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| Speak Up - KōrerotiaVisioning a carbon-neutral New Zealand15 May 2019 |
| Female | Coming up next conversations on human rights with “Speak Up” – “Kōrerotia”, here on Plains FM. |
| Sally | E ngā mana, E ngā reo, E ngā hau e whāTēnā koutou katoaNau mai ki tēnei hōtaka: “Speak Up” – “Kōrerotia”. Tune in as our guests “Speak Up”, sharing their unique and powerful experiences and opinions and may you also be inspired to “Speak Up” when the moment is right.Welcome to “Speak Up” – “Kōrerotia”. I’m your host Sally Carlton. Today we’re talking about “Visioning a carbon-neutral New Zealand.” The government recently, in May 2019, proposed the Climate Change Response (Zero Carbon) Bill as a result of submissions by over 15,000 New Zealanders and organisations which probably is quite a lot of people to put in a submission I would think, which shows what importance people are placing on this kind of issue. Many high greenhouse gas emitting countries have committed to significantly reducing their emissions by the middle of this century; however, few have committed to becoming carbon neutral so this Bill is something quite particular, quite important in a global sense as well. Here to discuss the issue I’ve got Pubudu Senanayake from Generation Zero. Pubudu, it’s great to have you back on the show, you were a guest on our climate change show a couple of years ago now, nice to have you back.  |
| Pubudu | Thanks Sally, it’s really good to be here to talk about this Bill and you’ll get into it soon I guess.  |
| Sally | Yes and I’m looking forward to hearing your perspective of someone of Generation Zero, which was so actively involved in drafting this Bill. Another of our guests is Dan Price. Dan, you were also on one of our shows, you were on our Antarctica show which was recorded live so nice to have you here in this studio and looking forward to hearing about your take on it given your work particularly in Antarctica. Our final guest is Anita Wreford from Lincoln University. Anita, you’ve also been quite involved in carbon… This whole issue as well.  |
| Anita | Yes that’s right, I’m at Lincoln University. I mostly work around adaptation to climate change but I have a lot of interests and I guess expertise particularly in the primary sector. I’m on a couple of IPCC reports as well so hopefully I can share some insights from that.  |
| Sally | The IPCC? |
| Anita | Yes so the Intergovernmental Panel on Climate Change, sorry.  |
| Sally | Great, thank you. Dan, perhaps we’ll start with you. What’s some of your background in this climate change work?  |
| Dan | Yes, so my background is actually in oceanography which is sort of the oceans are a core part of the climate system and then after studying that I kind of moved into glaciology which is another huge part of the climate system. I spent a lot of time in the Antarctic which is where a lot of most of the earth’s ice is and there’s a lot of concern about how the Antarctic and the Arctic are going to respond to a warming planet because there’s so much ice there that once it starts to melt it’s going to have a huge effect on global sea level rise, so that’s a big concern of the scientific community is how, as we warm the planet, how much ice is going to melt and how it’s going to affect global sea levels.  |
| Sally | And you’ve just got back from your most recent trip down to Antarctica? |
| Dan | Yes, so currently we’re working on a project called the Ross Ice Shelf Project which funnily enough is about the Ross Ice Shelf and I’m involved in the traverse aspect of that. So logistics in Antarctica are very difficult so we have to move all the scientific gear around and make sure it’s safe for scientists to operate. So I’m kind of in the middle between the logistics and the science. So we’re trying to work out how fast the Ross Ice Shelf is going to respond to a warming ocean essentially, and the Ross Ice Shelf is an area of ice about the size of Spain so it’s a colossal area and it’s an ice shelf which is a component of the Antarctic continent which has come off the continent and is now floating in the ocean and these ice shelves are important because they essentially buttress or slow down the ice which is on land behind it which is coming into the ocean and raising sea levels. So understanding how fast these ice shelves are going to respond to warming essentially means getting better data and projects for governments to use as to how fast sea levels are going to rise globally.  |
| Sally | Goodness wow. OK Pubudu, perhaps we’ll talk about you and Generation Zero and your involvement with them and their involvement with the Bill.  |
| Pubudu | Sure. Essentially I guess my background is in physics-ish, it’s quantum physics and not really related to climate change but I’ve been involved with Generation Zero probably since late 2013. Generation Zero is a youth-led organisation which is pushing for climate change solutions in New Zealand and trying to get us to carbon neutrality and maybe greenhouse gas neutrality by the middle of the century. So we had… In this particular instance we had gotten tired of waiting for governments to actually do anything about climate change so we decided to draft the zero-carbon policy framework ourselves and present it to Parliament and try to get cross-party support on that which has been, I suppose, somewhat successful. Obviously the Bill introduced isn’t the exact same thing that we pushed for but there’s a lot of elements in there from what we had. So there’s been three years of hard work with a team across the country and we’re hoping to carry on, on this work and to make sure that this is as successful as it can be and there’s been a major involvement in the last two to three years in the kind of science and policy side of that.  |
| Sally | You mentioned ‘carbon neutral’ and ‘emissions neutral’ - carbon neutral we’re talking just carbon dioxide?  |
| Pubudu | When we say ‘carbon neutral’ we usually mean long-lived gases so that includes carbon dioxide and nitrous oxide in New Zealand and there are things like CFCs and HFCs which aren’t such a big part of the New Zealand make up but it’s globally enough to care.  |
| Sally | Great OK, well perhaps we’ll talk about the Bill then and what are the main elements of it?  |
