

Participant C, 11th January 2018.

C: Irrigation right? And even if they want a fair bit for the environment they won't want all of it. But anyway, let's carry on. Because I don't believe we are short of water. Right, but carry on, but we can start the interview now. But I will be a bit controversial because that's the way I am. Even though I am [REDACTED] and supposed to be really politically correct.

Int: [REDACTED].

C: The views I shall be giving will be on my specific location which may be different from a person only two miles away. Okay?

Int: Yes, definitely. So the first few questions are quantitative. How many years have you been in farming for?

C: 35

Int: And what's the total size of the farm and the cropped area?

C: That this business is responsible for? Because we are complex.

Int: Yes

C: 2,000 hectares

Int: Okay. And is that all cropped.

C: Yes, I'm giving you the cropping area.

Int: and is all of that land owned, or is some of it rented?

C: As of now, because we've just sold 2000 acres... hmmm. Only 800 Ha.

Int: And the types of abstraction license you have?

C: Winter and summer. I suspect we'll have to apply for trickle now as they've changed the regulations, but let's not go there now as it's a very minor thing.

Int: Okay. And do you think that the proportion of your business income that's from irrigated cropping is changing over time? Would you say it's increasing, staying the same or decreasing?

C: Had been increasing, but short term's not been too good, so it's not currently increasing. But that is a short term cyclical thing I believe. The markets are just shot to pieces. Oversupply this year has just crashed all veg markets, so.

Int: From the UK producers... because the conditions...?

C: Good growing weather, everything was superb, things growing, and we are still coming out a... we've got supermarket wars. And so, but those are just short term. We've been increasing our irrigable income, and that's where our money has always been made. Just saying we've just had a two or three year blip where things aren't too sharp. But that is cyclical rather than a trend.

Int: In terms of the destination for your produce was it...

C: supermarkets.

Int: and was it fresh?

C: Well, it's fresh. It's fresh in the main two supermarket, apart from onions which we store.

Int: And what percentage of what you produce is produced under contract?

C: Veg? We are talking veg now are we? 80-85 percent I guess.

Int: So you kind of grow 15% thinking that you'll grow that on the open market at the end of the season.

C: We intend to have homes for the whole lot. But contracts don't mean anything so.

Int: Right, what do people do...?

C: Well, you have a contract, but if they don't want it they won't take it, so... that's the real world.

Int: And why wouldn't they want it? Because of the quality?

C: Because of over-supply and if they can find a way of not taking it they won't take it.

Int: So is the contract a written thing or is it a kind of...

C: Most of them are written and not all of them are signed. We've got our own marketing company so we aim to contract 85% of our crop. And that's very much on purpose, so the desire is to have a float to be able to help customers when they need it. Last year you wished you'd had 100% contracts so even when some fell out of bed you would have less surplus, but that's life. But we generally aim for 85%. Sometimes less. It does depend a little bit on how we view the market. We certainly wish to have identifiable homes destined for all the crop. For instance, last year our yield of carrots was double what it should have been in the very short period that our group grows it in. So we had double what we were expecting.

Int: So was there anything you could do?

C: Not much. We ploughed a lot in actually. Because sometimes that's easiest to do that. So I'm not really criticising the people we contracted with, I'm just saying that's the way it was. I told you, over-supply.

Int: So has it... would you say that farmers growing most of their crop to a specific contract has that increased?

C: We always have, we always have grown to a specific contract, a specific size range, a specific quality, a specific contract. We are widening our customer base to include more processing outlets because it's become less easy to sell something that is not quite right into the fresh market. So we are trying to get into the prepared food market and one or two other things to get into a wider outlet. Because the best farmers in the world have crops that are not so good really.

Int: But if you were for example to have a higher than expected yield when market conditions weren't so good would you be able to sell it?

C: Oh, yes, when the market's short you can always find a home. This is why we are quite heavily contracted because when it's long it's not easy to find homes, even though I was a bit sceptical about them taking it, but at least there's a firm understanding that they should be taking them. And to be fair if you do a good job they will take them in the main.

Int: Have you ever experienced them not taking something...

C: Not specifically, because there's always something wrong with every crop you grow, so you can't really argue with them when they say your quality isn't good enough to be fair because there's always something wrong, I mean we are talking about vegetables now, not tins of baked beans, so I'm not critical of the customer, I was just commenting. That's the facts of being in business. You have to ride those storms through, and that's life. I'm not concerned about it, there's nothing new here. This has been going on for years. But our main customers are pretty honourable actually. So our... And it's funny, the different markets, potato market is far more mature than all the other markets, and we ride these ups and downs in potatoes far better than we do in other cropping areas.

Int: Why do you think that is?

C: I think we have a point of difference in [REDACTED]. The crop we are growing actually has a different, or it tends to be a little earlier than the majority of the country, it tends to produce them what they actually want in the slots that they really want it. We don't store any potatoes you see. We are at a disadvantage in that we are hand to mouth. We lift fresh off the field straight to customer. And a lot of it is loose skin. So if the customer doesn't take it and you've got to the specification, so you are growing to a very, very tight, specific size range in all our crops, potato crops. Of course, if they are not ready to take it, or you are oversupplying at that time, that gives us a weakness. But we have ways of controlling that in the field, so we don't have to lift them, we can slow them down in advance, you can actually slow a crop down.

Int: And how do you do that?

C: You can prune some of the leaf, you can reduce water, you've got to be careful with that though because it will increase bruising, but there are mechanisms, so... This year, actually potatoes, although there was, I would say generally an oversupply, we managed that quite well. We are also much more experienced in [REDACTED] with potatoes, I mean that's something we've been doing here for

years. But like I say we have a point of difference because we have the sand types, we have a relatively benign climate for early planting, so we have, you know, and we can lift any day of the week. I know Cornwall are earlier than us, yes, but they are not very reliable when it's wet. There are other areas just as early, but [REDACTED]'s where they come to for their consistent supply of early bakers and we're still, because of that point of difference, it is slightly protecting us from the market. So today's prices at £10-£20 a tonne for uncontracted whites doesn't affect us because we are not doing them.

Int: So do you think it's actually an advantage in vegetable production to be in an area, a less.

C: Well it's interesting because all the crops we have a point of difference for with being here we are quite comfortable with, but any crop we get involved in, actually we have no geographical soil and climate benefit we do struggle with because we are actually a little bit more expensive producers than other areas. Take onions, if you drill an onion crop in Lincolnshire they can actually grow 30 tonne an acre of onions, if we tried to grow 30 tonne an acre here we'd have to really push them with water and actually we'd have a job to store them. They'd break down, we'd put them past their natural, our fertility is so naturally low that even if you feed it you are forcing something, if you force something, and onions is a classic, if you force an onion to get to a yield to get to a... you then stack up loads of problems in quality and in storage generally we've found. So we are limited to yield which means we competitively almost have a disadvantage, yes it could be you could get one of those years where it rains every day of the week and maybe we've got an advantage there. People like having us in the mix because we are geographically different, but that's it. There's no yield and quality, I would say our yield and quality is not brilliant this year. Actually the yield wasn't bad but compared to some others it would be.

Int: And is it a bit more expensive here because you have to spend more on water and fertiliser?

C: No, Yes. Yes. We are quite expensive, we have to use a lot of water and a lot of fertiliser. The other thing is though we have been spoilt over the years. We've had quite a comfortable... I think we've got a little bit laid back actually. A little bit comfortable in our own existence and our costs are higher than they should be. So we've got to look carefully inwardly at what we are doing at the moment actually. We need to actually say, hang on a minute, we've got to, we can't have a new fleet of tractors every year, we just need to look at everything. I'm exaggerating but we need to look at everything because the margins aren't there at the moment.

Int: What sorts of water risks do you worry about mostly?

C: I don't worry about water risks - there's a controversial thing isn't it straight away?

Int: That's fine, an honest answer is the best answer.

C: I don't let it worry me, no absolutely not!

Int: But what kinds of water risks do you grapple with?

C: Ah, well, what we've got, oh well, a license that potentially wouldn't be big enough in a dry year, but I've got the water. You can read into that what you like. So maybe I'd just use more than my license and they would come and fine me probably. Hmm. It's all sitting there going out to sea, I'd say well, bollocks. A bit blasé there - you'd better not put that down! But what I'm saying is, I'm not going to run out of water so, physically the water will be on site somewhere - okay?

