

1 **INTERVIEW TRANSCRIPT**

2 INTERVIEWERS: Dolores Rey (Cranfield University) (Phone)

3 DATE: 24TH MAR 2016

4 FARM LOCATION (NUTS3): UKH12 (Cambridgeshire)

5 ***Interviewers (I)***

6 *Grower (G)*

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8 **I: What is the proportion that can be irrigated?**

9 G: Well, the areas I am giving you are effectively high intensive cropping areas. In
10 terms of the infrastructure it is basically 100% of the farm can be irrigated.

11 **I: Do you remember the proportion that was irrigated in 2014?**

12 G: From the top of my head I would guess around 70-75%. That is a very rough
13 guess, and that is based on the fact that within our farming rotation we will have
14 intensive crops. We have cereals, sugar beet, we have maize. The maize isn't
15 irrigated and the cereals aren't irrigated, but sugar beet and potatoes and intensive
16 crops are all irrigated.

17 **I: Regarding the crops you grow, you said cereals rainfed and sugar beet and
18 potatoes...both earlies and maincrops?**

19 G: Primarily maincrop

20 **I: Sugar beet irrigated?**

21 G: Yes

22 **I: And do you have vegetables as well?**

23 G: Yes, we have basically for salad production. It is radish, beet root, lettuce, celery
24 and onion

25 **I: No fruit or grass?**

26 G: No

27 **I: Could you give me more or less, or a range of the average yields for rainfed
28 and irrigated cropping?**

29 G: We don't really work on yield...so it is difficult for me to answer that question. My
30 involvement is based on the intensive cropping operation so I can't actually tell you
31 what the irrigated or the rainfed yield.

32 **I: Regarding the water sources that you get the water from, can you give me
33 more or less a split?**

34 G: Probably, a rough figure for the UK will be 95% surface and 5% groundwater.

35 **I: And what kind of abstraction licenses do you have?**

36 G: We primarily have all-year abstraction

37 **I: What about the irrigation methods that you use?**

38 G: Across the farming base we would have in very crude numbers it would be about
39 80% hose reel with booms, 20% with rain gun. We have a little bit of trickle but it is
40 minimal

41 **I: Great. We don't need to get the exact figures. It is just an estimation.**

42 G: We also got subsurface irrigation

43 **I: When you have to decide when to irrigate and how much, how do you do
44 that?**

45 G: Primarily we are using enviroscan, but again it varies with the crop. I assume
46 you are referring to field crops rather than cover crops...

47 **I: Yes**

48 G: It will be primarily enviroscan. We are doing a little bit of work looking at direct
49 plant measurement. And a little bit of water balance but not really... It is mainly the
50 in-field soil moisture

51 **I: Can you tell me what is the final destination of your production depending
52 on the crop?**

53 G: Maincrop potatoes will be processing, local market and supermarket. Vegetables
54 will be all of your options. In terms of cereals you don't have here the title that fits it
55 because effectively it goes into grain pool. And sugar beet goes to processors.
56 There will be some exports for cereals, but we don't sell it for export we sell it for the
57 grain pool. We do exports on vegetables and potentially you can also add exports to
58 potatoes, but again that is very...the vegetables is a bit more routine and the
59 potatoes is more seasonal. In some years there will be no exports and in other
60 years a lot of exports. That depends on how the market is doing.

61 **I: Now let's start talking about droughts. I don't know for how long have you
62 been in the business but if you can remember what was the level of impact of
63 these droughts for your business?**

64 G: I think 76 was high. 88-92...I am struggling with that...I know that the 2010-12
65 was...towards the end of that it was getting high. 2004-06 is medium. 88-92 high. I
66 am not sure about the other ones I am afraid...

67 **I: Can you tell me a bit more about your memories of past droughts? You can
68 focus on a particular one or...**

69 G: If we focus on the most recent, the 2010-12 drought...One of the impact of that
70 was that we changed our cropping plans...

71 **I: After the drought or during...**

72 G: This drought was really an overwinter drought so we were basically planning our
73 cropping strategies in accordance to how much water we had available in each
74 area. So we were moving some crops around so for what we felt...what we had to
75 do is to guarantee we had enough water volume to irrigate the crop until completion.
76 If we were concerned about our lack of volume we wouldn't plant in that area.
77 Obviously we have a substantial body of water in storage so effectively is a little bit
78 easier for us...effectively if you take the response of previous drought experiences
79 is in fact building reservoirs, so a fairly significant reservoir building programme as a
80 response to drought to give us the resilience of water supply.

81 **I: Can you tell me a bit more how you manage the water in the reservoirs?**

82 G: Ironically, since we built the reservoirs we have hardly touched them. We
83 obviously were planning to use the reservoirs in 2010-12 but since the drought was
84 affecting groundwater supplies and then in 2012 in the late spring it started raining.
85 The main strategy for the reservoirs is if we have an abstraction restriction or ban
86 during the summer then we will basically use our stored water to maintain our
87 cropping plans that actually require us to use abstraction. But if the abstraction can
88 continue through that period we will carry on doing that because it is cheaper. Most
89 times is it cheaper to put water around our irrigation network from direct abstraction
90 that actually to use the reservoirs to do that.

