by plane.

The CHAIRMAN: Thanks, Francis. We will let you move on, if we can, to another crop.

Mr Bright: The next crop in the mix is cotton. Let us knock out the capex, and initially we are looking at probably \$40 million, \$30 million to \$40 million. There were discussions a couple of years ago with people who wanted to grow cotton. We had a processor who was interested, and they wanted between 50 000 and 75 000 bales for them to invest that amount of money in infrastructure in processing cotton here in the Ord. This year there are 600 hectares of cotton being grown. I spoke to the agronomist, and her objective is to get 10 bales per hectare. Most of the growers that I talk to in relation to their expected level of production say it is eight bales per hectare. The value that they will receive per bale is around \$500, and the cost to grow cotton is between \$2 500 and \$2 800. This year, because of the high world price—again, if you look in Queensland and New South Wales in the more traditional areas, things were a tad dry, and then things were a tad wet. So the world price is high at the moment, so that the cotton actually is being harvested in what looks like a large round bale. It will be wrapped, it will be transported by truck to Queensland, and it will be ginned in Dalby, which is an exceptional situation that happened this year. In the longer term, if we are looking at cotton within the Ord 2 area, or the M2 area, we are probably looking at areas of 7 000 hectares. Seven thousand hectares at eight bales per hectare average would give you 56 000; 9 000 hectares at eight bales would give you 72 000. That puts you in the amount of bales required for a cotton processor to invest in a new gin, or upgrade the old gin that is currently sitting there and basically be rebuilt from the ground up. The advantages that I see for cotton are actually the strong synergies with other parts of agriculture. The great thing about cotton, from the numbers I have seen, is that for an eight-bale crop there is production of cotton seed. That cotton seed can then be crushed, the meal is a high-protein meal demanded by the pastoral cattle industry in the north, and the remaining oil is actually biodiesel. From doing the numbers a few years ago, it costs, in diesel, to grow cotton from planting to harvesting in the order of 125 litres of diesel per hectare. An eight-bale crop will produce about 600 litres of cottonseed oil, so it is a net producer of 475 litres, approximately, of biodiesel. We do not know when the next oil price spike will be, but that provides a benefit that we often do not think about. So, that is cotton.

Another crop that could be in the mix is a thing called chia. It is tied up with confidentiality guidelines by the chia company, but my understanding, from speaking to people in the valley, is that there is a desire to grow chia in the valley. I understand that it is suitable for the soil types out in the initial M2 area. The advantage of chia, cotton and rice is that growers can react to annual price signals. In sugar, sugar is actually a grass that re-grows, and the optimum rotation length depends on yields—the sliding off in yields from plant cane to fifth and sixth return, which means six harvests. Here in the Ord formerly, when we had a mill, the ideal rotation length was between five and six years. So sugar is high capex; once you are locked into sugar then you may need 10 years. If there is a cotton industry, then the issue is that if you are moving in and out of cotton, that is not an effective use of infrastructure. Chia can move in and out; I am not sure of the capex required for chia.

[11.00 am]

I would say that there is seed cleaning, and the packaging prior to sale. With rice, again, if people step in and out, then a processing plant may stand vacant. But, as I said in one of my first answers, we do not know who will buy the land out there. We do not know what crops they prefer to grow. We do not know what diversification they have in their business and whether they are holding a processing facility within the Ord. The other thing that comes with scale, and which is not nearing value now, is actually capturing more of the value of production here in the valley. We produce red-flesh grapefruit. Red-flesh grapefruit is probably a red-flesh grapefruit juice market. But paying 23c per kilo to get the second-grade fruit to Perth to be crushed for juice, when you are getting 30c a kilo, there are not margins to utilise that second-grade fruit in Perth. If there was a fruit juicing plant here in Kununurra, we might actually see that there are increased returns to vary the crops. If we looked at food-grade packaging for chia, for chickpeas, for mung beans, and for red kidney beans,

we may see more employment—which goes back to your point, Mr Chair, of social investment; we may actually see more employment in the valley rather than just labour for farming.

The CHAIRMAN: Do members have any questions on those other crops?

