

Participant J telephone interview, 5th February 2018

[CS introduces project and interview]

Int: How many years have you been farming for?

J: Personally, all my working life, so forty odd years. The company I currently work for was incorporated in [REDACTED] so it's been going for well over a hundred years, including before when it was incorporated.

Int: okay, and what's the current size of the area that you farm?

J: It's around about 2 and a half thousand hectares.

Int: And is that all owned by the company, or is some rented?

J: About 80% of that is owned and 20% is hired on a one year basis.

Int: Okay, and is all of that irrigatable?

J: Most of it yes.

Int: And what water sources do you rely on?

J: We have a mix of surface water and groundwater, and also a mix of summer and winter.

Int: Okay, and do you have reservoirs?

J: We do yes.

Int: Okay, so you've got a range of summer abstraction and winter abstraction licenses.

J: Yes, so we have summer and winter of both sorts. We have summer surface, winter surface, summer groundwater and winter groundwater.

Int: And are those licenses up for renewal soon... sorry, I should have asked are they licenses of right or are they or are they time restricted?

J: Some of them are licenses of right but by far the greater majority of the licensed quantity is in time limited licenses, and they are all in the process of renewal now. Sorry, all the groundwater licenses are in coterminous renewal in April 2018, so they've just been renewed.

Int: So the next time they will be evaluated will be in 8 or 10 years' time?

J: In six years' time.

Int: And are you confident that you will continue to be allocated the same amount of water in the future?

J: No. Not confident. You'll probably know if you've spoken to some of the people that I suspect you've spoken to in our area, that we've been caught up in this er WFD review concerning environmental damage, non-deterioration, that's right. We've been caught up in the Environment Agency's reaction to the no-deterioration requirement for abstraction licenses under the water framework directive. So that's affected our groundwater licenses, where we've been renewed on the basis of a formula that looks at the last 15 years of abstraction, and we are now limited to peak abstraction in the last 15 years, so whichever was our highest use in the last 15 years, that's our new licensed quantity. Now in the case of the license, if we used 100% of licensed quantity once in the last 15 years, then bingo no problem for the next six years, but where we haven't done that, which in our case is on a number of licenses, then you know we've suffered a cut related to however much we failed to hit the target.

Int: Okay, and what does that make you feel about your resilience to coping with a dry year going forward... do you think that's been reduced as a result or are you happy that you will have enough water?

J: Um, it's one of these things. I tend to view them on a number of parallel lines. On the one hand you could say, if we haven't needed the water in the last 15 years, why are we going to need it in the next six, or the next 15 or whatever period. And I can see the logic of that. Where we start to become unnerved is that we've lost a degree of freedom, we've lost part of our headroom, so we've lost confidence. So whereas hitherto we might have been able to say to ourselves, well, we've got licensed quantity X, if we're only using 80% of X if a particular season gets a bit trickier, we know

we've got 20% up our sleeves. Well, now that 80% has become the new 100%, so what do we do in future? Do we work at a much lower level and still keep some headroom? Or do we work to a higher level of risk? And the answer is probably the latter. We are going to be working to a higher level of risk, and that, if you like, is a challenge to resilience.

Int: So why would you choose to work to a higher level of risk rather than working to a lower level to allow the headroom?

J: Well, at the risk of speaking slightly hypothetically, you could say well, one thing is we've got a business model, a production profile, which produces certain goods as outcomes, so we are growing certain crops and we've pursued a level of cropping with a given level of risk management which includes some headroom in the irrigation. Take the headroom away, then the same production target is inherently higher risk, so we either shrink our market, so we have to go to our customers and say, "hitherto we've been planning to grow you this much, but because we haven't got confidence in the water quantity we are going to have to reign it, you know, we'll have to cut that back. And of course, if our output shrinks, our business shrinks, you know we've got to think of something else to do instead.

Int: And how do you think your customers would respond if you were to go to them and say that you needed to scale back the quantity that you were producing slightly?

J: Well, it's um, customers are not always predictable in that regard. If you go to someone and say, "I need to become smaller", erm if everybody goes and says, "we are all going to be smaller", they might say, "well, hold on, if I've got ten suppliers each telling me they want to be 10% smaller, well why don't I just have 9 suppliers and have them all a little bit bigger". So you face the risk, if you are the one who's shrinking, of the customer saying to you, "well look I'm sorry but there's not much point in dealing with you, you are getting smaller, not bigger, I'm going to deal with these other people who are still willing to grow as much or even expand".