Int: And I suppose there's not really a downstream...

C: But my license, as I say, we need to start, probably we will... To be honest, there's so much change and everything else that I haven't bothered to look at ways of increasing our license because it's not entirely clear where they are going. I just know there are sources where I can get water at the moment. And there'll still be there even after all the regulations have been changed. Yes, it's true we probably should be investing in a few more winter reservoirs as well, we have one or two winter reservoirs but we probably should do more. Yep. To be more politically correct, yes. Because as it happens we had a terrifically dry spring this year and it looked like we were going to run out of water. As it happened we didn't because it then started raining and never bloody stopped. So you know, um. We also have cropping that's spread through the whole years, so it's not just all focussed at the front end. We do quite a lot of irrigation, so as long as SOMETIME in the period we get rain, that... you know what I mean. And we always seem to at some stage. Now if we had a whole year without rain we'd be short of water. Yep. And of course what we'd do about it is, because it hasn't happened... I'd have to think clearly about that. I mean I have a reservoir that's here, not licensed, full of water, just sitting there. We built it, haven't bothered to get a license for it, it's full now, full to the brim, it's just there.

Int: And how difficult would you anticipate it being to get a license?

C: I've got no idea... We'll see won't we.

Int: So if, for example, you had a very poor year and you lost a lot of money because of a water related risk, does that.

C: Well, we wouldn't, because I wouldn't let that happen.

Int: Well, you got fined or...

C: Would I? Would I let that happen? I'd get fined. I'd go to court. Like I've done before, we have done that before, many times. Hmm. Year's ago we used to go every year, but they got round that because they got fed up with spending an absolute fortune and us getting a £50 fine. Because the magistrates don't understand... "What do you mean you are pumping it out to sea so they can't have it?". They don't understand. "They pump here, and you are telling us you are pushing it to sea and there's no environmental worth with pumped water to sea", you see. There wasn't then, the RSPB are trying to change that now I know, but... And the magistrates just couldn't understand... "So hang on, they are using water to save you money from pumping, and you are telling us that the water's going to waste. Why can't they have it?". So in the end they just tripled our license and that solved that problem. I am going back historically here sort of 25-30 years ago.

Int: That was lucky.

C: No it's not lucky, it's just common sense! It's just erm, the problem is don't forget they are trying to make a rule for the whole nation without looking at... Now they are to be fair to the agency doing a lot of work now trying to focus on catchment, so I'm not knocking them, and in fact I get on with them very well. But I have to say, how well I'd get on with them if we had a serious issue, I don't know. I mean, like I say we have quite a lot of water, and every time I've thought we were going to have a problem we haven't had one, but I can see there's the potential for a problem and that would be a real risk. The risk is though that the risk would be so great that inevitably I'd have to use that reservoir full of water wouldn't I? That's sitting there, winter storage. So I'd have to use it wouldn't I? And then I'd have to argue about it afterwards, because I couldn't wait for them to make a decision. Because when you are turning over ten million quid, which we do, I can't drop 2 or 3 million can I? So, because we don't irrigate for quantity by the way, this is something you need to know, the majority of irrigation is for quality. I mean, sorry, it has a quantity part of the equation, but the prime use of irrigation is for quality, because for potatoes particularly we are irrigating fighting scab the whole year, because we grow sequential crops and they never get bigger than that (gesturing), so they are almost virtually in scab risk the whole of their life. Do you see what I mean? And to be fair whether it takes... At the early season, yes we are using water to accelerate growth, keep the quality, but as the season goes on we are not looking to... We'll get to the yield we need even if it's a bit slower because we keep it a little shorter water as long as we are covering the scab control. Do you see what I mean. So we are not growing for yield on a lot of these crops, it's yield and quality in all of them.

Int: We'll move on and talk about...

C: Turning water off halfway through the season for the maincrop grower isn't a disaster, they are just trying to grow them to yield. I mean it's not good but it's not a disaster. If we get our water turned off halfway through the year and we get scab on hundreds of acres of potatoes actually that's not too sharp. I've got no recourse then, I've got no sale. Full stop.

Int: So do you feel that the way risk is distributed throughout the season the burden of the water risk is mostly sitting entirely with the producer? It's kind of up to you to control for that or take measures for that?

C: If you are asking me whether the chain that purchases the product or whoever it is are, they do not seem in recent times to be bearing any or thought of a price that should accommodate a certain amount of risk from a farmers perspective, so if you talk to them about what it costs to grow a crop, that's a dangerous discussion. If you say it costs me X pounds per tonne to grow that crop, and they say if we are paying you Y, that's fine. Okay, but what about the 10% failure rate? And they are definitely less inclined to discuss that issue. That is your issue, for them. And any farmer will tell you that a hundred percent success rate is not achievable in something that grows outside. So, oh but those that are successful at 100% success rate, good luck to them and well done. I'm not going to criticise them, I'm not saying it's impossible, I'm just saying it's not easy. And I don't think growing risks are priced in if that makes sense. In my opinion, but I think that's a choice you make when you determine contract values and everything else, you have to determine that risk yourself and determine whether you like the idea of it or not.

Int: And do you have much leeway do you think, in terms of being competitive with other people?

C: At the moment with a lot of the crops we're growing if we do well we are breaking even. But that's the current climate, like I say, it might change.

Int: Um, so what do you understand by irrigation efficiency, I think there's various different ways to understand that term...

C: Oh, irrigation efficiency, I don't know. What do you want to know about it?

Int: I mean, would you say that, you say that you are growing specifically for quality, so erm...

C: Yeah, okay, so I would suspect we are over-watering as far as growth is concerned at the early stages of most of our potatoes, because we are definitely watering for quality rather than growth, you know rather than size or yield at that point. And so probably we... water is being wasted to promote quality, rather than the mass that you eat when you get it at the end of that. So I wouldn't deny that. And this is why we try and use relatively tailored volumes at each application at that stage so that we are not wasting it to drainage to be fair. But I can understand there is a natural tendency to... if you are talking about total volume that people eat, therefore it's good for the nation, I suspect we are wasting water to provide them with quality that possibly doesn't actually make any difference to the customer, but certainly helps make them pick it up.

Int: And so what kind of irrigation... How has irrigation on farm changed since you've been here?

C: Actually not a lot since I've been here, so we are probably... I mean we have centre pivots. But we've had those since I started thirty years ago. So they are quite efficient sprinkler systems that walk around fields. We already have three or four, or two or three... I don't know, a few hundred acres under those. We have booms. Er which use a sprinkler system. We have a small amount of trickle now, which we never had, but we've had booms for years. Yeah, but our mainstay is guns, even now. We run thirty rain guns.

Int: And why did you introduce the trickle?

C: Um... well we had some trickle about ten years ago, specifically for a crop, actually, sorry it was 20 years ago, specifically for one crop that my partner who was working in the business at the time wanted to try, so it was almost a trial really, he actually left the business for a sabbatical for a few years, I was running it myself, I haven't got accommodated in my increased workload... And we had a crop this year we tried it for an experiment, we grew some butternut squash and some sweet potatoes, so we used it there.

Int: So it's not that you are trying to increase the efficiency?

C: Well, we felt it was right for the crop because of the way it was being grown... it was living under fleece and polythene, living there, so overhead irrigation was not possible actually, so there was a specific reason we went back to it. Am I moving the farm to trickle, no. Having said that it's nice to try and it actually worked very well. I was actually quite pleased with what we did because it's certainly moved on from when we tried it 15 years ago, when had pipes blocking and leaking and it was actually a nightmare, whereas this time actually once we had got it laid... a few teething problems, but actually once we got it running it was a relatively easy thing to use. I haven't actually looked at the costs though to be honest to see how I feel about it. I'm going to be honest. And yes we might try again next year on another crop because we've got it and we've got a nice 20 acre field and we could use it with another crop that could benefit with that source of water because we are going to try to keep it covered in one way or another for a long time, and so we thought we'd try it. But they are for crops that don't suffer from scab control because our sands, when they go dry they do go dry. And you don't get the osmotic effect, it doesn't pull out for scab control. You can use trickle for potatoes but you've got to be really confident that your system is running tickety boo. I know it can work, I've seen it. But it's not something for us to use with potatoes at the moment, particularly whilst we assess what is the long term market going to do.