| Pubudu | The Bill as introduced has the permission to establish what’s called an Independent Climate Commission. So that would be an independent body that would advise the government on the emissions pathways, emission reduction pathways - things like carbon budgets, which we can get into a bit later. Also to assess the risk levels of already locked-in global warming and then help government do up a risk assessment set of tools and methodology. It’s also introduced certain targets that New Zealand hopes to meet by 2050 so like I said that’s zero long-lived gases and a reduction in short-lived gases which is mostly methane in New Zealand - and again we can get into the details of that a bit later. It also compels government to have what are called carbon budgets which are basically an amount of greenhouses gases you can emit over a period of time and have those set up in five-year chunks well into the future - so I think something like 12-15 years into the future depending on exactly how the Bill falls. Those are the three main things that it establishes. It’s a bit light on the details about how it, for example, wants to fund the Climate Change Commission. It’s also been introduced as part of an already existing piece of legislation called the Climate Change Response Act which is what the Emissions Trading Scheme (ETS) is set out under. We were pushing for its own Bill because we think something like this needs to be an overall policy framework that sits on top of things and guides the rest of the policies down below and the ETS is just one of the tools, so again there are problems with it that we can discuss a bit later but that’s basically the three things that the Act attempts to do… Or the Bill attempts to do rather.  |
| Sally | Maybe an Act at some point.  |
| Pubudu | Hopefully an Act!  |
| Sally | So you said that there are various elements to it, it’s obviously not all that Gen Zero had hoped it was going to be. How have you, Anita, and you, Dan, responded to it?  |
| Anita | Well I think as you said, it hasn’t been a great kept secret so it hasn’t been a big surprise. I think it’s probably the minimum we need given what we know with recent reports coming, we need to act really quickly. So I think it’s maybe, as I say, the minimum but on the other hand given where we’ve come from in the last few years, I think it’s fantastic that we’ve actually got something in place. I think where we’re going to see where we need to look next is how we achieve these targets in the plans that are put in place so that’s where it’s going to be really critical.  |
| Dan | Yes I come from a similar position, I guess. I’ve got two things in my hands here: one is the Zero Carbon Bill and one is the IPCC 1.5 Degrees Report. So if I stand on the side of the science I’m a little more pessimistic; if I stand on the side of the legislation from a government perspective, it’s kind of similar to the Paris agreement, I was pretty happy that the legislation had managed to get to this stage. But it’s setting out a framework essentially which is a great start; if it was happening 20 years ago it would have been better. But actually putting in place the action that needs to happen to meet these targets is a colossal effort globally too and the speed at which we do it and the difference between this 1.5 degree number and 2 degrees is actually colossal so the numbers in this report… I read it again last week, in the IPCC report are kind of terrifying. The difference between 1.5 degrees and 2 degrees, you’re talking a 10cm difference in sea level rise, that doesn’t sound much but that would put an initial 10 million people displaced globally, or the climatic consequences we hear about; droughts, increased rainfall are all greater. The loss of climatically determined areas for 100,000 species doubles in that 0.5 degrees difference. Arctic sea ice, if we get 1.5 degrees of warming, we’ll have a sea ice-free Arctic in the summer once every century. If it’s for 2 degrees, which is that 0.5 degrees difference, it’s every decade. Coral is not in good shape in either and people’s ability to get out of poverty also is massively impacted by these tiny changes.So I agree. It’s good from a policy perspective - we’re on the way - but in terms of what the climate scientists are laying on the table of what we need to do, we really need to ramp up ambition, I think.  |
| Sally | Scary. My final question related specifically to the Bill is you wanted it to have cross-party support.  |
| Pubudu | Yes we did.  |
| Sally | It hasn’t quite achieved that.  |
| Pubudu | Well again, the intel is back and forth. So the Opposition came out and said that they support a Climate Change Commission, for example, they support aspects of the Bill, for example the fact they need to get net zero long-lived gases by 2050 isn’t even a controversy anymore and two or three years ago it was a big no, no. So those kind of things are fairly positive. They haven’t come out and said they are fully in support of this Bill and they’re going to vote for it in the first and second readings - and remember that it will have to go through Select Committee and all those things anyway, so there will be a chance to amend and change the Bill quite a bit and I suspect that a few of those things will happen throughout that process and hopefully by the third reading, by the last reading, we can get the full parliament, sans one guy probably, on board. We keep on stressing that it is extremely important that it has cross-party support, whether it’s explicit through vote or even agreement, because without that, the communities in New Zealand, the businesses in New Zealand, the industries in New Zealand, don’t have long term certainty because if they are thinking the budgets are going to change every three, six, nine years then that’s not really that useful. You need a bit more stability to plan your investments and strategic assets. So we are hoping we get that. We know that there’s lots of negotiation, we know that it’s been done in good faith, so we are hopeful and we just keep pushing for it and can explain to all of Parliament why it’s important that this is fully cross-party platform. |
| Sally | I think we’ll pick up on your idea of business in the next segment but we’re going to have our first song now which is your choice, Pubudu, Dave Dobbyn’s ‘Welcome Home’ and I believe there was a reason you chose this one.  |