Int: Because I guess the economy of scale would be reduced for the customer I suppose.

J: We would immediately become, or it is very likely that we would become less cost efficient. I mean typically if you reduce an output at the margin then you will put up your unit cost of production at the margin consequently. So yes, we would become less competitive.

Int: So can I ask which crops do you grow that receive irrigation?

J: Well, in terms of priorities, potatoes, onions and parsnips are the crops that we prioritize for irrigation, but we are on some very light, you know, drought-susceptible soils so our other crops of

sugar beet, maize, wheat and barley in some years, if there is water available, they'll be irrigated too. But the key ones are the root vegetable crops.

Int: And is the proportion of business income that's coming from irrigated cropping increasing over time, or staying more or less the same, or reducing?

J: The importance of those crops to our business is increasing, but we face a commercial challenge inasmuch as we are in an incredibly competitive market place, so the prices that we have been receiving for our produce are increasingly under pressure, so prices going down, and we are increasingly in the business of trying to find ways of increasing productivity to compensate for a lower unit income expectation.

Int: Okay, and can you give me some examples of how you might be able to increase productivity?

J: Well, we've looked much more critically at the way we do everything, including irrigation. There are things like new varieties, new cultural techniques, new technologies in the field. We are just chipping away at the odd percentage point here and there, but we are paying a lot more attention to everything, including irrigation, and trying to be cleverer, be smarter in the way we do it.

Int: So what's your irrigation approach at the moment?

J: Inevitably there has been an element of building in a little bit of comfort, so if in doubt, irrigation, and also using... on the basis that it's better to put a couple of mm more than the crop really needs, or irrigate a day earlier, rather than miss it. And I guess what we are under increasing pressure to do, both from a commercial cost point of view and from a resource utilisation point of view, is sort of say well, you know, we've got to be much smarter and only irrigate the crop when it really needs it and also look at the application technology. Are we doing it as cheaply as we can?

Int: So what application methods do you use at the moment?

J: We use sort of the industry standard hose reel and rain gun. We also use hose reel and booms. And also linear move sprinkler irrigators.

Int: When was the linear move put in? Was that recent?

J: About 15 years ago.

Int: And what do you think the next steps are for you in terms of the irrigation methods that you are using? Will you be trying to implement anything new in the near future?

J: We are playing with, or experimenting with, nozzle selection on the sprinkler system to use nozzles that have a lower pressure requirement. So if you like that's to do with cost of energy in water application. We are trying to change the proportions of the different kinds of irrigation that we use, so trying to use more... better utilise the linear moves and the sprinkler booms, and rely less and less on rain guns.

Int: Right. Because the rain guns are not getting the water to the right place as efficiently?

J: They are inaccurate. I mean the thing is for me the rain gun is a classic of two things. First of all it has a very high pressure requirement, so energy costs in pumping are intrinsically high, and then from an efficacy point of view, because of the susceptibility to wind drift and those sorts of things, you need to be a little bit more luxuriant with the use of water to make sure that you are getting enough in the lowest places if you see what I mean. Those bits that are getting least water are still getting enough water, which means that other places are getting too much.

Int: So what about irrigation scheduling techniques, as in are you using probes? What approach do you use?

J: We use a balance sheet type approach supported with Enviroscan, so capacitant probes. So those two technologies really. And then the age old thing of feel the soil, smell it, squeeze it. Experience. It's a dark art as I'm sure will have conveyed.

Int: But according to everyone it's very important. One of the questions I've been asking is how comfortable people feel with relying increasingly on technology to control irrigation. How comfortable are you with increasing precision technology in agriculture?

J: I'm pretty comfortable with it. I mean my experience with using this sort of thing goes back a very long time. I first started using neutron probes in the early 1990's, and what I found was that firstly, for me, you need to go into something with a positive attitude, so you go into it wanting it to work and not trying to find ways why you want to dismiss it. And then it's a combination of lots and lots of data points and one's experience. So I would say, in my experience, it probably took 10 years of using neutron probes, I think you can draw a parallel between neutron probes and enviroscan capacitant probes, you know it's the same sort of idea, you know, with 10 years of work on a range of different crops across a spread of fields you start to get a feel from how that technology is really helping, and you can finesse the technology. So you are sprinkling fairy dust over the decisions. So I

don't have a problem with that concept. I suppose where I do have a problem under UK conditions is being able to turn my back entirely on a human presence in the field and relying entirely on the probe readings. But I will go onto say that another thing we are starting to look at here is drone technology or if you like data capture, but whole field data capture from the air. And I'm beginning to wonder that if we've got the right kind of sensing technology on that and we can see and we can have confidence in what the moisture status of the whole field is, if we couple that to some of the application technology that we are now developing, I've got every confidence that in years to come we will feel a lot more comfortable in allowing technology to make the decisions for us.