Mr C.J. TALLENTIRE: Thank you for that. I am just curious that you have not mentioned much about the cucurbit industry. I understand that has had a fairly significant decline in recent years. I thought that would have been an example of an industry that could have generated quite a bit of employment as well. What are the underlying reasons for the failure of that industry, or the decline of it?

Mr Bright: There are a number of factors. Number one is the growth of the sandalwood industry. There has been no land sold for agricultural purposes in the valley in the last three years. All the land parcels that have come on the market have been bought by forestry companies. So that is one thing. Number two, the cucurbit industry might be seen to be in decline, but in terms of the riskiness of growing cucurbits, essentially it is quite a high-risk industry. For example, the gross margin per hectare can range from minus \$3 000 to plus \$4 000 on a week-by-week basis. So, it is a high-risk game. And if you look at a sandalwood leasing agreement, it might be \$1 000 to \$1 300 risk free. If a cucurbit crop is a high-risk crop, then you need to get that \$1 300, which is risk free, plus a return on the risk that you hold in terms of production, and also a return on top of that for your gambling or punting ability. So there is a management return, a risk premium, and a risk-free base, and also, on top of that as well, there is the repairs and maintenance on machinery that you would use for growing cucurbits. With rock melons, you have a four-day window to get them off. If we are talking about cucurbits in the stage two area, the M2 area, then a limitation to growing cucurbits out there is distance. The example that I have been told from growers here in the valley is that the northern end—I am assuming that you have been around the valley?

The CHAIRMAN: Yes.

Mr Bright: There used to be a person who grew rock melons and honeydews at the northern end of the valley, up near the Pinnicombe Range. Their processing facility was based at the southern end of the Packsaddle. In the warmer times of the year, they would pick rockys that were market ready from the field. They would sit on the side of the field until they were picked up, and by the time they got to the packing shed four hours later, they would be off and would be overripe. The issue that you have in the M2 area, within the project area and the project parameters, is that I understand that there will be no power. If there is no power out there, then I doubt that there will be horticulture out there, because there must be at least 25 to 40 kilometres of road transport between the field and the excess capacity that we have in the valley. Does that answer your question?

Mr C.J. TALLENTIRE: Yes. Thank you.

Mr Bright: But just to go on from that, in decline, yes; but this year, again, from speaking to growers, growers have been getting \$50 a box for honeydew and rockys, and that is making a gross margin of around \$35 a box. And the reason for that is that back in the 1980s and early 1990s, when the Ord was producing most, if not all, of the off-season production, there was not any competition in supply. Now there is Mataranka in the Northern Territory, parts of New South Wales, and parts of Queensland, which are producing. When you increase supply across the board for the domestic market, the price has got to fall. This year, when Queensland has been knocked out because of floods and damage to infrastructure, the Ord has almost the only producers, and they are getting between \$40 and \$50 a box. So they are very happy, because last year, based on the average, rock melon were worth \$18.49 over the season, honeydews were \$17.56, and watermelons were \$967 a tonne. Watermelons this year are worth \$2 600 per tonne. So growers have said to me, “Have you got a spare 200 tonnes lying around?”, and I am saying, “No”.

Mr Hill Mr Chair, if I might, Francis has run through some examples. There are quite a number. But the other thing we are also finding with, I guess, the impending release of land at some stage in

the second stage of the Ord, is that there are companies identifying opportunities that are not on our horizon. Francis, you might want to comment further, but I am aware that we have had a Chinese company interested in large scale cassava production. We had another company interested in large scale sugar production for animal feed pellets. So it is very interesting when you look at the land, and our constrained land and water environment that we have in this country, where you have new land and new water opportunities that appear that we certainly did not predict. Francis has given some examples of the ones that we have looked at, but there are others that we certainly are finding out as people show interest.

The CHAIRMAN: Just on a technical issue, Francis, were you able to hear Terry's comment then?

Mr Bright: Yes. Thank you, Terry, for reminding me of all those opportunities that we know about, and then those that we do not know about; so ta!

Okay. Broadacre cropping opportunities: I have talked about sugar, I have talked about cotton, I have talked about rice. Sandalwood requires a particular soil type. I understand that the M2 area is mainly a soil type called aquitaine, which is not suitable so much for sandalwood, but it is great for rice. If you look at the Ord expansion beyond the M2 and go out into Knox Creek and go into the east you actually get back onto Cununurra clays, and Cununurra clays is one of the preferred soil types for growing sandalwood. There is also chia, which I have talked about as much as I can.