| Pubudu | Yeah, so we’re talking about these long-term problems here in terms of climate change but obviously a couple of months ago we had a pretty horrific situation here in Christchurch and as a migrant kid growing up in New Zealand it was pretty startling and you kind of feel targeted so this song is about… Dave Dobbyn wrote this when he saw the anti-racist marches back in the ‘90s or ‘80s in Christchurch and he felt inspired to tell everyone that this is their home and it’s quite a good sentiment right now.  |
| Sally | Works well.  |
|  | **MUSIC BY DAVE DOBBYN – WELCOME HOME** |
| Sally  | Welcome back to “Speak Up” – “Kōrerotia”, nau mai, haere mai. We’re talking about a carbon-neutral New Zealand and in this segment we’d like to think about how is it even possible to get there and I think we might start with the large-scale changes that are required - business, government, those sorts of things - farming, I’m sure, is a massive one when it comes to New Zealand as well. So, just to throw the question out there, then, what is required if we’re going to try and be carbon neutral by 2050?  |
| Anita | Well if I can jump in, I think we’re going to need large-scale changes and I think people like to think that we can just tweak around the edges and continue business as usual but to achieve the kinds of emissions reductions and to adapt to the impacts that we’re going to see, we are actually going to need to change things quite significantly. But I think the key is if we start planning now and set policies and support the industries and areas that are going to be affected the most through this journey then it will be less painful than if we delay our action until 2049. We’re already getting a lot of climate impacts, then that’s going to be a much harder transition than if we manage it carefully from now and invest in innovation and supporting these sectors that are more at risk then we’ve got a better chance at making it a more of a just transition.  |
| Dan | Absolutely. Like, I think what Greta Thunberg said when she was speaking to the UK Parliament is perfectly on point: that we need to have cathedral thinking; that we need to build the foundation before we know how to construct the ceiling - which is perfectly appropriate. I don’t think we necessarily know exactly how we’re going to act over the next 50 years but we can be adaptable in that and we just need to start taking action as quickly as possible.  |
| Pubudu | Just to extend that metaphor: I think the Zero Carbon Bill is the first stone of the foundation, it’s very much a first step. And I agree with what’s been said and I just want to pick up on that transition point where for this to be a successful transition we have to make sure that the emission-intensive industries that are affected, more important are the communities that are around those industries, are well supported to charge their own destiny into 2050 and beyond. You can’t impose and say, “No you have to go and train and do this specific job” but what you can say is, “Look, the work that you are doing right now, the work that this industry is doing right now, is going to put yourselves and the whole of New Zealand and rest of world at risk if you extend it to the global scale, so how do you want to transition out of this and what support do you need?” and provide that by engaging communities directly. And I think that’s been a failure in the past, of not just this government, all governments. I think that’s important if you want to have this sticking to future. One of the quick things I want to bring up about the particular Act again - and something I’m displeased with - is unfortunately in the current formulation it allows unkept forestry credits, think you can plant your way out of the problem. So if you want actual reductions in emission, you can’t plant your way out of the problem especially with forests because forests are temporary despite what we might think. So we’re trying to offset long-lived gases which are added essentially permanently on a human scale by digging up ancient fossil fuels and thinking we can plant trees to offset that and from a scientific point of view that’s complete nonsense, and also for what we need to do that’s also complete nonsense.  |
| Anita | I think… Just a couple of points on that. Methane, you’re not going to be able to offset, are you, so that’s one thing and also with the trees, it depends what they’re used for. Once you cut it down and if it’s used in building or timber and it remains as timber then that carbon isn’t released so it’s not entirely… |
| Dan | I take it from the point of fossil fuels are in the ground out of the biosphere and atmosphere which is essentially what affects us as humans and is affecting the climate system and if we take that out of the ground and put it into the biosphere which is what you’re doing with planting trees, I kind of agree with Pubudu that it’s not offsetting the problem over the scales we’re interested in either because, one, it takes so long to offset; say we release a tonne a carbon and it takes 30 years to get that out of the atmosphere with a tree. We’re only talking 30-40 years here to achieve this so I’m super concerned about that in the Bill as well with these credits and basically making excuses not to take action directly on emissions because that is really what we need to do. But there is a place for offsetting in some respects I totally agree but I find it’s a very easy excuse and avenue for failure I think for all these climate policies, is just to offset.  |
| Anita | I totally agree but I think the thing we need to remember is we’re just going to have to do everything we can and so it’s taking really strong action to directly reduce our emissions but we are going to need some trees as well because it’s just such a massive problem.  |
| Pubudu | I think my big concern is that it’s unkept. Of course we need offsets in trees and planting trees is a good idea depending on how you do it, but the problem is that it’s unkept and it’s basically saying well we can try and plant… And government’s one big proposal is to plant a billion trees… And also you’re right, if you have things like furniture or buildings it’s great but the average lifespan of the carbon in trees is about 78 years because things like forest fires and storms and all sorts of things do end up releasing it back into the atmosphere and not all of it of course. So I think we have to compute all of that stuff and I think the Parliamentary Commissioner for the Environment released a report prior to the introduction of the Bill which kind of did this assessment and his point was that ultimately trees are fairly temporary unless we are very specific about how we use them after we cut them down and in New Zealand we mostly export them anyway so we have to be really careful about how we do that and the fact that it’s unkept is the big problem for me.  |