Int: Yeah. So you said in UK conditions you'd feel perhaps less comfortable about not having a human presence in the field. Is that because of the weather being much more variable here, and there being a lot more chance of weather here, are you making that comparison with countries where there is less rainfall?

J: Yes, that's right. And I think if you draw, if you illustrate by extremes. I mean I haven't had much experience of for example growing irrigated crops in South Australia where the soil type is incredibly uniform and you know it's not going to rain, so if you are in that kind of situation then planning irrigation, I'm going to say rather simplistically, it looks to me to be a much simpler task than trying to plan irrigation in an environment where the soil types are... I mean, throughout large parts of lowland England the soil type can vary quite significantly across a field, never mind across a farm, just across a field. So that means the drainage and the growth characteristics, so the ability to support a crop, the way that that crop grows on it, the way the soil type drains, all those sorts of things are not uniform across the field and then lay on top of that the fact that we don't know when it's going to rain. We are fairly confident that it's going to rain sometime, but we don't know when. And of course, so that clutters things as well.

Int: So looking back over your career, what innovation related to either irrigation application or scheduling do you think has made the most difference in terms of increasing the efficiency of your production?

J: I would say, in circumstances where you can introduce linear move technology, coupled with good sensing, good scheduling.

Int: What are the limitations in terms of applying that more widely?

J: Variances within field, so uniformity of soil type. I find it quite interesting for example that the business I'm running now, I've been running this business for four years, and prior to that I worked in [REDACTED] but that's an aside, and prior to that I managed an estate not far from here for [REDACTED] years which is where I clocked up most of my irrigation experience and what I've learnt on the farm I'm on now is that the soil types vary a lot more than on the farm where I learnt most of my stuff. And in the last life the field sizes were bigger, soil type was more... it's all relative, but they were bigger, they were

more uniform, it was a lot easier to plan. So on this farm I'm finding it much more difficult to introduce this sort of technology because for example we've got more fields with er telegraph poles or power cables going across them. So the moment you've got some power cables and the odd tree, all of a sudden, irrigating with a boom is a much more challenging task. So you can understand why people stick to hose reels and guns. The other great thing about a hose reel and gun is it's portability, and so if you are hiring land off site where there isn't the infrastructure, so if you've got to provide irrigation equipment, so hose reel and gun... dead easy. Everything else, much more difficult.

Int: So the irrigation efficiency of your production, it sounds like it has increased over time. Do you feel that that has any implications for the resilience of your business to water risks?

J: I think it's not strongly related largely because other factors have been creeping along alongside that have been having a much bigger impact, so it is the whole water resource debate that is now threatening us much more. And you could argue, I mean it's a... this issue that our licenses, our groundwater licenses have recently been assessed on the basis of how much we've actually used. Well, that has penalised people who have worked hard to be frugal and really use the resource, to respect the resource and use it with care and consideration for the long term... it's penalised those people compared to other people who said, "Well, I've got a license and I'm going to use it". And that's disappointing, but I don't know what you'd do about it.

Int: Yes, it's a bit perverse really isn't it?

J: Yes, and of course the very fact that this process has been used this time, it really has brought into sharp focus the "use it or lose it" philosophy, and whilst we mustn't speak about this publicly, I can imagine that at an individual abstractor level you are now going to serve yourself best by making sure that you use your license quantity every year, come what may. But collectively that is not a sensible thing to do. Well, arguably it is not a sensible thing to do individually, but as an individual you look after your own business, no one else will. Collectively if we all go using water unnecessarily then we will all suffer in the long term. But you can also say that, if we are all going to suffer in the long term, well at least we all suffer together, rather than those who are taking a responsible view, who will effectively disadvantage themselves compared to those who are saying, "Well, hang this, that water's coming out of the ground!".

Int: Yeah it's a complicated problem really isn't it?

J: It is.