Int: Was it lower labour with the trickle?

C: Oh no much higher labour, you've got lay it, you've got to remove it. Irrigation guns are no labour at all. We irrigate I think 350 acres a day with rain guns...

Int: I just meant there wasn't a period once everything was laid where it required less person hours?

C: Yes, but then you get teething, you get something blocked and you know its... To be honest I didn't get involved enough to really comment on that, but on a small area it's almost a red herring. Whether you have a big system, big area, you could make that save money, I don't know, I wouldn't like to comment. As I said I haven't done the costings yet... we shall look at that of course. Yep.

Int: In terms of I guess it's a more technical approach than a rain gun or boom?

C: Well, you are using the same techniques to determine the amount of water required, that's not different is it?

Int: How will you do that?

C: Well, we have three systems. We have a fork like everyone does. We have, er, we use, we've also got the old fashioned way of doing it. Uh, you know transpiration rates etc.

Int: Ah okay you do a calculation.

C: Yep, because we get information locally and so we can do that. Those two, the fork and that are not our prime. They are sort of there to double check.

Int: So by the fork you mean going round and actually looking?

C: Yeah yeah yeah. It's all very well. You can, because if you calculate the ETO without going round with a fork you might have missed out that you actually had an inch of rain there which actually didn't happen there when... You know you've got to be careful. None of the machines we use we trust in itself. Every field will have the fork approach as well. Every field. But we have two types of probes we run linked to computers to tell us technical soil moisture, we have weather stations with rain gauges and humidity and this and that, so that's all on computer. A bit above my head, but it's there.

Int: When did the probes arrive on farm?

C: Well actually we own some and some we just hire on a yearly basis and, I don't know why, but we run two systems, two different people, very similar in concept, but we just run two systems

Int: Well, just to be sure that one is not making mistakes?

C: I think so yeah, but the siting, you have to be so careful, you have to really monitor... when you first put them in you've got to be so careful because they could have gone in wrong... you know, but you can soon tell, to be honest, using the other methods, you get an idea. You know, you can see. And once we get them working well they are pretty good. We don't have them in every field, I mean that would be ludicrous. But we have what we call the lead fields, which gives you a clue as to the sequence of what's happening, we tend to group them in soil types so we have one on our really blow-away sands, and then another that's perhaps on one of our medium sands, and then one on our heavier sands if you like. Because they are all different, they have different water holding capacities. So I think one of the systems is more, what is called tensiometres, that I used to use in my younger days, they are based on that. The other ones based on, it's not radioactive, but it's based on... I ought to know the names of these things but I don't! One uses a porous pot type approach, which is to do with pressure. And the other one is to do with measuring electrically which is why I run both I suppose so we can just compare them.

Int: And do you feel comfortable with increasing your reliance on a more technological approach?

C: No, I just said, sorry, we are comfortable with that approach, but we use a fork as well and we use the other things as a background. The other thing we don't use in great detail, we don't do a schedule for every field, but we know the transpiration rate of 100% ground cover etc etc and we use that as a fairly... That's in your head really, that's not used for detail, we are going to put 15 mm on that field, that's just used to monitor the whole thing: has the computer gone completely wrong type of approach. And the fork is because it is surprising, sometimes the gauge isn't reading right, something's happened, maybe a spray man's knocked and... I don't know. And so we always use fork, and I'd made the mistake of farming the office before, I'll be quite open. I was sitting in my office, field of you know, going by all this technical data and thinking, oh yes, I'd better water that, and when he got up there the bloke went... I sent him up to irrigate the field and he phoned me up and said, "I've got stuck". I said "what do you mean you've got stuck?". "Well, I can't get across the field with the irrigator because it's so wet. So it just shows how it can go wrong. Therefore you need to go with the fork, don't you. And actually physically look at what you are doing. So we are using pretty robust techniques that most people are using, but I'd be very cross if people did what I used to do which is sometimes sit in the office and look at my computer, because you have to be careful. It's common sense. There's nothing different about that.

Int: So in terms of the labour required to get around and actually check in person do you kind of see...

C: That's what the growing manager does, the farm manager does that, and of course it's a challenge in itself to see all the fields. Having said that we are not the only people that look at the fields, we do use agronomists across the range of crops. They will feed back their view when they are in the field. You know what I mean, and so we are not the only pair of eyes on the ground. We also have a marketing group who also go on fields to sample etc. who will feed back. So there are more than one set of eyes, but it is basically the manager, and irrigation teams are pretty good at... you know, they have an understanding of what we are looking for. But that is the job of the manager and that's why the manager is... we kill our managers here and which is why we are looking to haul a crop in at the moment. I have to say, if it's really dry, really dry and hot, irrigation's easier. Because in fact, if it's really dry and hot we can't over water (28:17). Because if we get field rotation going and you know that in fact as soon as you've finished that field you are going to go that field, that field, that field with that gun, you know that you need desperately to get back to the first field again and you are a bit late. Right, because when it's really dry... Actually talk about water risk, some of our risk is not the volume of water we've got but the amount we are allowed to take over a 24 hr period. That is actually something I should have pointed out. A lot of licenses, we may have enough water, but we can't actually take it at the speed we'd like to use it. That is a constant juggle. Because every single license we have is a different daily rate and it is quite a job for us to keep on top of that so that we are not breaking the rules. If that makes sense. We have to monitor that, daily almost and it is actually not all that easy. Yeah. So there's two things with irrigation; it's the amount you've got available and the speed your license allows you to take it. Now where we got... that's the one beauty of winter reservoirs. You've got winter reservoirs they are not interested in how quickly you take it out of it. So there's one advantage. And so this farm that has not got a bespoke winter reservoir, that has a lot of winter water, would benefit from a winter reservoir, which means the one that I've got that I've been talking about... Probably I should... we never used to have a problem with rates, but we are finding that becoming a bit more of a problem. That's really where a winter reservoir does come into it's own, because they are not interested in how quickly you take it out of that reservoir. That would benefit this business here because we are getting to the point where at times we are restricted.

Int: I realised I haven't given you our definition of resilience, which I should have given you at the start.

C: Oh right, what is resilience? Yeah?

Int: What the project understands about resilience is that a resilient system is one that is able to absorb and overcome shocks and learn and self-organise in order to adapt to changing evolving conditions. So I guess thinking about the water risks that you face, do you feel that your resilience to them is staying the same over time or changing.

C: Definitely over time there appears to be more threat to it, because the increase of environmental pressure on requiring water. It is very frustrating because you cannot tie down the lobby that is suggesting that to what they actually need. Therefore it has been a moveable thing. What I'm

saying is you give them a bit more hypothetically, well then they want more. So the best thing is not to give them any for as long as possible, so that when you do give them some you are further back on that I want more. This has been the approach, all the farmers lobbies have done that. You give them a little bit then they want more. The best thing is to resist giving them anything for as long as possible then you are further back in that chain of them wanting more. It's a psychological thing. I mean, and I'm not knocking environmentalists by the way, they all have their own views. But um I mean some of the environmental legislation is just ludicrous. It is impractical and it's not actually aiding anybody let alone the environment, but there you go.

Int: Are you kind of referring to the environment agency?

C: No, no. They have to work within the rules and I think they are actually reasonably understanding that some of the rules they are having to instigate are pretty stupid in certain situations. The rules themselves aren't stupid. Or rather, environmental legislation itself isn't stupid, but it is one bit of legislation that covers the entirety of Europe, doesn't it, the WFD. Well, a tax law in the UK wouldn't work very well, I would suggest, in Greece. Would it? Well it doesn't. Trying to have a rule that is European wide is tricky. And I'm not blaming the EA for that. No I'm not blaming the EA, in fact I find them really quite refreshing and open and honest about it. So no criticism there, I'm not criticising them. I'm not even criticising environmental lobbies. But it is frustrating when you can't get the lobby to say, "Well, we need 3 thousand cubic... We need X". Because they daren't say that because really they want all of it.