| Sally | So what you’re saying, basically, is the Bill allows for organisations to purchase tree planting in replacement for the carbon they are producing?  |
| Pubudu | Or I suppose at a country scale it allows New Zealand to plant trees rather than reducing actual emissions.  |
| Sally | OK. I saw somewhere that the trees currently offset about 30% of New Zealand’s carbon emissions, so it’s not all that much.  |
| Pubudu | That’s probably about right, and we had a situation in the mid-‘90s where the trees that we had grown suddenly got felled and then we lost some so you get the big jumps in the emission profile if you have that as well so it’s a bit of a problem. The main problem is that it is unkept.  |
| Dan | But in terms of the challenges - this is not my area of expertise, though, but you guys could definitely really speak more to it - the two main challenges I see are electrifying the transport grid and coming up with agritech solutions to the methane problem, right? In order to achieve these… |
| Pubudu | Yeah so I think yes transport is one of the biggest energy sectors. Our actual electricity generation is not too bad, there are things we can do there of course but I think we’re about 80% to 85% depending on the time of day. Transport is the big one where most of our energy actually goes into that and things like industrial and processed heat is another one where we use things like coal and gas for that as well. Farming is an interesting one, so obviously there’s some technologies that might help in terms of methane reductions but also I think we have to… Something very important to keep in mind is that the transition required, especially in the farming sector, isn’t any more rapid than what we’ve seen the farming sector undergo in the last two decades to get to where we are now. So New Zealand farmers - who, I have to say, are excellent at adapting quickly and doing big changes - they’ve done this at a faster rate than required before. So for us in New Zealand it’s actually not that… It’s a big challenge in terms of how we’ve set the economy up but it’s not a big challenge in terms of where we have been in the past and we know how to do this so I think that’s the hopeful thing for me.  |
| Anita | And I think… Like, in the agricultural sector, there’s a lot of interest among individual farmers and within the sectoral bodies at looking at alternative systems anyway because they’ve got to meet new water quality requirements, they know that there’s problems with erosion and biodiversity loss and things like that so I think we have seen probably the peak dairy as it’s referred to. I think it’s lucky probably for the agricultural sector, they’re choosing 2017 as a baseline because I think dairy numbers are stabilising anyway so it’s not as if we’d have to reduce from 1990 levels or 2015 or 2010, I don’t know. So there is as lot of interest anyway in different types of systems. I did see Federated Farmers has come out quite vocally feeling it’s cruel… that they’ve been targeted cruelly in the methane target but there was an interesting quote from Andrew Hogarth who said - and I can’t remember the details - but he was like, if you can show me how we’re going to support the economy and replace these jobs and meet these environmental targets blah blah blah and it was like an accusation but actually I thought this is the perfect question, this is exactly what we need to be answering. We need to be working with the agricultural sector and those communities to look to how they can improve the environmental outputs but also the social and economic ones as well so it’s an opportunity, I suppose.  |
| Pubudu | I think it’s an opportunity for New Zealand to remain at the forefront of global agricultural technology, right, so New Zealand has the best opportunity for the globe and export not just our best produce but actually knowledge as well.  |
| Anita | Yes because we have such high emissions from the agricultural sector and we are such efficient producers that other countries are really looking to see how we handle agriculture. I mentioned earlier that I’m in an IPCC special report on climate change and land which will be coming out later this year and one of the focuses is how we reduce emissions. And really, other countries have always said, “Well, what is New Zealand doing?” So it’s an opportunity to lead the way.  |
| Pubudu  | I think that’s a really important point that Anita raises because we say, OK, our global emission profile is small compared to some big country but as she says, the world is looking at us to lead on agriculture so we actually have an opportunity to essentially set the pathway for how agriculture gets dealt with globally because everyone is going New Zealand is the best, how do they do it and we need to do it so there’s no ifs or buts there. If we get it right, not only can we sustain our climate through the tech we export but also through the new produce we grow - whatever that might be.  |
| Dan | I think there needs to be deep appreciation, as well, of how we do feed ourselves, the idea that tech etc. is going to fix this problem I don’t think stands up to it. Because this stat nearly knocked me off my feet when I read it the other day: Without meat and dairy, global farmland use could be reduced by more than 75 per cent - which is equal to an area the size of the US, China, EU and Australia combined - and still feed the world. So the way we’re feeding the planet at the moment is unsustainable and yes, tech has to be a part of it but we have to have a really deep think about how we change the way we feed the world.  |
| Anita | That’s true and there are so many health benefits, as well, from shifting away from animal-based diets - although those kind of statistics often don’t take into account the fact that you can’t grow wheat on hillsides and things like that, so we’ve got to balance that out - but there’s always going to be a place for meat but maybe not at the scale we have it at the moment.  |