The CHAIRMAN: Can I ask a question on chia, please, Francis? The current production, has that really just been trial plots, or have one or more of the farmers there actually looked at it as a crop that they have tried over several years?

Mr Bright: Chia first came to the valley about four years ago. My estimate, given the amount of purple flowers currently around the valley, is that it is a very significant area now. I do not know for sure, because as I say the chia company has very strict confidentiality guidelines—I recognise that this is also in the public domain through *Hansard*—but I would say in the thousands of hectares. I cannot be more specific than that, because I do not know.

The CHAIRMAN: Thank you for that.

Mr Bright: It is a commercial crop. A couple of weeks ago I was at a mate's party, and he showed me biscuits with chia in them. So the marketing effort is going well. They also, I understand, have signed off on a deal also with Bakers Delight, and they are looking at further expanding the market. That, in terms of developing agriculture, is a demand-pull situation, which is basically using an understanding of the value chain to actually affect what quantity is supplied back on the farm.

The CHAIRMAN: Francis, you were moving on to sandalwood. Earlier I think you said that about 600 to 800 hectares a year is going across to sandalwood. Is that fairly uniform? Is there an expectation that that is continuing at the current time; that is, that the sandalwood interests are still keen to buy up or to take lease on land for sandalwood?

Mr Bright: The reason that I am delaying my response is if the correct soil type was available, I would suspect that the answer would be yes. If the incorrect soil type is on offer, either for lease or to buy, then I do not think that a sandalwood company would be interested in leasing a type of soil that is inappropriate for its plantations. So it actually depends on the supply of soil, not available landholdings.

[11.15 am]

The CHAIRMAN: But the interests who are involved in sandalwood, their current view is that they wish to continue to grow their area and their production if they can. Is that a fair assessment?

Mr Bright: I do not know. I would suggest so, but I do not know for a fact. The other thing that would probably come into play is where they grow. So it may not be in the Ord.

The CHAIRMAN: You may have actual reports which can provide this to us, because it is really numerical data, but going back over quite a few years, there has been a fluctuation clearly in the area under agriculture. Are there reports available so that we can actually track over the last 10, 20, 30 years how much was allocated, either overall, or more specifically, to particular crops?

Mr Bright: The Department of Agriculture and Food has fairly good records back to probably 1998. I do have a file from my predecessor that goes back to 1988. As to before then, there is a lady who is doing a PhD on agriculture, and she may be able to provide that. I will speak to her and ask whether she has other —

The CHAIRMAN: I do not know whether you can hear us. We have lost our signal.

Mr Hill: I will ask Francis to provide the committee with that information; that is, the information that we can get. Francis is right. We have good information from 1998. But we should be able to put out some more information. It may not be so complete. I will organise Francis to do that, Mr Chair.

The CHAIRMAN: Hello, Francis! We lost you there for a moment. We are back. Thank you very much for that. So I perhaps cut you off. The last set of questions really goes to employment. But I think you were going to say something before I got you back to sandalwood.

Mr Bright: I was simply going to say, “Does that answer your question?”, and I think it did.

The CHAIRMAN: Yes. Again, while we were disconnected, Terry indicated that he would get back to you, because we would appreciate it if we could get those figures on the actual area under agriculture and crops going back as far as that is available, even though there might be some holes in it.

Mr Bright: Yes.

The CHAIRMAN: Okay. If that could be provided as supplementary information, we would very much appreciate it.

Do other members have any questions before we go to the employment questions? We would like to get some idea of the level of employment generated through agricultural production with the various crops, even with sandalwood, and whether it is at the planting and maintenance stage, because clearly you are not at the major harvesting stage yet, because I know that sometimes with particular crops there is a shortage of labour. So if you could perhaps give us a bit of an idea of numbers and some of the problems that local growers have in getting labour at the right times, that would be appreciated.

Mr Bright: That is a very difficult question to answer with the information that I have in front of me. But a number of years ago, I did prepare a document for the minister, I think Minister Redman, which actually looks at the amount of labour required on a per-month basis throughout the year. Subject to going back and looking at that data, at this point in time I cannot answer the question.