Int: Well, it's a process of negotiation isn't it, so people keep their cards close...

C: But I mean, to be fair, we've done some changes to licenses and actually their token back was to try and be helpful within the rules. So I've got no criticism there. I'm criticising the bureaucratic situation in. But like I say, I'm an old boy aren't I?

Int: So how do they influence your on farm water use. Is it just really the threat of...

C: Not really because as I say we've been lucky. When it has been dry it's rained and things like that. We had a restriction a few years ago, and they put a restriction on surface water and it didn't bother, we'd managed to cope with it. But if they'd really pushed it too hard I'd come and challenge them why they think mine is surface water, given it doesn't flow anywhere. Yes it's on the surface, but it's not a river. It just sits there and in fact the only reason it would go out to sea is if I personally chose to switch the pump on. So it's not a flow. They can't be worried about flow because it doesn't flow, because I don't run the pump in summer. So why were they worrying about it. So there's issues like that but it didn't come to that. Um, but then that's my failing because I should be honest really and have them out here and say, "look, I've got all this water out here and I want to do this" and they'd probably be very helpful. But I'd have to invest a lot of money, and at the moment I don't need to invest it because I can do everything with what I've got.

Int: So the reason you haven't got them out here...

C: The reason I haven't got a winter reservoir purpose built... they probably won't like my winter reservoir, probably, because it is fed, you don't pump into it, it's naturally fed, not by coming up from the ground, but flowing into it through all this drainage system so it comes in, fills up, and then goes out the other end, but however you look at it the actual storage container bit is fed during the winter because it's fed over it. In the summer it won't fill up in the summer because the levels drop and that's fine, but it's there. Sorry, the reservoir doesn't drop, but what feeds it drops. 34:58 In fact, what feeds it is my normal water courses, which I irrigate from, therefore it's not running then because I'm using the water. Do you see what I mean? It's quite a... And they won't like it and I'll probably have to prove a few things which I probably can't be bothered to do at the moment.

Int: So beyond getting your winter reservoir functioning as you'd want it to, and that might involve a few negotiations, are there any other ways that you can think of that you might be able to increase...

C: Well, basically, the annoying thing is, everyone keeps saying that we've got to be more efficient with your water. If we were more efficient we'd use more, not less. That's the problem.

Int: Why is that?

C: Well, I've already told you, when we really need to irrigate, we can't irrigate enough to keep up with the technical demand of the crop. So you could argue that if you are efficient you'd be irrigating enough to achieve maximum growth rate... Wouldn't you? What do you mean by efficiency? You tell me, what I'm trying to say is people are often saying to me, "you don't know what you are doing with your water", but what I know is, because I've had people like yourselves look at it, that actually, if we did know what we were doing with water we'd actually be using more water, not less. So it doesn't actually help anyone does it? Not if you are trying to save water?

Int: Well, it depends on what your objective is.

C: Because when we put in for license renewal we have to justify water and I know that we use acre inches well below the EA's guideline. Total acre inches. If I used the EA's guideline they might be tripling my license. Do you see what I mean. So I'm obviously being very efficient with water, but not very efficient with growing my crop. So which efficiency are you interested in looking at? That's a very interesting point I would say.

Int: Which one are you interested in/

C: I'm interested in growing quality. Quantity doesn't mean anything. If you haven't got the quality you are bugged. So quality's prime. Quantity and quality's brilliant. But if I'm going to forgo one I'm going to forgo yield but have the quality.

Int: And so you are not worried about increasing your irrigation efficiency in order to reduce the costs of your water or in order to get more yield...

C: Sorry...

Int: Well, it wouldn't reduce the costs because as you've just explained you think you would irrigate more if you were more efficient.

C: We might get a bigger return. I'm not saying we are vastly under-watering, and with a lot of the crops we grow we haven't got this finite... so if you have to water another week to get to the yield it isn't a disaster. It is at the very front end when we get started, and, because we plant everything very quickly. If we take an early baker, they all go in within a three week period, but actually are harvested over 8 weeks, so for the early ones for maximum growth rate to get started to be a little bit slack on the total water used and the growth rate may be slightly affected... doesn't matter because it has long enough to catch up on yield. And I've already told you, growing yields beyond a certain amount, even with potatoes, will give us quality issues. It's just the way the ground is, it is infertile ground and if you push something too hard it tries to grow too quick, and certainly with early bakers we get a lot of internal or rust spot problems, you get a lot of issues particularly with the internals, and it can't get all the nutrients it needs and therefore you get problems internally on the potato. So you've got to be cautious of that. So maybe under-watering is of benefit for the quality there. I'm not saying we are severely under-watering, I'm not... not... But we are certainly not maximising maximum growth rates.

Int: Are there any other irrigation related interventions you can think of that you think would increase your resilience to water risks?

C: Yes, right, scab resistant varieties of potatoes, right? That's something we've really got to get on to. Because if you can increase the scab tolerance, then for us, for our specific problem here, where we do tend to use a bit too much water at the front end, just for quality, and therefore you could leave yourself short for quantity, that would be of benefit. We are certainly looking at that now, we are going for varieties that have more tolerance. The problem is getting them accepted by the customer. Because there are... an example. In small baby potatoes Peer is king. Yeah, possibly. Yes there are a whole plethora of other ones, but the ones any customer you can name, whether it's M&S, Aldi or whoever, will take is Peer. Now they will all have their little favourites on the side, but if you grow one of Asda's favourites, Tesco wouldn't even want to know it. Which means that if you've got too much for ASDA, they won't take it. So for us, Peer is the Rolls Royce; all our

customers, it's one of their preferred varieties for that type of crop. Peer is not brilliant on scab, it's not a disaster, but it's not brilliant. So if we could get a replacement that was really scab tolerant, and we are working with all our customers, obviously, Waitrose, Tesco's all of that, and I'm not too worried if we get one that happens to suit Tesco, and one that happens to suit... at least that's a starting point because at least you can grow an area specific for them and have some Peer in the mix for what I call that multi-use. We are looking at that. I mean that really would be a breakthrough. But the problem is it would only be a breakthrough for a relatively small part of the nation's potato. So getting the research for that is not easy, because we are a pinprick. The sort of potato that we grow here, in the national... We are very important for a few weeks in June and a few weeks in July for bakers, very important in those few weeks, but the rest of the year we are just a drop in the ocean. You know what I mean. I'm talking about our whole group by the way, not just me as a farm. The group we have in [REDACTED]. There are three groups in [REDACTED] and our total combined output is really important in [REDACTED] for those specific little slots. The rest of the year we're a drop in the ocean and quite rightly, we're not doing anything different. So obviously yeah, to get the... Customers are helping with that because obviously it's in the interests of the packer who supplies Tesco, particularly if there's two of them, for one of them to come up with a variety that they really like, that'd be some kudos for them, and if they can come up with a variety that Tesco really like and scab tolerance, that would be brilliant, but it's not their top of the list of priorities is it? They're more interested in finding a variety that the customer likes, so they can say, "This is OUR variety". Not mine. Ours, as the packers. Branston's variety, that's what they are after. It doesn't mean it's any good for me as grower. But if we can persuade them to make it quite blight tolerant, preferably PCN tolerant and scab resistant all in one go as well... Well, we'd be laughing. We have a variety that does most of these things, which is really annoying, and we've grown it a little bit, and it's been received okay, but we cannot just get it to break into, um, you know. But it might come. We are working in it. So yes, there are things in terms of how we grow crops and the way we grow crops that could be more water efficient. And I'm not sure we have found them yet, but certainly that should be top of our list, because you are asking me, if we believe there is a water issue, and ignoring my position here, if we look at [REDACTED] and I look at other areas, yes there is a water issue, given the current policy and understanding of water requirements. So that's not me sitting here and saying I'm not bothered. That's not true really, I understand there's a water problem, so we do need to look at varieties in particular, and that's probably where we are going to get most of the benefit from, I would think. Yes it's not doubt our centre pivots will use less water than our rain guns, and it's better to be fair. There's no doubt about that. Booms used correctly would be the same, but you've got to be careful of booms, they do apply water very quickly. It's the way they work, so in fact you've got to be careful with how you use them because they can, surprisingly... I mean, it's a better way of watering, generally. But I've seen them not be very effective at times as well.

