

TRANSCRIPT

ECONOMIC DEVELOPMENT AND INFRASTRUCTURE COMMITTEE

Inquiry into local economic development initiatives in Victoria

Traralgon — 24 April 2013

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Dr R. Faggian, Head Researcher, Gippsland Climate Change Adaptation Project (sworn).

The CHAIR — Welcome to the public hearings of the joint-party Economic Development and Infrastructure Committee Inquiry into local economic development initiatives in Victoria. Evidence that you give today is protected by parliamentary privilege, but any comments that you make outside this hearing will not have the same sort of protection. The transcript of today's proceedings will also become a matter of public knowledge and an open document. Could you please state your full name and whether you are here representing a company and the position that you hold with that company, if there is one?

Dr FAGGIAN — My name is Robert Faggian. I am here as an employee of the University of Melbourne, and I will be talking about a project that was formerly with the Department of Primary Industries. The first year or so it was under the auspices of DPI, and now it is with the University of Melbourne.

The CHAIR — Thank you. Can I now invite you to make an oral presentation?

Dr FAGGIAN — No worries. This project, as we will see in the proceedings, was called the Gippsland Climate Change Study. We have changed the focus a little bit to look more at infrastructure-related issues and regional development, so we have changed the focus slightly with the shift from DPI to the University of Melbourne. It is now called Agriculture Industry Transformation — Gippsland.

Overheads shown.

Dr FAGGIAN — We were approached in 2009 by Wellington Shire Council, who wanted to know the impacts of climate change on their region. That was based on some work that we had done in other parts of the State. We spoke with them and other councils in this region, and we used this particular slide as a conversation starter: this is the average maximum temperature for Victoria in February 2050, according to CSIRO projections. And the point we were trying to get across is that the challenges agriculture will face in the north of the State are very different from those that will be faced in the south of the State, in particular the south-west of Victoria and in Gippsland. So there will be lots of opportunities presented to agriculture by changing climate.

As I said, the initial question was: what are the impacts of climate change? After a bit of discussion, that became: how do we sustain livelihoods in a climate-affected future here in Gippsland? And how do we, as a region, capitalise on the opportunities presented by Gippsland. So our mission statement, I guess, for the project is strategically positioning Gippsland to respond to drivers of change.

Primarily what we are trying to do is understand where agriculture needs to adapt and where it needs to transform so, as climate changes over time, farmers can either decide to make incremental changes to adapt — things like improving their irrigation or use efficiency, changing crop varieties, putting nets over their crops to change the microclimate or to protect against hail, that sort of thing. Or they can make bigger changes, like changing their farming system, going from one pasture system to another, or ultimately they might need to decide to change location altogether, to change species, to change to an entirely new land use. We are trying to provide the underpinning data to enable some of those decisions to be made.

Very quickly, we have agreed to do 12 models of agricultural commodities across the region, develop some adaptation reports around those commodities and do a few economic case study sites, where we delve into a bit more detail.

The project is set up as a four-year project but with stop-go's at the end of each year. The thinking is that either party can withdraw from the project but at each point whatever has been produced will be of use to the region. The first year was gathering all of the data, which can be used by other projects around the region. The second year — which we are approaching the end of now — is modelling different commodities. The third year will be looking at the impacts and adaptive responses. The fourth year will be asking: how will this information be used by the region?

The model is an internationally endorsed approach. The key points are that it takes scientific information but also expert opinion — and by expert opinion, I mean farmers give us anecdotal evidence and we can transform that into modellable data. We model all the biophysical characteristics that impact on plant growth. This is the climate arm. There is also a soil arm and a topography arm. This is an example of how the outputs look. This is the Western Port green wedge components of Casey city and Cardinia shire, where we modelled eight commodities. This one is asparagus.

Once we have a look at the scientific literature we develop a model. It spits out a GIS layer — a map — where green indicates that those geographical areas are very good for asparagus production. As it transitions to light green, yellow and so forth it becomes less good. The end point we are using is yield. Dark green means they would expect a 100 per cent yield in those locations based on soil, climate et cetera.