| Pubudu | Again, I’m not an expert in farming, but we were looking at other types of models of how to grow and it’s about mixed farming rather than monoculture where they be crop or meat or whatever and that’s what we do now here and abroad right, we have very single-focused farming practices and that’s where we are falling apart. There are benefits, for example, for having stock on your land because you can use them to essentially do the necessary prep work on the ground which then reduces the fossil emissions and offset that with the methane they might be emitting in the right stock numbers and things like that so there are lots of core benefits to doing it this way. Like we said earlier, hopefully this can motivate other core benefits like water quality and more sustainable long-term farming practices.Because ultimately New Zealand being a primary producer, climate change is going to affect that the most. This is the thing we are missing. When climate change strikes, if we don’t do anything about it, our climate is stuffed anyway because our ability to produce will be drastically affected - and we saw that in 2007 with a very small drought and we lost about $3 billion of our economy, stock numbers plummeted, it’s not a good thing. So in a way, New Zealand farming needs to lead this conversation and get the rest of the world to listen because otherwise we’re going to be the most affected in New Zealand.  |
| Anita | And also with the diverse systems which I absolutely agree with, they’re also more resilient to these impacts of change.  |
| Sally | We might have our next break and Dan you’ve chosen The Eastern’s ‘Hope and Wire’ - a nice local one for us.  |
| Dan | I have, absolutely local, yeah. They’re a great band that I saw back in the Wunderbar years ago in Lyttelton and have always enjoyed their music.  |
|  | **MUSIC BY THE EASTERN – HOPE AND WIRE** |
| Sally  | E whakarongo ana koe ki te hōtaka “Speak Up” – “Kōrerotia”, you’re listening to “Speak Up” – “Kōrerotia” and today we’re discussing a carbon-neutral New Zealand with Dan Price, Pubudu Senanayake and Anita Wreford. We’ve just been talking about some of the large-scale changes that we’ll, hopefully, make in order to become carbon neutral. In this next segment we’re going to think about how those large-scale changes might be replicated on a smaller scale, what can we do at the individual, the personal, level. We’ve already mentioned diet and meat and dairy and the farming practices that go with that. What are some of the other changes that we could make that might have a positive impact on the climate?  |
| Anita | Well I’ve been thinking about this a little bit in anticipation of this chat and I think we know about we need to reduce our fossil fuel use and things and changing our diet but one thing I think that we maybe don’t always think about is that as consumers, or as the public, politicians are looking to be re-elected so they need to hear what we want and so I think it’s really important to be vocal and contacting your local MP and your council and telling them how important you think climate change is. In a similar way, we’re consumers of products and so I think the choices that we make and what we buy will drive the private sector hopefully to change the types of products that they produce. So I think in addition to our own individual actions, how we convey that to these other groups in society are important.  |
| Pubudu | Anita has basically stolen my answer, that’s perfect! What we always said is yes, the biggest asset you have is political capital in New Zealand. You can literally go and talk to your minister or MP or whatever and that translates to a fair amount of capital globally because New Zealand is good at negotiating at the international stage. So that means that your message gets amplified through legislation and policy and through national treaties and things like that more so than in any other place for the size of New Zealand. So that means exercising your political capital there to say, look climate change is a problem, we need to do something about it and we need these things, it’s important. In terms of personal action, I think that’s the most important thing. And then there are other things you can do, like Anita said: Send the right signals to the producers of this stuff. If you’re suddenly spending less money on fossil-intensive ways of transporting yourself, if more people are starting to go on the bus and bike, then city councils will go, OK actually we need to make sure that infrastructure is better because more people are using this and that’s a clear signal that that’s the way people want to move. Of course the flip side is that these organisations have to support people who want to do this as well and I think Christchurch is starting to do that. For example it’s getting easier and easier to bike around Christchurch. The public transport network isn’t that great but it’ll get there hopefully. So those kinds of signals, I think, are really important and then there are things like… Everyone says fly a bit less, eat a bit less meat and all that kind of stuff and that is important but I think they recognise that we are embedded in a system that these choices are kind of… Sometimes you can take one less holiday a year or whatever but at the same time you have to participate in the system to survive so you have to balance that and say well actually we are asking for change in the system as well as doing a person action to send the right signals.  |
| Anita | If I can say something else, I think it’s really important that that whole individual versus the system, what you can do… I think it’s so important now as we’re hopefully going to get this legislation in place that it’s embedded, integrated across all areas of policy. So I live in Lincoln, just out of Christchurch, and it’s expanding massively with new sections being built all on quite… big houses on big sections, one storey and so it means that everyone is so much spread out that they have to drive… Well you know, you have to make a real effort if you’re going to walk to the shop or anywhere in the community. I think we’ve got to think at every level about how we plan now so people can live low-carbon lives and make those choices easily without it becoming this sort of extreme ecowarrior thing to bike to work or whatever.  |