Int: And do you prefer the flexibility that you get with irrigation systems that you have to move around.

C:[Guffaws] No! Centre pivots, I mean you talk about labour, I could sit here if I chose, as it happens I have to go up to and switch it on, which is a bit of a pain, but I suspect I could even link it here [gestures to mobile phone] and go push couldn't I? I suspect. But that's a 98 field there, and you push a button, and 36 hours later if you are putting on 20 mls that's done. And I've done nothing. I've just sat here and watched it haven't I?

Int: So why wouldn't you expand that?

C: It's not great for the countryside, hedges what have you, if you look at that it's a big 98 field, we've got another one here that technically could water 180, but it actually only waters 90 because we don't have land that the other half moon could do, but if we did we could take the hedge out but then the hedge has to come out you see and you've got a huge great field. It's not great. There are places they are very suitable. [REDACTED], because we are trying to put hedges back in the main, to be honest with you.

Int: To stop soil erosion?

C: Yeah I think so, well we've never had to take any out, ours died with Dutch Elm, and I think we've not put enough back I would say. We had a big project for one of our farms which was going to irrigate the whole farm with a moveable linear, but that didn't... You know, it was a great idea, but it didn't fit with the format of fields and hedges really, to take them out it just wouldn't have been right. I mean it would have been great for me as a farmer... But we do like our countryside you see I mean, we are not trying to destroy it. In fact we haven't actually removed a hedge virtually since I've been here. In fact we've been doing the opposite. What we have done is taken out dead Elm, grubbed it out and replanted it. We've done that a lot, we should have done more. That's what I'm saying to you. Because we've still got dead Elm hedges now... we actually did one the other day, took a hedge out and I of course had the local Parish on the phone "Oh what are you doing you are destroying our...", but as I pointed out it's dead, it's all ivy. Yes we are going to replant it, don't worry, and then we got a nice letter back saying "Oh that's alright, don't worry". But they worried that we were just taking out, which we're not because we don't want it out. I don't want it out any more than they do, you know. Erosion and wind, we are very windy here... The sea's over there you know.

Int: So it could make you reduce your resilience in another way?

C: Yes, yes. Runoff's another issue we had and irrigation runoff is a touchy subject really, because we do appear... I'm not a global warming fan, but what I will say, is we appear to be getting more extreme events. And um irrigation followed by heavy rain even though you've been clever, you've been looking at the forecasts, you know hang on a minute, there's rain coming, perhaps we'll hold off. But suddenly we'll have 2 inches of rain when it hasn't even been bloody forecast, and you've just irrigated the field and half of it ends up in the village. Well, we do try, but there are more of those events happening. Yes we take measures to mitigate them; the way we plant crops, things like that. Definitely the way you plant a crop can save water of course, to avoid runoff and hold it in the field. [46:29] We have a machine that puts um... You know there are techniques. If you've got a slopy field it's tricky, whichever way you plant it, because you know. But we've got these things which create, forgotten what you call it now, they sort of dig a spade out so that the water collects and sits rather than running off the field. So there are things to do that. They are minor

improvements. Trying not to water the road... um... helps. We are by no means perfect and there is room for improvement on water efficiencies in a whole host of... We do think our pumping systems are quiet efficient. They are all now computer-controlled, variable speed, only deliver what you want. We used to have systems that quite frankly they were flat out, so you'd have pressure in the pipe that wasn't required, whereas now they slow down, they switch off, they start up on their own, that sort of thing. They are leak protected. But I think you will find that most farms locally have got those systems, you know. That's not unusual now. Whereas when I first started that was definitely unusual, and anyway, they are more efficient for energy and use and that means more capital costs but less running costs.

Int: Thinking a bit more broadly about the fruit and veg system in the UK as a whole, do you think it has changed over time since you've been growing?

C: In what way? Are you talking irrigation-wise or?

Int: Just generally.

C: Yeah, it's become less fun!

Int: Why is it less fun?

C: Oh, it's bureaucratic, um.

Int: This is farming to produce FF&V...

C: More bureaucratic right top to bottom. I mean the audits we sit through now... it's unbelievable! We also have a pack house here you see, so we have a BRC audit for the pack house, we have all the Nature's Choice audits, we have all the LEAF marque audits. I think we have about 12 audits now... bureaucracy. And they are all the same! So the bureaucracy around the whole thing... I understand "food safety" I'm not going to knock it, but it's not my bag. Because I understand that most audits it's about proving that you've actually done something which you have done. And then when you've proved it you've got to have another bit of paper that proves that you've proved it! Literally. And it's just a bit tiring really. I mean, that's why I employ professional people to do those jobs.

Int: So you mentioned...

C: But look, I'm not going to change it just because I don't like it, I'm just saying that's the way it is, so it's become, it's just overloading. And of course we can't afford the infrastructure that goes with it. So that's just a decision that we have to make. We are running a pack house and we are seriously thinking, actually... Perhaps we shouldn't because it's just overloading the number of staff we've got here, and yet to put in another member of staff just to look at that sort of stuff doesn't make it pay.

Int: And how would that change things for your business, if you had to rely on packers outside of your business?

C: Well, we are doing it with particular crops because we've been asked to do them, and probably we would stop growing them because they wouldn't be affordable. The only reason we are doing them is probably because we can pack cheaper than a packer can, therefore we can at least get a little bit out of... [REDACTED] is classic. We grow the nations [REDACTED], you see. So if you buy a [REDACTED] in a supermarket it's come from here. Even in Scotland, even in Ireland, it's come from here. But it's buggery all. Even in the summer we'll be sending a lorry out and it will have three trays for goodness knows how many stores. You know, if that. But the problem is it is becoming an unaffordable... But I don't think, supermarket-wise we stop packing [REDACTED] I think they'd stop selling them. Years ago they wouldn't never have done that. Now they will. Now they will say, "uh, well, if it's all too expensive we won't bother". So that's a classic example as to why we still have a pack house, because we do the [REDACTED]. At the moment we are still making margin on the [REDACTED], so I'm not saying the pack house is going, but it's putting a lot of pressure on our general infrastructure of the farm whether it's to fulfil the needs of all the different people who want to come in here and tell us about what a pack house should be and what have you and do the same audit over and over again. So we have a BRC audit that checks all that, but then we have a Nature's Choice or Tesco-whatever-they-call-it nowadays. They'll still want to do it even though it's already been done!

Int: So those accreditation schemes... Do they...

C: Eugh, hundreds of them. I can't even list them all because they all change their names since I used to do them. When I used to do them I'd sit in here and I'd be a bit like you I'd be a little bit er irritating, but you can't get away from it now. So we employ an extra girl just for bureaucracy for farming generally, and now she can't cope, that's the point I'm making so. I'm damned if I'm employing another one.

Int: So do those schemes or the retailers put any pressure on you to influence the way you....

C: Well, I can't supply a supermarket without doing a certain amount of auditing, I understand that. I could supply a supermarket without doing BRC, but then I can't pack for them. And then their packers might not want to do the crop and then I'd lose the crop, so that's life. So if I make a decision not to do it and no one else wants to pack it, then I'll just not grow it. It's not a problem is it?

Int: So, specifically in terms of your water use do the retailers or the schemes impose any pressure on you to use water in a certain way on farm, or to reduce the amount of water you use?

C: Actually, because I haven't done er the farm audits myself recently, I'm not sure. I think we have to show a certain amount of... They certainly want to know how we are monitoring water, how we are determining the application rate. They want to know about those sort things... Are we using good practices in the field, etc. etc. So they want to know... I'm not saying though that THAT is particularly onerous. It's the sort of thing we do anyway, and they are not really looking for a triple check that we are doing it. They will have a look at the computer to get an idea of how we are doing it and that's fine. I've got no problem with that. That sort of checking I've got no problem with. But there's some stuff you couldn't even imagine they want to know about.

Int: And who do you see as your main competitors, are they other growers in this area or...