This is the second cut after speaking with local experts such as the asparagus growers in the region. Once again, this is after including input from geologists, soil scientists and that sort of thing. You will see one of Victoria's major asparagus growing regions just near Koo Wee Rup — 93 per cent of Australia's asparagus is grown in that little green patch. It is the eighth largest in the world by production volume but only 12th largest by area, so there is value in locating these commodities in areas that are inherently good for their production. It is an important export crop. We have modelled this into the future using CSIRO climate change projection data, and the suitability does not change greatly.

If we look at other commodities, we have plain fruit there. At the top left you will see current suitability. The very top left is green, so apples can be produced fairly consistently across that green wedge area. Fast forward to 2050 and suitability drops substantially — something like 30 or 40 per cent. We can hold different parameters constant to interrogate why that is happening. In that case it is water availability, so if you maintain water, you can maintain suitability and yield.

In the middle we have pasture. That change is largely temperature driven, so you would be looking at changing varieties to maintain yield. In the last one we did a blue sky crop, kiwifruit, just to see if there was any potential to develop a new industry in that area. In that case it was a combination of factors that impacted on suitability over time.

As you do a few of these models you can start to overlay them and categorise different areas for different uses. That information is being used by Casey and Cardinia to build a case for the location of the recycled water pipeline.

We have finished preliminary modelling for 12 commodities across Gippsland. This is apple suitability presently. If you take note of Omeo in the middle top section, you will see that certain areas are unsuitable now but will become suitable in the future. It is that sort of thing that we are looking for — new areas for —

The CHAIR — New opportunity.

Dr FAGGIAN — Yes, for new opportunities. There is a major production area for brassicas — that is broccoli and cauliflower — around the Lindenow Valley now. They are going to dry up substantially. All the models indicate that there is going to be substantial drying through the Macalister irrigation district, but again if we can maintain water to those areas, they can maintain their yield. That is also a dairy area, so those areas are going to be looking at making decisions around trying to adapt or transform to something different.

This is pasture. If we flick forward, again we see substantial changes in some of those irrigation districts where they are very heavy on irrigated dairy. Grapes or viticulture is another area that will improve over time. That is purely temperature driven.

We have a steering committee in place that is composed of DPI, DSE, Agribusiness Gippsland and council CEOs. They have asked us to look at three case study sites, one in far-east Gippsland, where suitability for a range of crops is going to increase over time. That could potentially be important for those areas because Orbost and surrounds are struggling due to the price of woodchips just falling through the floor, but they have excellent soils for vegetable production there, and the climate is going to be good for a long time. The second case study site will be around the Macalister irrigation district, where we will look at issues of whether we should upgrade irrigation and at what point that becomes less feasible or it becomes more feasible to shift to something else, like horticulture, where you can use less water but still maintain the same profits. The other one to look at is somewhere around Baw Baw and South Gippsland, which are really high productivity areas presently. The major issue there will be urban expansion and that sort of thing and making decisions around the price of land.

With all of that information we have the ability to start looking at optimisation of spatial allocation of these productivity units. We have a method of doing that where, down to a 5 square kilometre grid, which is what this data resolution is, we can pick as an end point yield or environmental outcomes or profit FTEs — anything we like — and say, 'We will optimise for employment. What commodity should be grown?' We can do that across

the region. That allows us to start modelling different scenarios, so we can look at if dairy production has doubled in this area, what will happen to employment under scenario A; scenario B; scenario B plus upgrades to infrastructure or upgrades to roads — that sort of thing.

The other thing we are doing is working with a group called Planimate, who do all of the logistical simulation modelling for BHP, Queensland Rail — some of those big companies. They are building a simulation of a productive unit — so, a dairy farm, first up. The only difference between this model — which is super detailed — and an actual farm, is milk, in the end. This thing is a dairy farm, so we can multiply it up and say, ‘If pasture yield increases’ — or you multiply the number of dairy farms in an area — ‘this will be the impact on transport, on dairy processing facilities, et cetera.’ We hope to extend this to doing some detailed studies of the impact of opening up new areas like Orbost and actually looking at what impact there would be on secondary transport routes — things like that.