Int: Are you a member of a water abstractor's group?

J: Yes.

Int: And how do you feel that has impacted on your water use and the decisions that you make?

J: I'm a member of the [REDACTED] abstractor's group that was set up in [REDACTED]. I joined it in [REDACTED] and I've been [REDACTED] of it for the past [REDACTED] years I think, so er, and I would say that the presence of that group has helped enormously to the benefit of abstractors in the [REDACTED] water unit over the years as a group and as individuals as well, in terms of helping to... the work that group has done, it has helped evolve the relationship with the Environment Agency, positively, inasmuch as we've had a relationship based on good dialogue and trying to work together and sort problems out, and I think that's been beneficial and has had some influence on the way that the environment agency approaches the whole abstraction for agriculture issue.

Int: And what caused the abstractor's group to form?

J: Crisis. And that I think was the start of the first shift in thinking. We are going way back into the early 1990s which is an age ago, and it was at a time when it was still, the received wisdom, the standard thinking was that irrigation was a nice to have, it was an added extra, it wasn't essential. And the thing that triggered the formation of the [REDACTED] abstractors group was [REDACTED] a very dry period and the aquifer was beginning to come under stress and the national rivers authority as it was then, the NRA, invoked an immediate ban. Have you heard of a section 57?

Int: Yes.

J: Well, it wasn't called a section 57 then, but it was the same process, where it was in the gift of the regulator, in that case the NRA, to simply order abstractors to cease irrigation. So the first any abstractor knew that this was coming was when the letter landed on the doorstep that says as from receipt of this letter you may not abstract for irrigation, which of course, in the middle of August was an absolute disaster for people who've been nurturing their crops under irrigation and then all of a sudden it stops dead. And there was a bit of an outcry. But this group was set up firstly to make a voice to say to the establishment, look you can't behave like this, but the way the thing developed was that that group had an ongoing dialogue with the agency (sorry, the NRA became the EA in about 1992/93), but that dialogue was set up whereby the abstractor group spoke to the agency during the winter months, you know, how's the... what's the state of the aquifer, is it recharging satisfactorily? What are the prospects for the coming year, and to this day we have a meeting in March between the abstractors and the agency where we discuss the irrigation prospects. And there have been a number of years where things have been looking a bit tight and we've actually given a voluntary restriction, we've imposed a voluntary restriction on abstractions as an offer to the agency, in exchange for them undertaking not to invoke section 57 on groundwater unless it's



absolutely necessary. And that has, well I was going to say it's worked... it's worked to the extent that we have not had a section 57 imposed on groundwater from that day to this. The cynics would say that's because it rained, so even if the years where we undertook, we made a voluntary restriction, mother nature baled us out at the last minute, so we never knew the full consequences of whether or not the agency would have stuck to their word.

Int: And with a voluntary restrictions like that, is it that you all reduce your water use by the same amount, or percentage, or is it that you agree as a group to limit it by a certain percentage and then you work it out amongst yourself who might have more need of using more of the water? How does it work specifically?

[REDACTED]

[REDACTED]

J: How it worked was it was a collective decision, it is fully defensible but it works something like this. Historically the groundwater abstractors in the [REDACTED] had never abstracted more than 50%, collectively never more than 50%, of total licensed quantity. Now in that population you've got people abstracting 100% and people abstracting virtually nothing. But of course, what the agency needed was the comfort that... because when they do all of their predictions and their calculations they have to assume that 100% will be abstracted, so what we said was we will voluntarily, collectively limit to 80%, so at least you then know that you can use that in your calculation and you know we'll stick to that. So as we went through the season we would be monitoring abstraction through the agency, so the agency would be monitoring abstraction and telling us how we are getting on, are we doing okay, does it look as if we will not exceed 80% of total licensed quantity collectively. But you can see how that was actually not a very difficult task.

Int: It was more sort of about keeping the relationship functional, but actually it wasn't perhaps tested like you were saying.

J: But it was never really really tested, but it doesn't alter the fact that it was there and that it had real benefit, especially to the agency, in terms of doing its calculations. Now what I would say now [REDACTED] is that life has changed because having gone through a process where we are now, we've all been limited to peak use in the last 15 years, then our headroom has gone, and we will not be able to make a voluntary restriction in the future, we can't. The mechanism for doing it has been taken away from us.

Int: So what do you think... how will that affect the abstractors group in terms of, I mean do you have options open to you...?