C: Well, as I told you actually I mean, there's 30,000 acres just here which we market together, so we do compete, but we are actually competing and supporting each other at the same time aren't we? Because we have the same goal. And then there's another group of a similar size... You know [REDACTED] has actually become sort of controlled by three different groups. If you take potatoes it's three different groups, maybe four, no three I would say. And actually those groups tend to talk to each other too. In potatoes because we have a point of difference. Other cropping is different and most of the veg cropping in [REDACTED] apart from our group is actually done by other growers who rent land, you'll find. Most of it, not all, but the majority.

Int: And in terms of imports coming from elsewhere globally, do you feel...?

C: Well, our market is under threat all the time because you get stuff here really cheap, and the haulage from Europe to UK is extraordinary. I mean it is amazing how Holland can produce onions so cheap. I suspect they can't. But that's beside the point. So there is a big effect on the onion market, that's for sure. You really need nice nice nice nice, that's where you really need closeness... I mean we have one customer we deal with for onions who's just brilliant. He really understands farming and us, and his returns will always be the best returns we get, but we have other customers who are not so brilliant and perhaps not so honourable to what they've said. Oh no, that's not fair. But anyway, I'm just commenting, there are different customers and what have you. But I mean potatoes, yes we obviously we always grumble when all the imports are flooding in our smalls market in the early season. But they need to have imports at the start though, the question is how they control the flow when they no longer need it. And sometimes you could claim supermarket will use over-ordering of foreign to delay entry into our market to try and keep the lid on price. Because when we come into market at the end of the storage season that's when the UK market looks to have a step up in cost and value, because it's been driven down mostly, depending on the year, sometimes there's a shortage and then the price gets driven up even before we start and it's quite the opposite then, they are trying to drive it down when we start, in this ridiculous way. But if it's

really low when we start we are trying to get it up aren't we? And sometimes I feel they are clever with their imports: "Well, we can't start yet because we've ordered an extra...". And I think, well, we've been telling you... Because we do actually let our customers know: We will be starting on, you know at the beginning of... But you've got to look at it from their perspective. They've got to guarantee supply, they've got to, you know I don't suppose I'd be much different in their position.

Int: And do you think consumers are bothered at all about the amount of water that's use to grow their fruit and veg?

C: It is frightening isn't it? The amount of water we use to grow potatoes. And I must admit I've forgotten the figure. You probably know because you've come some research on it, but it is quite frightening. You would think it's a terrific waste. When I saw the figures, which I do think Cranfield produced,

Int: But the water that is used in the UK is less problematic compared to water that is used in much drier places.

C: Yes. I don't think that would upset the consumers, right, what would upset them. So the consumers would say, "Jesus, you are using 100 kilos of water to produce 1 kilo of potatoes..." (Hypothetically... I don't know the figures), "That's ridiculous!". But they wouldn't be worried if you were using 200 kilos in Israel to produce a kilo would they?

Int: Do you think they should be worried about that?

C: Well, people in Israel should be. I think probably they should. I think I've got to be cautious, because we are quite big users of water, you know if you go to other parts of the country if you take Lincolnshire, they would use far less water I'm guessing per tonne of product than we would because they have naturally more water retentive soils than we have. So I've got to be a little bit careful when we place that argument because we might be putting ourselves at a bit of risk because I think we do use a fair bit of water here.

Int: Do you think it should be just up to governments to regulate that water use, or should consumers be informed at the point of purchase and take decisions that they don't want their consumption habits to be having a bad environmental impact in production locations?

C: Yeah, okay. There is certain ways that could go, I agree, I'm not denying it, because the consumers, I think a significant number of consumers, but not the majority, would be worried if they thought they were destroying, or creating deserts or deforestation particularly. I mean they've been

trying to get that message across about deforestation. I think people generally think deforestation is a bad thing, whether they feel they are partially responsible for it is another matter. Hmm.

Int: Okay I might have gone through all my questions...

C: I'll waffle for ages.

Int: That's no problem... Okay, the final question...

C: The fresh market is diminishing. There's no doubt about it. The fresh market, regardless, there's been great work done by chefs trying to encourage people to cook and what have you, but the fresh market generally is diminishing for everything. There's no doubt about that. Well, it's declining isn't it? It's being picked up by ready meals or prepared. Now you could argue there's some prepared stuff that's still fresh isn't it. You know, if you've got a salad in a bag, in theory it's still fresh. But I call fresh when it's just sitting on the shelf as we've produced it, and that has declined there's no doubt about that. Having said that, our aim is to try to maintain, or to try to be good in that sector even though it's diminishing. We'll hopefully lose other people out of it, but we'll see won't we.

Int: So do you think that's a trend that's likely to continue?

C: Well, I'm told it is. I don't fess to be an expert, because for me, we don't buy anything pre-prepared, but I'm just an unusual consumer, obviously aren't I.

Int: I try not to but...

C: As it happens I went somewhere the other day and I had my first McDonalds which I really enjoyed, I really enjoyed it!

Int: Your first McDonalds ever?

C: No, no, for about three months. And I really enjoyed it, so I'm not knocking people that buy that sort of thing, but it's rare. To be fair I'm sure we have bought a lasagne or something that we've got in the freezer if we are feeling really lazy one night, but in the main we are cooking all the time, because we just don't find it difficult.

Int: And you have the labour available?

C: I do, and I prefer it. But that is not the whole wide. Just because maybe my demographic... The people I know will say, "Well of course we buy fresh food". But they are not, they are not the busy housewife in London, or...

Int: I definitely find it difficult - I work full time and I've got a small child and...

C: You've got all the issues that stack up to mean it's not easy for you to do, and I'm not knocking it.

Int: No, I mean I'd much rather cook everything fresh.

C: Our information is that the fresh market is becoming smaller. Certainly it appears that way to us anyway. And I've told you, as a market group we are looking more... We would never have done before, but we are looking to see if we can target some specific markets in the prepared food, catering or whatever... different from fresh. To see if there's something that we can actually get into that we can actually make as a sensible option for us.

Int: And what would be the implications for on farm water use if you were not having to produce to that exacting quality?

C: Well, you say, you see the trouble is we still we be... we are trying to find those niche ones that still require good quality. That's what we are trying to do, because the others are too low at the price range for us to consider. So we are looking for those to add you value... all the things we are doing for the fresh market, but also value it in the prepared. Yes there will be slightly more tolerances on skin finish I'm sure, in certain cases, but I actually think we'll be setting out to grow the quality right, but they may have some use in some slight dilution of quality. I think we'll be setting out the same, I don't think it's going to make that difference.

Int: At this point you've I imagine invested a lot in producing that quality... So you wouldn't then want to...?

C: We are probably being naive and won't find those outlets but we are looking. We'll try a few and see how we get on and we'll see how resilient their uptake is. The catering market is something that we find intriguing. Somewhere there, if you can get into it in the right way there is margin there you see, actually. So we are looking strongly on that. So we do supply some catering markets now with potatoes particularly, we have our own sort of branded product, so we are trying, I wouldn't say it's taking off, because that's not right. But we are exploring. Yeah we are in a bit of change here. Because I think economic situation has forced a bit of change and um... er... and need to be really

cheap and really good at what we do, and I'm not sure we are good enough or cheap enough. No, I'm just being... There's no point saying we are brilliant and we are still losing money, because I'd really be depressed then wouldn't I. Because you've got to have a goal. If we can do this a bit better and save a bit there... you know....?

Int: So you are trying to forget some new relationships at this stage?

C: I'm not the best because we have gone through a lot of changes in this business, because we sold 2000 acres which was a huge erm change for us. I had never sold a piece of land in my life. And I'm not going into the reason for it. There was a reason, which was not economic by the way... just other reasons. And it has actually sort of affected the management and the structure here because it actually took us a whole year to complete the deal, which is ridiculous, so it was very distracting. So I think we've taken our eye off the ball a little bit as a business, so we are just trying to refocus that now. Having said that, the plan was to sell it and cut our size. But we still seem to farming most of it, which was not my plan and I think it's turned out to be a mistake. Because my plan was, yup I can see veg markets just for a period of a few years, really under pressure. Let's downsize, regroup, go again.

Int: So would you be trying to expand or develop new money-making uses of the land?

C: No, I want to simplify what we are doing, just grow the crops we really want to do and which we've got more confidence in. Cut out some of the peripheral work we've been doing and go from there.