The CHAIRMAN: I would hope that you might be able to provide that as supplementary information, and, if need be, clear it with the minister and let us know whether or not we can have that information.

Mr Bright: Yes. If you are talking about the development phase, one of the greatest costs of going through the development phase is actually the mobilisation of machinery. In the original Marsden–Jacob report for the business case for the Ord, they have a 15 per cent mobilisation. If you are looking at a machine being worth \$400 an hour, and it is sitting idle because there is no labour, and it is not generating revenue for an hour, you have lost potentially \$400. If you are bringing that machine, or a whole fleet of them, up from Perth and it is 40 hours driving up here, the mobilisation would probably be in the order of \$40 000 per machine. So labour is a minor cost compared with the machinery cost of getting the machinery here to do the development work. So is that one of the parts of the answer that you wanted?

The CHAIRMAN: Yes. That is the development cost. I was looking for more the agricultural production, assuming that you have the land prepared and ready for irrigation. You might like to just give us a general view of the various crops and how labour intensive they are, whether some require more labour than others, and whether that labour is available in the valley.

Mr Bright: Okay. I think I can do that, not by talking about absolute hours needed, but comparative hours needed, and by comparing the various crops. For your broadacre crops, with rice, it varies. The primary activity—compared with other crops, which is actually building the beds to plant on—for rice, that is not needed, because you are growing on a paddy. For sugar, in later years on return crops you do not actually need much; you just need one pass. For growing cotton, for growing chia, and for any of the other crops that are grown on beds, which are broadacre, whether it be chickpeas, legume, sorghum, hybrid seed, any of those, then you are probably looking at primary tillage of probably four to five hours a hectare, whereas the other crops might be an hour per hectare. If you are looking at horticultural crop establishment, such as the cucurbits that were mentioned, you are probably looking at a similar amount of primary tillage. The split starts to happen when there are applications of chemicals and applications of fertiliser, and also further on down when you start harvesting. I can provide to the committee a summary of the gross margins which I have prepared, which will give you an exact figure per hectare of hours used.

The CHAIRMAN: Again, it would be most appreciated if we could have that as supplementary information. So, most of the labour involved is really in the support; that is, the maintenance of equipment, whether you need to use aircraft for the control of weeds or pests, or for fertiliser. So it is really those support industries that would have knock-on labour effects. To what extent can that labour be sourced locally, or is it just that contractors come in, do a job for so many weeks and then move out again?

Mr Bright: In general, the capacity within the valley for the ancillary services, such as crop dusters, such as spray rigs and such as tillage operations, within the stage one area, there is enough capacity to do the job. If we are talking about stage two—I am talking about the initial 8 000 hectares—I believe that there is sufficient excess capacity to deliver on those ancillary services. Looking at the broadacre businesses that are in the valley still—one manager, one foreman, one mechanic, and two tractor drivers per 1 000 hectares.

The CHAIRMAN: Thank you for that.

Mr Bright: And one water man!

The CHAIRMAN: Right!

Mr Hill: Mr Chair, the pressure comes on in the horticultural sector. I think Francis was focusing in terms of the broadacre crops; it is all at the front end. But in the horticultural crops—melons, mangoes—there is a very heavy labour demand, and that is often where the pressure comes on. For example, Francis, you might want to talk about the issue with labour for the mango harvest on a large mango farm. But certainly for the horticultural crops, there are very large requirements for labour, particularly through the harvest period, which can be reasonably long, particularly for melons.

Mr Bright: Okay. I will go through mangoes first, because the mango industry is a significant land use. At the moment there are 580 hectares of the stuff, of which last year 440 hectares was harvested. I am actually stepping away here from being an economist and being more of a crop husbandry person, which I cannot say I am experienced at being, but my job is to gain intelligence, and understanding the crop and the soil and the water and all those things actually helps me to do the job. The issue with mangoes is that the juice is under very high pressure. If you break a mango off where the stem meets the fruit, you will actually get a burst of extremely acidic juice, which will burn the skin. So I think mangoes is one of the few industries where fruit picking is not paid per piece or per box or per bin but is actually paid per hour, because if you do break off a mango, it will

spoil the whole 10-kilo picking box. Let us face it—in terms of using unskilled labour for mango picking, if you do not get it right, then the proportion of non-damaged fruit could be pretty low. So people who pick mangoes are generally very experienced, and there is a lack of them. One of the largest growers in the valley actually employs a team of pickers for an eight to 10-month period and brings them in from Mildura, houses them, pays them well, looks after them. Other commercial-size operations generally use contract pickers, or pick themselves.