| Dan | And the proof of exactly what everyone has just said is here, that this Act is now… This Bill is now being negotiated and it’s from hearing people’s voices, the massive effort that Generation Zero put in to get it there shows that people’s voices matter and it can have a massive impact.  |
| Pubudu | Because I remember we started this and there were still denialists around at a very high level and it’s only been three years since suddenly that all shifted. So like Dan said, I think people have a much bigger voice than they realise.  |
| Sally | What’s happened in those three years that’s led to this shift, do you think?  |
| Pubudu | I think it was coming for a long time, I think slowly people are starting to understand the problem, they were starting to understand what impacts… Just to pick on Dan, they did some great work… What is it cycle…? What do you call it?  |
| Dan | Pole to Paris.  |
| Pubudu | Pole to Paris. So that’s one example of people trying to raise awareness and documentary *30 million* I think, where you visually saw what would happen to people if we didn’t take care of this problem. So that’s a very specific example but people started doing that kind of on-the-ground stuff rather than sitting on a podium and going, “Well climate change is coming and we need to do something about it.” People actually went to the communities that are affected and started telling their story and think that really affected people. I have another friend of mine - I think he’s been here before - Jeff Willis who has done some similar work in the Pacific and these are examples of people who are going beyond their day-to-day lives to expose the impacts that are happening. That and I think we went to communities and started speaking about this and said, “Hey look, climate change is coming and what do we need to do?” I think people are more onto it than most people realise when you actually start talking to them. My biggest surprise was talking to the agricultural community and like I was down in Southland talking about this and they were like, “Yeah we’ve noticed a change in the land and moisture patterns and rain patterns and stuff, we’ve noticed and it’s a problem and we’re worried.” So it’s about getting those voices out so that people can actually realise that there are more people who are thinking about the solutions than not and so amplifying that actually helps change the overall conversation, I think.  |
| Dan | I think some political situations globally, as well, are perhaps firing up the other side just to speak out and get vocal because if we don’t we’re in trouble. So I think maybe the silver lining of that situation is that people are waking up and realising they have to get out there and make their voices heard.  |
| Sally | I guess all the things you have mentioned, Pole to Paris and *30 million*… Do a plug for them!  |
| Dan | So my background is in academics and I finally - well not finally, I always thought - that we have all this science, we know exactly what’s going on, IPCC report, this is this governmental panel climate change reports, report after report getting worse and worse, we know exactly what the problem is, we have a lot of ideas for solutions, we need to implement them and do something - as we’ve just been talking about it’s mostly a political problem, so need to do public outreach etc. And doing things that Pubudu has just been speaking about. So I cycled from New Zealand to Paris ahead of the COP 21 climate conference and then a colleague of mine, Erlend Moster Knudsen, is a Norwegian glaciologist ran from Tromso in the Arctic to Paris, like this Pole to Paris journey and the idea was to exactly, as Pubudu said, get stories of actual people being impacted so the Sámi people in northern Norway because the temperatures are now far more variable, there’s lensing in the snow packs so the reindeer can’t get to the grass below what would have used to be snow. And then I spent a lot of time in Bangladesh where we made a documentary called *30 Million*, so 30 million people are expected to be displaced in Bangladesh by the end of the century with a metre of sea level rise which is kind of the… Depending on what projections you look at, rather realistic by the end of the century. So those sort of things get me pretty fired up, that this amount of people moving, there’s a huge geopolitical problem and the impacts could be absolutely colossal and that’s the thing that worries me about climate change is that it’s this creeping up in the background, kind of tipping areas that are already on the brink politically and society that’s already under stress over. The crisis in Syria is a good example. I wouldn’t attribute the drought there to climate change but droughts in the Middle East are going to become longer and more severe so it’s fair to say that these environmental stresses are going to play havoc on political systems that are already unstable and the knock-on effect of those people moving into Europe was devastating; I’d argue that the rise of the right again in Europe is directly attributed to that. So even what would have been described as a strong political system, the EU in Europe, is showing weakness because of the migration of people and that’s something we really need to think about and even start a plan for already because a 1.5 degree to 2 degrees of warming is going to cause a lot of people to have to move.  |
| Pubudu | Like an [*inaudible*] than what we’ve seen into Europe, that’s the thing and we have to really think about those problems.  |
| Sally | I always think about New Zealand, as well, all those Pacific islands and New Zealand is going to be the first port of call for most of those people.  |
| Pubudu | And it should be, it’s our responsibility to take care of the Pacific.  |
| Sally | Definitely. OK well we might have our final song which is Anita’s choice, this is your colleague’s band.  |
| Anita | Yes it is actually, he’s an economist by day and a rock star by night. So they’re called Little Fang and I think this song is called ‘Golden Bullet’ so I thought it was surprisingly good.  |
|  | **MUSIC BY LITTLE FANG – GOLDEN BULLET** |
| Sally  | This is “Speak Up” – “Kōrerotia” on Plains FM and we’re talking about carbon-neutral New Zealand. To finish off, I’d like to think about…. We’ve been discussing so much different stuff but what’s actually going to be the impact? Are we likely to get there? And what role does New Zealand have in this space? We’ve sort of touched on that a bit as well. Just kind of a bit of a tangent but somewhat related: Dan, maybe if you could tell us a little bit about Trump Forest, that kind of picks up from our last thing a) about the importance of planting trees and perhaps the limits of planting trees but also the political situation that might have contributed to the increased importance that people are starting to place on climate change.  |