Int: You wouldn't try to diversify out of agriculture?

C: To be fair, we are not in the best area for diversification. That doesn't mean you can't do it. But I've always, personally, I've always been a farmer. I've never had an income outside of farming. It's been farming and it's looked after me very well. And that's what I want to do. We're always looking at other things. We used to have a riding stable and what have you. We actually sold it. Riding stable and 120 acres of cross country course and what have you. Ah it was great fun but it never makes any money if you know what I mean. But I'm not into that, so... But where the youngsters are now coming through, ah that's entirely up to them. I'll support it if it looks right.

Int: So you said you've recently sold some land, but over time, since you began farming has it always been the same.

C: Christ no! I could give you a timeline for that! But when I came here we were um, 1400 acres.

Int: And then it's expanded?

C: And then we bought about 2500 acres. And then we rented quite a lot more and now we've sold that 2000 acres.

Int: So what drove that process of expansion?

C: Do you know, I don't know. Some people might say I was ambitious, but I don't know. Chance I think.

Int: Opportunity?

C: Actually, the first time we bought it was because someone said "So and so's for sale", I said, "I didn't know that"... And it was actually the son of a chap we'd farmed for... we'd actually farmed his farm. He was one of our landlords... His son came to me and said, "Dad's thinking of buying it". I said, "oh yeah". And then he said, "We've decided it's all too much". So I went and ended up buying it over a cup of coffee. That was a thousand acres, and a few days later we bought the rest of the farm which was 850 acres.

Int: And do you think it's easy for farms to stay the same size.

C: No, this is a slight concern. Because we've now technically shrunk. Because although we are still farming the majority of that land I've told you we've sold, we won't be in future. So we've had to shrink back. But with the problem we've got we've just overloaded ourselves because we've done all the change to shrink back, prior to the sale, by natural wastage actually, and then we've kept the land so we are actually overloaded. And that's part of what I'm saying, that's why we are having a refocus, because we've really overloaded ourselves. That was a mistake and I shouldn't have let it happen. But the team that actually do the work felt it was a good thing so I supported it, but I shouldn't have done. Tactical mistake, mine really. Not great. Move on, another year. You'll notice I'm not that bothered.

Int: Live and learn?

C: Oh no I don't take life too seriously. Luckily we've got a very resilient business so we can take a few years' losses and what have you. I don't call it a disaster.

Int: Does that mean you keep a certain amount of financial float to permit you to have a few bad years? And then... I'm just wondering about how you maintain...

C: No. We don't have any money. We never have any money, but we've got huge borrowing capacity. Which we just make use of. To be honest with you.

Int: So you just have to kind of ride cycles of...

C: I mean look, I don't take life too seriously and I don't take business too seriously. All I know is that I want everyone to enjoy themselves. So we want to just simplify the business a bit, de-load our staff, and make things a bit more sustainable. How that will affect water will depend on what cropping we end up with. So we could have some significant changes over the next 18 months, on our cropping, to achieve that simplicity. For them to look right - now we've got something that works that we all manage and everyone's fine with. And then we'll look at those niche opportunities that may add to the party. So we want to come back and just start again really. We've got a very young team out there. You know, they've got no experience, and I'm getting too old to show them. But why we expanded, I don't know. I honestly don't know. It just happened.

Int: Is it generally the pattern that farms are getting larger?

C: Yeah I think all of them have. Because XXXX and XXXX started the marketing group I'm talking about and they were I don't know, 2000 acres, we were 2000 acres. I think they are farming 10,000 now! In various places, I don't know.

Int: And do you see that trend continuing into the future?

C: I don't know, maybe. I think it depends on the people in charge. It's a lot of work, and a lot of risk. And also, there is a tendency... we've had some good years. This is what you are forgetting. We had a run of probably 15 good years. Right. And even if the odd crop went wrong, it didn't matter, you know? The last 2 or 3 years, and I have to be careful, in our case we've not been sharp because I think we've been a bit distracted from the sale and one or two other things. I don't think other people suffered quite so much in our... whatever. But there certainly is a trend of it not being too brilliant. And um, um. What was your question? I'm sorry I wanted to answer your question!

Int: I was just asking whether you think...

C: Yep, Yeah, the question is that I think, oh I know what it was yeah. The problem is because the agents, quite rightly saw that things were going quite well, their expectation for their landlords was

quite high, because most of the expansion has happened not with purchase, it's happened with contract farm arrangements.

Int: Right.

C: And their expectation is quite high, and I think contract farmers are beginning to struggle to maintain that expectation for their landlords and their agents. And there has been the odd little change here of quite significant areas of land from one contract farmer to another.

Int: So contract farmers are generally on a bit of a smaller scale...?

C: No, no. We are contract farmers, we contract farm 3,000 acres. What I'm saying though is the agent, the owner of the farm that we are farming for, the expectation of money is gone a bit inflated. That's what I'm suggesting.

Int: Okay, so the rents are a bit high?

C: Well they are not rents but they are effectively rents. You don't know what contract farming is. Contract farming technically there is no rent involved but trust me there's an understanding of profit for the owner. An understanding of profit for the owner.

Int: So you are saying, we'll give you a certain percentage of...

C: And I'm suggesting that this is making it really uncomfortable for being the contract farmer who actually does the work for them. It's becoming a little tight.

Int: So there may be a contraction?

C: So there have been some changes recently, locally. You know, someone, one company has actually given a farm up, which would never have happened a few years ago. Because he can't make it pay. And that's unusual. But that's again, that's cyclical. But, water. [REDACTED] has more water than people give it credit for. It's just in the wrong place. Are you aware of the holistic water project that we are running down here at the moment?

Int: No.

C: No? Because as I was telling you, we've got this pump here that pumps all the water out to sea, we've got a similar one at Felixstowe, that pumps a massive amount of water to sea. And in fact, the, the English Nature are complaining that the water when it goes out is washing away Saltings because there's so much going out there. So we've put something together and hopefully it will come off, where we are going to catch that water and use it for irrigation, by piping it inland to farms well in land for them to winter store. Which 1) reduces the erosion or whatever, you know what I mean? and 2) is making use of what is technically waste water and won't affect the infrastructure and the available water where they are. It will be going inland far enough to where they can't get water but that's involved getting a whole group of farmers together to allow pipes to cross their land. It really is quite a complex thing, but it looks like it's going to probably come off.

Int: How did that project get initiated?

C: I went to the first meeting, someone suggested, oh I think it all started because I told the minister for agriculture when she came down, and she said, "oh [REDACTED]'s got no water", and I said, "No, no, [REDACTED]'s got plenty of water". "What do you mean?". And I said, "it's got tonnes of water", and I told her about how much we pump out to sea every year. Which is, you know... because with all the pumps we pump about, I think it's something like ten times the water that is used in the entire agriculture, and technically waste water.

Int: This is during winter when there's heavy rains?

C: She came down to [REDACTED] and it was in the middle of a drought, and I said, "No, there's tonnes of water. We are pumping today out to sea... Today. No, sorry, YOU are pumping, or YOU are paying for water to be pumped out to sea, today!". And I think, because I'm chairman of one or two things, I didn't start this process, but I think it got picked up by one or two ladies at [REDACTED] County Council and they thought, "Hang on. This is ridiculous. We've got flooding up at [REDACTED]. Water restrictions on the same river, here. What the hell is going on?". You know? That's what the whole thinking was. One minute we've got far too much water, the next we haven't got any. There's something not right here. That's what the principle was, so it was a similar thing, and so we are doing this project with the river, which is stop flooding up north by holding water back, having some places that water can run into and come out again. They are having a few teething problems up there because they dug some of these... fine, but they forgot... (laughing)... they are stupid. But they built this place for water to run in. Okay? So it runs in, but it needs to run out again, over the next few days. But what they have done is it fills up, but when you get the next massive rain, well it can't go in because it's full, so you are not solving the problem are you? Because it should have run out in between the two rain events. Ha! It's alright, they had it designed correctly, but forgot to put this discharge in that would regulate the flow. They'll solve it. And down here, our chairman of the internal drainage board, which is one of the people who have to pump water down here, so instead of us pumping it out to sea, we'll pump it into reservoirs. And out to sea. Both. You know.