We were talking about last year and how hard it was. When mangoes get wet from rainfall, you cannot pick them. If they get overripe, by the time they get to the Perth market or wherever, they could be off. So picking dry fruit is preferable, or is essential. Picking wet fruit is not possible, mainly due to wet fruit being not good for the market. If you are on a clay-type soil, you will tear your hair out between the rows getting the fruit actually out of the orchard, and the cherry pickers that are used on the big trees—it is probably an unsafe workplace. Mangoes are also picked during the build-up—September, October, November—when temperatures are warm to hot. That is to a local. To a person living in temperate areas, it would be extreme to unbearable. There are also green ants in the trees, and the fruit might be dispersed throughout the trees. The reason for making that point is that drawing upon backpacker labour, which may be unskilled, may affect the quantity of first-grade fruit picked. There may also be a high leaving rate, because the conditions are pretty tough for picking.

[11.30 am]

When it gets into the shed, there is also a lot of labour. There are mango orchards that are two hectares, five hectares, 20 hectares, and up to 250 hectares. The amount of automation in the packing shed depends on the throughput of the shed. So if you have got over 100 hectares, there will be a higher automation than if you have got two hectares. Given that we are talking about Australian labour at the award rates, if there is a lot of automation, that is great. But in small sheds, it may be that it is an owner-operator packing operation, with the kids involved in the shed as well. So we have this huge variation in the scale of mango orchards. Some are 100 per cent commercial, and some are an additional income source because when they bought the block it happened to have mango trees on it.

Last year, in terms of mangoes, from speaking to my of my contacts within the valley, there was greatly reduced quantities of mangos, by probably 67 per cent, somewhere in that order. Even with an increase of up to two and a half to three and a half times per tray, the revenue from the previous year's crop did not make a profit for many people.

The CHAIRMAN: Thank you for that. What about the sandalwood industry? What is their labour demand, and at what stage does that come?

Mr Bright: I do not know. I can say, from driving around the valley, that they look busy; they have got lots of green shirts wandering around the paddock when they are planting. That is all I can say. I do not know what their labour requirements are.

The CHAIRMAN: So they do not have a high maintenance need to prune and that sort of stuff?

Mr Bright: Again, Mr Chair, I do not know. I would suggest that you contact probably one of the forestry companies to get that answer, because I do not have it.

The CHAIRMAN: Thank you. You have been most helpful in elucidating a lot of issues for us. In coming to an end, can you tell us where the major markets are? I presume they are different for different crops. But the remoteness of markets, and where those markets are, and the fluctuation in those markets, can you make some comment on that?

Mr Bright: Yes. For broadacre crops, I can speak of what happened when CJ Ord River was here. CJ Ord River sent all the sugar to one of their refineries in Surabaya. They have indicated that they will buy whatever sugar comes out of the Ord. With rice, the areas of rice probably do not go into the domestic market, probably into a local export market. We do not know. It depends on who

actually markets the crop. Sunrice is an option for marketing any rice that is grown in the Ord. Chia would be marketed wherever their markets are, and it will be marketed by the chia company. I can actually give you the contact details for the CEO, and you may get more information than I have.

The CHAIRMAN: If you could do that for us later, that would be appreciated, please.

Mr Bright: Okay. What are the ones I have missed? With cotton, it would be the cotton lint, I would suggest, that is exported, probably to China, or somewhere where there is a demand for cotton and there is the infrastructure necessary for making cloth or cotton buds or whatever they use cotton for. It would be good to see that the by-product stays in the Kimberley, because of that biodiesel potential. Also, after the live export ban in June of this year, we really do not know, in terms of the strategic view within the region, what changes that will mean to the cattle industry. If there is a demand for supplementary feeding, then cotton seed meal is very much in demand in the Territory, Kimberley and Pilbara regions; and lower freight costs to pastoralists would mean that it is cheaper than getting other types of supplements from, say, the eastern states up here for supplementary feeding.