J: That is a very good question and when we have our meeting in early march that will be an interesting conversation within the group... How do we deal with extreme drought pressure in the future because we cannot any longer view a voluntary restriction in the same way that we have done before. It's going to become a much more real thing and so er, but you see part of the logic of the way the whole thing's been put together, now with the no deterioration under the WFD, we shouldn't be heading into that kind of territory, it should be much more difficult to actually realise. But who knows? We still don't know what the long term prospects are for climate change. Is it going to be drier? Or wetter?

Int: And how do you feel about the way that the EA assesses environmental water requirements? Are you satisfied that they are measuring things the right way?

J: No, I'm not because the killer statement, the killer qualification, is "at low flow". It's all, it's "environmental damage at low flow". Well the thing is "low flow" doesn't happen very often and I think the equations don't, or the models don't take sufficient account of is environmental resilience, inasmuch as there is a presumption at the minute that the instant... it all comes back to river flows doesn't it? I know groundwater levels have an influence on river flow, so the whole ecological thing tends to be based on river flows, one way or another, and so the model presumes the instant you go into low flow you've triggered a whole load of damage from which the environment will never recover. Well that's rubbish. And so it seems to me, well I make the challenge, to say it's rubbish is perhaps a careless use of language... I challenge that assertion, whilst I accept that it might trigger certain changes, what I'd like to know is are they permanent changes from which that environment will be permanently damaged, or are they short term changes from which that environment, that ecology can recover.

Int: And I guess that there's not very much understanding of that since there hasn't been the opportunity to measure it very frequently...

J: Yes, that's right you know we haven't been there, so we don't know. But on the other hand I would say that I'm as committed as the next person to understanding and protecting our environment and our ecology in the long term. I sometimes wonder if the tools are a bit blunt and the knowledge isn't quite as well developed as it could be.

Int: So the EA, I guess the main way they influence your water use is through the threat basically of restrictions. Are there any other ways in which they are affecting agricultural water use, do they offer advice on irrigation technology or anything?

J: I suppose if you look at the other side of the agencies work, we ought to be, and are in our business, equally conscious about what some of our other farming activities are doing to exacerbate some of these problems. So if for example the issue is eutrophication of various sorts, then you

could say, well are our farming practices allowing too much, whether it's phosphate or nitrate or whatever contaminant it happens to be, or pesticide residues. If we are behaving in such a way that we're allowing more of that stuff to get into the water environment, which is in turn triggering non-compliance in water quality in the rivers, then there's a circle there that we need to help square. So I think if it is, yeah so there are initiatives which the agency is involved with which are encouraging us to pay more attention to how we use inputs. And again the same way I've referred to drone technology, to image sensing technology to help us with the water status or drought status of crops, similarly I think that branch of technology is going to help us so much in the future with much more targetted input management and I think will revolutionise the way we use pesticides for example. Completely revolutionise it. In ten years' time I don't think we will be using a fraction of the quantities of pesticides that we are using today.

Int: Comparing the impact that the EA have on your water use with the impact that retailers have, would you say that retailers are equally as interested in your water use, and are they undertaking measures that will cause changes to agricultural water use?

J: Um, yes. The major retailers do have a big impact. And I regard their influence as a simultaneous strength and weakness in terms of how it might benefit our business. The strength is that they do have enormous influence, not only on my behaviour, but also on the behaviour of others. When I say my behaviour I mean as a farmer. But they have influence elsewhere, well throughout society really, in terms of influencing their consumers. So the typical person in the street, they can influence their views on things which in turn can influence buying patterns and acceptable production techniques. But the misuse, or the unintended consequences of that influence can be quite scary. I mean of course they are getting involved, as i'm sure you know very well, into our growing protocols, but where I get worried about that is that sometimes they can pick a ball up and run with it before a lot of us are ready to take the consequences.

Int: So when you are referring to unintended consequences, can you give me an example to illustrate that?