Int: Did abstractor groups feature in terms of how that was communicated?

C: Yeah, well I was there because I'm [REDACTED]. I got asked to go to the meeting because I'm there. That's where we discussed the holistic water... we had no other goals at that time. The first thing was, can we choose a catchment which has all sorts of issues. All the issues you can think of: Flooding, shortage of water, Anglian water taking a lot, big farming usage, and we chose the river and then we said, well, what can we do to try to solve the problem and so we've done some work up at [REDACTED] where it floods all the time. And we've got much more to do, but we've started. And this project is to... coupled with the fact that we were pumping too much onto salt marshes and eroding salt. It all came together as a very good project, and it's been technically run by the county council, so I take my hat off to them. And obviously it's been using our abstractor group ([REDACTED]), but we have a manager who's deeply involved with all of that. And the internal drainage board, which is responsible for removing the surplus water (and I've been and checked on that as well for my sins, I'm getting far too involved), but the idea is it looks like we might make a runner of it and that's really good. If we can get the funding, and that's the biggest thing. And we are just trying to find out where the synergies are. So are there savings to the drainage board which could be used to help you know. So it's quite complex. But the water's there. And that's a case of getting water from some place where there is water to somewhere where there isn't. Which is logical. And that's what I was trying to say to the minister. [REDACTED] isn't short of water, it's just in the wrong place. And that's what it is. It's in the wrong place.

Int: So it's about having the right social network in order to be able to get everyone to agree, in order to then be able to put in...

C: Yeah. That's not easy. Luckily we've got a fairly tight knit group of growers happened to be there. There's been one or two less interested, but I think they didn't want to look to being awkward. I mean there's a couple I think we've got to pay an easement to put the pipe across their land. It's a bit disappointing, but that's life isn't it. Whereas others have said, yeah, okay. It might not happen, because like I say it's fraught with difficulties as you know. But we'll see, it would be nice to do that. And of course, obviously we could do something here, as I say. Erm. And the agency, to be fair the agency are very pro. We actually put in a licensing application to put in a huge winter reservoir between two sea walls. Because we've actually got a place where there's two sea walls? So it's already a reservoir. It's there, happens to be. Don't ask me, but it's there. And the idea... they've put a brand new pump in at vast expense and they've actually put take-offs for us, so that instead of going out to see it can come into us. So they are there ready. Unfortunately the locals didn't like the idea, that the people who live on [REDACTED], which has the North sea ten yards away, felt our little reservoir behind them by 500 metres felt our little reservoir behind them was more dangerous than the sea. Extraordinary! They kicked up such a fuss. We couldn't be bothered to push it really. But we'll relaunch that if we need the water. Hence my slight being a bit blasé about water. Because I can see, I know it's there. So I'm being a bit. Now, if you talk about a farm I farm up north, which is not my farm, I'd be far more concerned there, but yes, I persuaded him to invest in just the sort of things that you'd want him to - he's put a winter reservoir in. He's got lots of sources. He might well put another in. So I'm not negative doing things, but he has to because he's got no option. But the farms here, happen to be right next to the sea where these pumps... we have a

pump on my farm that... because I don't own this farm by the way, I've just run it for years... I own one just up there. That also has a pump with water that floods out there. So again, I'm quite relaxed. So we are using summer water, and luckily have fairly big licenses. If those licenses became unsustainable for some use, either because the environment agency says you are taking too much in the summer, or because there's not enough there, or because my licenses isn't big enough. At least I know I can dig a hole, get the winter water and fill it. I know that. And I've sort of got this argument, why do it until you need to? Well, it hasn't happened in the thirty years since I've been here. Don't forget we've been talking about water shortages since I started I think. So it hasn't happened yet, but I think it will happen, I think it will. I can see this farm will build two reservoirs, yes, it's a case of when. But I'm now moving out and I'd rather it was the youngsters picked this all up really. You know what I mean?

Int: So do you have children who will take over the business?

C: I don't know, I've got a son-in law who works in the business and I've got a different daughter who works in the business. Whether they. That's up to them isn't it? I don't push them into anything. So I'm a bit... Those of us that do farm on the coast have a slightly different view. We are fully aware of the issues. We know they are there. And some of them actually now are thinking, well I'm going to put that reservoir in that we've been talking about. Because they are thinking well if we don't there is a risk, which probably, we should start to think about it because there could start to be risks of what I perceive to be waste water, beginning to think the environmentalists might think is not. Because historically, pumped water, if you pump water through a sea wall you can actually bring it back put it in a reservoir and you do not need a license. Right? That's a good thing because there's no cost. Now... and there was a time the RSPB and the WFD would say that a pumped outlet has no environmental benefit, but I do detect, with our [REDACTED], they have insisted on some work being done and a level of water to be pumped, which historically they would not have done. And therefore, for me to be blasé and say I've got lots of water... I've got to be a bit careful... But there's so much goes out I know there's still available water there. But I think we'd need to start moving on that because they might move those goalposts. That's why I talked about goalposts moving. "No we're not interested in that"... Now, because people are saying, well, I want it, they are saying, "Ooh hang on". Do you know what I mean? They weren't interested in it, but when somebody said, well we're going to take it, they're saying "uh". Well fair enough, got no problem with that.

Int: Do you have much understanding of how they assess environmental water needs?

C: They haven't got a clue! They haven't got any more clue than I have! Oh, we did a lovely survey, it cost an absolute fortune, where they had, you know, they counted birds on where there was water and where there wasn't, and of course, where there was water there were more. Brilliant! So if you've got a pub and you've got no beer in it and you've got a pub next door that has beer in it, which one would have more customers in it? I suspect the one next door. Does that mean there's people going short of water, or beer? I don't think so. I don't think you can correlate the two! It's blatantly obvious if there's water in one place and not another they'll go to where it is. The only

problem is if there's not enough for them all to go to. Well, the research did no work on that at all, so I don't believe the work they do either you see. Sorry. You probably did it (laughter). When you ask a researcher to do something it depends on how you phrase the question. But they sometimes get told, this is what I want you to do, regardless of how valid the researcher thinks it is, well if that's what you are being paid to do that is what you will do. Isn't it? Well I think so. Except if you are someone like me. We had a license that the agency were grumbling about, and so we had to employ an environmental consultant, a specialist, to answer, and the, well we needed to prove that we weren't being detrimental to the area around this well-point. So we had this guy, professional guy, who did the work. And his report, when we got the report, did make me laugh. And we are paying for this, alright. He said, "Right I've reviewed all the data of the environment back in... ten years ago or so... and I've reviewed it today and it appears to be better today than it was then. Well I can't believe this can be true". And I thought, hang on, I'm paying this guy to make sure that we are not making it worse, and it's better, and he can't believe it to be true, therefore the data collected then must be wrong! Can you believe it? His argument was, "How can it be better when you are taking water". Why can't it be better when you are taking water? Other things come don't they? Yeah, we have a well-point system which was complained about rotten 14 years ago. We got permission and everything. Oh, and the local RSPB, the local [REDACTED] wildlife trust said oh you can't do that you'll destroy the ecosystem. Well now it is an absolute treasured site, because we have a very rare beetle of some sort. Don't ask me what it is. They are absolutely shelled off, they take people there for walks. Best thing since sliced bread. And we were going to destroy the environment with that. Anyway, I'm a firm believer the environment actually can adapt to a certain extent to what's there, and actually that's good for the environment, as long as you don't go to extremes.

Int: Well, I guess humans can have positive and also negative impacts on the environment so...

C: And sorry I'm not denying we have huge negative impacts. I'm not denying that.

Int: But there's definitely cases where human intervention has increased biodiversity as well, for example mosaic landscapes with more edges are supposed to be higher in biodiversity.

C: Yeah, but they are not working as well as they should do. We are part of something else here which is looking at, ignoring the individual farms, looking at corridors from one farm to the next farm to the next farm, linking major habitats sources through a group of farms. Quite interesting work, but a lot of this patchwork we are doing is not linking enough, is it. And you are not getting the result you should get. Anything else you need to know?

Int: That's brilliant. No, I think that's all my questions covered.

C: [REDACTED].

Int: [REDACTED].

C: [REDACTED]!