For most of the horticultural product that is produced here in the Ord, my understanding—I have not done any work on it for a long time—is that about 75 per cent of the horticulture that is produced in the Ord supplies the Perth wholesale market at Canning Vale.

A source of competitive advantage that the Ord has compared with the rest of Western Australia is that we are fruit fly-free, so that enables us to supply into markets that temperate Australia may not be able to supply. If the area of freedom is maintained, it may also give us some competitive advantage within export markets. In terms of going east, the main thing with cucurbits is a thing called melon thrips. But a plant clearance, or a plant health certificate, will see that that fruit can go east. If it goes south to Perth, you do not need one of those. But if it goes from Perth into the eastern states, it has to pass through states where there is quarantine, so you need a health certificate. So if it comes from here and goes straight to the Brisbane markets, Sydney or Melbourne, then you need a plant health certificate.

With mangoes, at present it is mainly for the domestic market. There is a sort of season that follows the weather. I understand that Darwin is the first place that comes in, the second place is Pine Creek, the third place is Katherine, and the fourth place is Kununurra, and then you move down the coast on both sides. Most of the mangoes that are picked go into the Perth markets, again.

Red-flesh grapefruit is a little different. Red-flesh grapefruit is actually the smallest of the citrus market sectors in Australia. When the Aussie dollar was down around 70c, there was a six-week window of opportunity, in March, April, in the Australian domestic market, and then the US-produced red-flesh grapefruit came in at a cheaper price. So much work is being done in looking at other markets, from within DAFWA, and there are market access protocols in terms of biosecurity and pest and disease and treatment of fruit. In fact, the North Asian market of Japan is now open. There was a decision taken by the largest red-flesh grapefruit grower this year that because they were involved with the Rewards Group they did not have the quality of fruit needed for Japan; and once you get a bad reputation in the market because of a poor year's look of fruit, you can terminate that market opportunity quickly, so they decided not to go into Japan at all this year. But I suspect that in the future, as the trees near maturity—and production out of the Ord will be around 3 000 to 4 000 tonnes—the Japanese market will open up. The thing with the Japanese market is that it actually fills a market window where there is no other red-flesh grapefruit. The grapefruit grown in this area are probably the sweetest grapefruit in the world, because they are grown in an area where there is the highest sun radiation of any commercial citrus growing area in the world. So they are a very sweet grapefruit when they are picked, and their sugar–acid ratio is up around 8.5 or nine to one. That is when they start picking. If people in Perth buy yellow grapefruit —

The CHAIRMAN: Francis, we are finding this very interesting, but we are running out of time. It is great to draw on your huge wealth of knowledge. Do any other members have final questions?

Mr C.J. TALLENTIRE: Yes, one quick one. Francis, are you able to quantify the level of Indigenous employment in broadacre irrigated agriculture in the Ord or in horticulture in the Ord valley?

Mr Bright: My understanding from my contacts with the industry is that there is very low to nil engagement of Indigenous people in horticulture or broad-acre. In the new stage two area, the M2 area, I am not sure what will happen. But I think if we start seeing more value captured in the region in terms of downstream processing, there may be engagement of Indigenous people in the processing side rather than farming side.

A good friend of mine actually had the Miriuwung–Gajerrong people out on his farm, looking at how he runs his business. That was this year, and he has been inviting them for a number of years, and they have never said yes. He is actually away at the moment. I would like to chew his ear and find out what was actually said and what their interest is. So that is the limit of my knowledge.

The CHAIRMAN: I just want to say thank you very much, to Francis, to Noel and to Terry. I have some brief formalities to wrap things up. A transcript of this hearing will be forwarded to you for correction of minor errors. Any such corrections must be made and the transcript returned within 10 days from the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed to be correct—although given that it is coming to you in Kununurra, if you need a bit more time, I do not think that will be a problem. New material cannot be added via these corrections, and the sense of your evidence cannot be altered. Should you wish to provide additional information in terms of both what you have undertaken to give us, or other information that you think might be useful or clarify something, please include that supplementary submission for the committee's consideration when you return your corrected transcript.

Again, I am most appreciative of the amount of time and expertise that you have given to us. Thank you very much.

Hearing concluded at 11.44 am