| Dan | So I have to go back and defend trees because I bagged them; they are important. When Trump was elected my good friend and colleague Adrian Taylor and myself got pretty annoyed, as millions of people did, and Adrian came up with the idea to do a Trump Forest to offset all the additional emissions that would happen from Trump and his cronies removing Obama-era climate policy. So we worked that out from studies, how much that would be if they removed the clean power plan and regulations on vehicles and then worked out how many trees you’d need to plant to offset that and launched this global campaign to fight back against the additional emissions from the Trump administration. It turns out it’s 10 billion trees - so I think we’re at 1.4 million now so we’ve got a long way to go. People really did get behind it, especially in the US, and it’s a really cool project and it gave people a voice and a way to express their anger, I think.  |
| Sally | I think that’s what I’m getting at with this idea of impact. It’s you and Adrian, and Jeff as well, and you guys started a bit of a social media campaign and all of a sudden you have 1.4 million trees. It might not be that much in the scale of 10 billion but you’ve done an amazing job.  |
| Dan | Totally, it’s just three people, exactly. Just working voluntary part time on it and we had coverage from BBC, *The Guardian*, big news outlets around the world, and it shows what you can do with a good idea and a bit of passion about it.  |
| Anita | How can people get involved? Like if you had land available to plant trees on could you offer that?  |
| Dan | Exactly yes, so two ways we do it. One, we realised early that people… A lot of people are lazy. So they get to a website and they see it’s complicated so they’ll just move on. We decided we wanted to have a ‘Pay now, move on get your receipt.’ So we have a planting partner in the US called Eden Reforestation Projects who have big planting projects in Madagascar planting mangroves and mangroves are one of the best at sequesting carbon. So that’s the easiest way people can do it, pay some money. Or they can do exactly as you said, send us the receipt of what they’ve done and some pictures and we’ll add that to the tally - so you can plant locally if you like and put up a tree to say screw you Trump.  |
| Pubudu | Screw your policies, at least.  |
| Dan | Yes, screw his policies.  |
| Sally | So what other things people might be able to do, in your experience, that might really have a big impact?  |
| Anita  | I guess from my perspective, getting back to the things we talked about earlier, about writing to your MP and the decisions like which bank you choose to invest your money in, really voting with your feet and choosing consciously. I mean not everyone can I guess be so entrepreneurial as it sounds like you are. And amazing.  |
| Pubudu | And I think with things like banks and stuff, saying *why* you are moving so not just going oh I’m going to a fossil-free bank but telling your bank hey I’m moving because you guys have investments in fossil fuel projects or whatever it is and be really strong. When I switched away from my bank to the one I am with now I was very clear about why I was switching. I’m only one person but if all of us or more of us start doing that then you go oh, OK well maybe we care about it. Just on that - again, I don’t want to name names probably - but there are certain like KiwiSaver providers who switched away from fossil fuels because of people essentially emailing them and going I actually want to switch but we don’t want to because you have fossil fuel investments and then they responded to that. So that kind of thing is powerful.  |
| Anita | I think if we… I guess the segway onto what you asked about earlier about implications for New Zealand is that looking at the background papers for the Bill, some of the economic analysis was suggesting and there’s a perception as well that it’s going to hurt New Zealand economically but I think we need to remember there are opportunities in these new businesses and new areas to invest in. Also the economic analysis didn’t take into the account the effects of climate change. From my work in the IPCC and the international literature, it’s very clear that if we delay action the costs are going to be so much higher than taking action now. So I think it’s very misleading to think that this is going to be costly to our economy; it’s going to be much more costly if we don’t take any action.  |
| Pubudu | That’s exactly right. I remember going through some of the analysis, like you said, the modelling, and all it did was compute the cost of action and there was a throwaway comment in one of the technical papers about the global estimated minimum of $16 trillion, it was just one line. I’m like, “Well, that’s not an insignificant amount of money right there you’re talking about!” You can’t… To me, that was one of the big failings of the modelling work and it is a hard problem: How do you compute the cost of inaction? But like Anita says, it’s very important that we put that perspective on it because otherwise all we’re going to say is oh well we’re going to experience this kind of reduction in GDP. Also what it didn’t do was compute the opportunities that will be there, where we change our investment. Remember what we’re talking about is the transition, not a ‘Let’s stop doing everything and sit on our hands’ - that won’t do anything. So when we say transition our industries, transition our production sectors, we mean that transitioning to other opportunities which can still produce the thriving future we like, just not with lots of emissions. There are also wider philosophical questions around: Does continued growth in a finite resource system make sense?  |
| Dan | No.  |
| Pubudu | The scientist… So there is a change in the way we need to value what we think of as growth. So if it’s purely to do with production growth maybe that’s not the best way but there are other forms of growth. So for example if you’re continuously innovating with new ideas, if you put that into your calculation, then that’s actually having an impact.  |