Just one of the incidental outputs, I suppose, more for the community’s sake than anything: we have put all of the data as layers onto Google Maps, so people can take this program, zoom in on their farm or their street and look at what is going to happen climate-wise out to 2027, or they can look at all the historical information, if they so choose, as well.

Being a research project, I guess this is a little bit different to some of the others you have heard today, but, in terms of what works well and what is not working so well, what has worked well for us is interaction with local government in this area in particular — just super professional. There are clear routes for decision making, so if we come with a proposal, we know who to go to, we know how that decision can be made and we can be assured of getting a result very soon. There is a regional desire for information and tools that facilitate decision making. There is also clear cooperation and collaboration between councils, and we have worked in many other parts of the State doing this sort of thing, and that is not always the case.

In terms of what is not working well, there has been one major stumbling block, and that was understanding what the role of government was in this sort of project. As I said, I was with DPI originally. There was a big difference between what the regional components of DPI thought about this project and what the Melbourne components thought — regionally, totally supportive; in Melbourne, could not see a role of government.

Ultimately we had to leave DPI and take this project across to the University of Melbourne just to ensure that it went ahead. That was a big stumbling block. Other less important things include the diversity of stakeholders, because we start modelling commodities in the paddock, but really this is an economic development tool for councils in the end. We have a very broad range of stakeholders and all of the modelling is dependent on getting input from farmers, so we have to travel all over the place and do a lot of talking, and it takes time. That is a little bit of a problem in terms of resourcing a project.

Another issue I notice is coordination of similarly themed projects in the region. We talk to a lot of people, but every month we discover new projects that are doing complementary things which we just did not know about. There does not seem to be any central coordination or information point to find out these things.

Again, access to information is another issue. Having been a DPI employee I know there are dozens of people beavering away on climate change and related projects, but it is not always easy for farmers and members of the general public to access that information.

Mr FOLEY — Thank you very much for your presentation. This inquiry is about the different roles of different levels of government and how they can facilitate local economic development strategies. You indicated towards the end of your presentation that there were some tensions with your project sitting within what was then DPI, which is now something else — whatever it is called.

Dr FAGGIAN — DEPI.

Mr FOLEY — The merged department. We are looking at how we can put forward recommendations about positioning for future economic development strategies and parts. Can you explain a bit more about that? We have already heard from people who gave evidence before you, people whom I suspect are on your steering committee, about the important role that agribusiness currently plays and is likely to continue to play in the Gippsland area as it integrates more with a whole range of other economic uses in the landscape. They forecast the importance of understanding and leveraging off the opportunities that climate change might play. Can you

explore from your project's point of view what you see as being the policy and practical difficulties in the role of government and how that has ended up with the project having to be auspiced at the University of Melbourne rather than DPI?

Dr FAGGIAN — Yes. I will say up-front that I was with DPI for 15 years, and if I include my PhD time — which I also did at DPI — it is 18 years, so I have some idea about how the place works.

Mr FOLEY — Where were you based — at Ellinbank?

Dr FAGGIAN — No, I was based at Knoxfield and Parkville. I would say that my interaction with local government — not just here but in the regions of Goulburn Broken, Yarra Valley and south-western Victoria and in my time at DPI — showed me that it is local government that has much better relationships with agriculture and agricultural producers than DPI, purely because DPI has the regulatory arm. I was in the research arm of DPI, and we would go on to a farm to do a trial or something similar and we would get lambasted because the day before a regulatory person from DPI had been there with his stick and we were coming onto the farm to say, 'Can we do a trial on your land?' There was always that tension, and that attached some stick to the DPI, for want of a better term. That does not exist so much with local government.

Also on the policy development side, again I think you would need to take this in the context that I am coming from a research component so my understanding of policy development is perhaps not what it should be, but regional issues were not front and centre. A policy on water has to be applicable state-wide perhaps, and the same with climate. But climate change impacts are very regionally different, so it is difficult to come up with an all-encompassing policy that is relevant to a region.