J: Erm, I was afraid you'd ask that! It's the sort of... Right I can give an example then that isn't to do with water but it illustrates the point. There was a time when certain growth suppressants in onions, Maleic hydrazide, there were questions over its suitability. And so one or two of the major multiples leapt on this and said... they went to some of their growers who said, "well, we can grow it without Maleic hydrazide", and they said, "Right, okay, from tomorrow we are not having any onions with Maleic hydrazide". Now all of us can grow some of our crop without Maleic hydrazide, but we can't grow all of it. And that means that you can tolerate one customer saying, "I don't want any of this treatment on my onions", but the moment they all cry out for it then you are in a muddle. Do you see what I mean? So it's sort of cherry picking on quality and stealing the lead. I don't think the multiples do that quite so much as they did, but that is the sort of thing that's a concern. They get an idea, the technology department get it into its head that a certain thing is achievable and they push it through before we can follow it through on an industry-wide basis. But I think, retailing's changed quite significantly in the last 5 or 6 years with the emergence of the discounters, who, in my

opinion, are a little bit more circumspect. They are not gung ho by any means, they are very responsible operators in the market place. But they tend to just take things at a slightly steadier pace than has been the case for some of the big four in previous history.

Int: And can you tell me what percentage of your production is grown on forward contracts?

J: It depends on the crop really, I mean our business model still uses wholesale markets quite a lot, and food service and that kind of thing, but anything going through to a major multiple or a minor multiple is programmed. So I'd say one way or another probably about 60% of our output is quite funny to find as to where it's going.

Int: So 60% is not contracted specifically?

J: No, 60% is contracted. 40% is not.

Int: Okay, I'm conscious that you need to go so I'm just going to ask one last question which is about how do you think consumers feel about agricultural water use? Do you think they are interested in any way in the amount of water that is being used to grow their food? Would they make decisions based on their understanding that for example, potatoes from Egypt are contributing to water scarcity.

J: I think there's a fascinating consciousness and I'm a farmer, not a... what did you say your background is?

Int: Social science.

J: You're a social scientist. Because you would understand this far better than I do. What I can't get my head around is that there seems to me that we people we think and act almost in parallel universes, inasmuch as, that many, many of us, and I would say a majority of us are conscious about these sorts of things, and when you say to them, "look would you rather buy potatoes that have been grown in a way where the water environment is not being over-stressed? Or are you bothered?". And they say, "Yes, of course we are bothered". Let's call that one the better product, if the better product is twice the price of the other product. You know, conscience comes at a price and there's example after example of when push comes to shove, people's environmental conscience goes out of the window in order to protect their wallet. So yes on the basis of similar pricing or very close pricing, I would say yes, people would be conscious of that and they would make that decision. But if there's price sensitivity laid over the top of it, then I don't understand how it works, and I'd be interested to know whether there are examples of people shunning something that has been produced under undesirable conditions. Do they make their decisions as

end-consumers, or do they rely on the system to make them for them, for example. So when someone buys a cotton t-shirt from Next have they relied on Next to make sure... do they trust Next to make sure that T-shirt was not made by some poor slave in darkest wherever. Or are they going to make the decision for themselves, are they asking the question, "was this t-shirt produced under appalling conditions, because if so I'm not going to buy it".

Int: I guess it's difficult to know how far people trust authorities and I suppose it's down to, probably to some extent, psychological differences in terms of individuals.

J: I think it's often very convenient to trust... it's about trusting the brand isn't it. A lot of big brands say "this is what we stand for", you know, "we stand for all these values", and people if you like they by proxy we put that responsibility, as individual consumers we give the value chain the responsibility to act as our conscience, to act as our collective conscience, and make sure the things that are put in front of us are the things that we ought to be buying.

Int: Well, I'm going to let you go now because I know you have another appointment, but that was really incredibly interesting and thoughtful, so thank you very much, it will be really useful for our project.

J: Well I'd be very interested to... it's fascinating work, Chloe, and I was really interested to read your summary commentary on the water scarcity index or something, and I thought that was fascinating, and this last part of the conversation has really been about that and er I guess consumers will become bothered when it affects them a lot more but at the moment it doesn't seem like a real problem.

Int: Well it's good that we've got a case study in South Africa as well...

J: Well, sadly, that's the way human nature works, isn't it? I mean on a very different scale the [REDACTED] abstractor's group was only set up because of a crisis, it wasn't set up because we thought it would be a good thing to look after our access to water in the long term. It was when someone took it away from us that we did something. But there we go, that's how people are.

Int: Would you like a copy of the transcript of this, because I'm going to type it up so I can send it to you if you'd like a copy.

J: Yes, but I'm sure it will be just fine, but for the sake of form, do that, and I look forwards to following your work, it sounds very interesting. It's valuable stuff, it's not just interesting, it's important.