| Anita | And you can also value the environmental impact on the social and wellbeing budget we’re having, these are all steps I guess in that direction of valuing things other than just GDP.  |
| Pubudu | Absolutely.  |
| Dan | I looked at this study from these guys at Stanford this week and they’ve basically… They start in the States because they’re talking about what we’re talking about: OK, how do we sort this problem out, how do we power our economy on renewable energy? And they started in the States and they set out to do with rooftop solar and all these different options and they’ve done it for all the countries in the world now and they’ve said - as Pubudu said, all this modelling stuff is really difficult and has big uncertainty - but by 2050 - this is in $US so bear with me - if we remain on fossil fuels we’re looking at 9c per kilowatt hour, if we switch to wind, water and solar completely we’re looking at 9.5c so there isn’t a big difference if we were to put these changes into place now between fossil fuel infrastructure and renewable energy future. But those two numbers rule out these other externalities of the impact of climate change and health which was touched on earlier, that adds another 5.7c to that 9c number which makes fossil fuels by far the worst option and with this health problem, 4.2 million people die prematurely a year from air pollution, these are World Health Organisation figures.  |
| Pubudu | That’s not in 2050; that’s now.  |
| Dan | That’s now, exactly. It’s insane, it’s just a far better-looking future under renewable energy. If you go to places like China and South East Asia it’s horrible, its how people are living because they’re used to it but the air pollution in these cities is absolutely staggering and it is killing people.  |
| Sally | I think that’s one thing that’s not necessarily thought about all the time is climate change is seen as an environmental issue, but it’s actually a huge human rights issue and we were discussing on this. It’s health but it tends to be the people who are the poorest who are affected first.  |
| Dan | Absolutely. |
| Pubudu | And your comment is right, the people who are currently being most affected are people that have nothing to do with it: The islands in the Pacific and people in Bangladesh, people in Johannesburg, South Africa, people in Sri Lanka, these people were not responsible for historical emissions, they weren’t part of the problem really and now they are paying the price while we are sitting here going, “Oh, let’s discuss what we need to do.” And discussion is important, I’m not dismissing that, but I think we can’t forget that part of it.  |
| Anita | And I think also in our own process here in New Zealand, potentially some actions we take to reduce our emissions could potentially negatively affect the poorest in society so we really need to make sure that any revenue is redistributed to support people so it doesn’t become… exacerbate those inequalities. And we know that people on higher incomes emit more, there’s research to show that.  |
| Pubudu | I agree with that 150 per cent. The concept of a just transition, where you support the communities that are the most vulnerable to actually transition, and that means the work goes into those industries that are….high emissions intensive, it means the poorest of the communities in New Zealand are people who have been affected by - dare I say it - colonisation. The Treaty of Waitangi has to be respected in this transition, it is the founding document of New Zealand and there are people who were almost destroyed because of what happened in the past. So those vulnerable communities have to, have to be taken… have to take priority in this transition so a just transition maybe also hold up the principles of our founding documents are I think really, really important in New Zealand and worldwide.  |
| Dan | I think, just to wrap up, the effort that’s required though because I don’t think people should be complacent about that, the effort that is required globally to deal with this problem and the amount of time we have is unprecedented and colossal and some people in the past have compared it… I’m not sure I’ve completely agreed with the sort of effort in WWII especially if the United States respond to a threat and I think it is a cool analogy in the way it can show what we can achieve in a small amount of time.  |
| Anita | But UK and Ireland have declared climate emergencies.  |
| Dan | Exactly. So treating it like that shows what we can do. And these numbers here, just quickly, are ridiculous: In 1941, the US was producing 1,771 combat aircraft; four years later they were producing nearly 75,000 - that’s a 42-fold increase. Some factories were putting out a bomber every hour and then sending them to Europe and to the Pacific, 17 million new civilian jobs are created, industrial productivity increased by 96 per cent and corporate profits doubled in four years. But I think perhaps the most important thing of all of that is Roosevelt and the government installed more… a sense of partnership as opposed to the government over reach or oversight.And I think that’s really important, that the government and community… We’re all in this together, we’re not trying to screw you over, this is what we have to do and the government really… It’s a communication issue, especially in New Zealand, it’s difficult with agriculture, we’re already seeing it with the agriculture lobbyists going to fight back against this Bill and it’s a communication problem that Pubudu touched on. Everybody is going to be impacted by this, their industry is going to be impacted by climate change, and we have to get on with this together.  |
| Sally | I think that’s a good place to sum it up actually: It’s going to affect everybody and as you mentioned, Pubudu, the farmers are noticing changes, it’s just a matter of how do we work together so that everybody can benefit.  |
| Pubudu | It’s about actually talking to everybody and respecting their voice and letting the communities actually help drive the solutions, not just impose solutions because that never works.  |
| Dan | Exactly.  |
| Sally | Perfect place to finish up. Thank you very much, guys and kia ora for your time. A really, really great discussion and here’s hoping the Bill gets passed into an Act.  |
| All | Thank you.  |