I do not know how much I am answering your question there. I am trying to tiptoe around a little bit, but my impression was that especially Gippsland probably did not get as good a hearing as it could have on some of these issues. Places like Goulburn Broken, for example, would walk in and have their cases heard; Gippsland not so much.

Mr FOLEY — Is that because the Gippsland water community did not see agriculture as enough of a driver of other investment, or just more generally it was not as organised in terms of having its reputation precede it at all levels of government, particularly with that DPI/agriculture stuff?

Dr FAGGIAN — No. I would say it has nothing to do with the region and its approach. Again, my experience is within DPI. It was a DPI view that places like Goulburn Broken were more important, for whatever reason. If we are thinking strategically, looking at the data out to 2050–70, places like Goulburn Broken are going to struggle, and it is places like Gippsland and the south-west that could well become the food bowls of Victoria and the nation, so Gippsland is very, very important.

Mr CARROLL — Thanks very much. I could probably ask you a lot of questions after that presentation. That was very high level and very interesting data that you presented. This committee is inquiring into the role of both local government and state government in local economic development. Given that you have come from DPI and you seem to be able to be aligning well with local governments such as the Latrobe City Council, how does the State Government get back to being involved with a project like that? We have heard today that the State Government intends to make the region stronger and that it will do some regional cities work and things like that. What is your advice to this committee, which will have to prepare a report, on how we can use the information and knowledge you have from your research background and with the University of Melbourne to get the State Government again involved in and more supportive of some of the mapping and data work you have done?

Dr FAGGIAN — I think the merging of DSE and DPI is probably a good step. The rumours that we are hearing already are that the regional focus of this new organisation will be very strong, much stronger than it was before. DPI appointed a regional director a couple of years ago, so that shift has been occurring for some time. I am not sure how much of the regional director's input is sought in decision making. I suspect the landscape is going to change dramatically now. In fact we have the regional director for DPI on our steering committee. I spoke with him last week and he said, 'Well, in the new environment, go back and speak with your old research arm because in all likelihood they will want to do this sort of research that is regionally focused', whereas before it was a lower priority. I think the merge on its own will change the landscape. Outside of that, I

do not know. I think we will have to wait and see. The regional director is a fantastic resource, as are some of the regional officers. They need to be heard more.

The CHAIR — When was it that you changed over from DPI to the University of Melbourne?

Dr FAGGIAN — I left DPI in November; I joined the university on 21 January.

The CHAIR — What do you see as the very next step here for your project?

Dr FAGGIAN — The immediate next step for us is to make sure that the outputs of these models are watertight, so we are validating them across the region. Once we are confident in the outputs we will use them in the next stage of the modelling, which is to model infrastructure. We will put a range of scenarios to the region, so in the event that we double production or open up new production areas these are the infrastructure requirements to support that activity. That is the immediate next step.

The CHAIR — Thank you very much for being here. The Committee really appreciates your time and the evidence you have provided. As Ben said, it is of a very high level and it is very interesting for us to be able to see the results of your work. We are very grateful for your time and your effort today. You will receive a copy of the transcript of today's proceedings within the next two weeks. Feel free to point out any grammatical errors that you believe exist, but no changes are allowed to the document itself.

Witness withdrew.

The CHAIR — I take the opportunity now to thank the council for having us here and some of the people today who put us through the tortuous tasks this morning — watching people having to bag their beard before we went through a variety of businesses, and having to stand in disinfectant before we went to look at the cheeses and the yoghurts. But it was also very interesting to look at some of the local businesses and to hear about the progress they are making and the wonderful relationships they have with council. The Committee is very thankful to the council and the officers, the councillors and the mayor for making their time available and for being able to show us through those businesses.

I also thank all of the people who gave evidence today. It has been an outstanding day of evidence, and certainly people have been very enthusiastic about what they have had to say. That will help our report considerably and contribute very strongly to our recommendations. I thank the executive staff, who have done another good job. I particularly thank the Hansard reporters, who do a wonderful job every time, of course; we are very grateful to them for their services. I also thank members of the Committee.

Committee adjourned.