91 **I: You said that when there is not enough water you want to make sure that
92 you have water for the whole crop cycle, so if you don't have enough water
93 you are going to reduce the planting area...**

94 G: Yes, exactly that. We just don't plant

95 **I: So in terms of yield reduction, can you tell me what was the yield reduction
96 (if any) of the main crops you grow?**

97 G: Generally speaking we hadn't have a significant yield reduction because we
98 manage the crops to ensure we have enough water available to provide all the crop
99 requirements with water. So we haven't suffered from yield reduction during drought
100 from that perspective because we have the infrastructure capacity to manage that. If
101 we didn't have that, and we had a full drought situation then we will have a 100%
102 yield reduction because these salad crops with no water they die...We don't get a
103 small yield, we get no yield. That is why it is so critical for us to have the sufficient
104 water volume.

105 **I: And I guess you need that water for getting the right quality for your
106 production as well**

107 G: Yes, absolutely

108 **I: What about the prices during drought? For the most recent drought, do you
109 remember any change in prices?**

110 G: Yes, there was a pretty significant price increase but again it varies very much
111 product by product. And it also depends on purchase timing. If you look for example
112 at people buying in spring 2012, people buying potatoes ahead on contract, they
113 were looking at a situation where the prediction of available water were reducing
114 what meant that the total crop volume in the market anticipated for the end of
115 autumn 2012 were reducing, so the forward contract price was increasing. And that
116 was because they were using a forecast business. So there was a lot of movement
117 in that. Within our salad crops, we are working on seasonal pricing, so the price isn't
118 directly affected by the drought, it is more of an accumulated long-term impact. It
119 depends on the ability of the market to get the product from other places. So if the
120 whole of northern Europe is in drought, then the price increase will be enormous. If
121 the UK is in drought and we can get product from the continent then the impact on
122 the prices will be ameliorated.

123 **I: This is really interesting because one of the things we want to do after this**
124 **study is to assess the impact of droughts on the whole UK food supply chain.**

125 G: I think one problem is we have a very dysfunctional food supply chain because
126 the way some of the commercial arrangements are all put together, they are almost
127 designed to try and hold a standard price for a prolonged period. And that doesn't
128 give the right gist to the supply base to actually make investments in infrastructure
129 resilience. Typically if the market was paying for resilience then we will get more
130 resilience. But actually the market is almost refusing to pay for resilience and supply
131 cannot afford to invest in resilience so I personally think we have a less resilient
132 system now that we had previously

133 **I: Really? That is interesting**

134 G: If you look at it from the point of view of the UK economy, if we had an attitude,
135 as we do, that if we run out of product in the UK we don't have a problem because
136 we can go to the continent or buy what we want. We are making the assumption
137 that the continent has the volume available to us, and that they will be willing to sell
138 it to us for the price that we want to pay for it. There is a sort of an irony in the
139 market place and is that everybody will actually go down that route and if it can get it
140 at the price eventually we capitulate and we will pay more money, but it would be a
141 very stressed economic discussion with customers to get to that place. If we look at
142 the situation where we have put a big amount of capex into reservoir construction to
143 increase the resilience of the business, when it would get to a point when we would
144 say to our customers: right, we are now in a severe drought situation, the price of
145 our product has gone up to give us the return of this investment. There will be a lot
146 of crying and screaming from customers about how wicked it was. The farmers are
147 exploiting this situation for a financial gain. There wouldn't be any recognition on
148 the fact that this is actually what they are trying to do, to get a return on their
149 investment on infrastructure to reduce the risk of drought. Because if the market
150 doesn't have shortage and the market is not interested in payment to insure for
151 shortage. And when there is a shortage everyone will cry because it is too
152 expensive. Each crop is different. Cereal crops are driven by pretty much national
153 and global pricing, so consequently that moves in a more true market position. The
154 potato crop is a little bit more...it behaves more like a cereal crop on a national

155 basis, but the intensive crops don't necessarily behave in the way we should expect
156 the market drivers to make them behave.

157 **I: I guess you are right. If you know that you can get production from**
158 **elsewhere if there is a drought, why do something about it really?**

159 G: Yes. It is not as much us, it is effectively our retail customers. If you take for
160 example the position attitude of the discounters that very much promote their focus
161 and loyalty to UK farming but if the price of the UK product is higher than the import
162 they will switch off and start importing. They would have no hesitation of moving
163 their supply. Because what they would be saying to their customers is that they are
164 working very hard for their customers so they can buy the cheapest product you can
165 possibly buy. So we are not interested in long term issues. And all the time there is
166 available volume in the market that is what we are going to do. And if we run out, we
167 run out and we will stop selling it. It is a very frustrating market place because, work
168 like yours is trying to analyse and way up the long-term impact of climate change
169 and the increase in frequency of droughts and the need for farmers to actually
170 become more resilient. You know, all that demands a very clear long term
171 commitment from the market place to make it happen. And when you are living in a
172 market that is absolutely a day to day market it is very difficult to make that
173 investment.

174 **I: Yes, if you are not worried about the long term...And during previous**
175 **drought, have you experienced any problems with your clients, like**
176 **supermarkets, processors... if you didn't achieve the agreed production or**
177 **quality?**

178 G: I think generally I would say we didn't have any problems because our role is to
179 manage supply. We have a very fortunate position as we have an incredibly flexible
180 supply base with structures to manage those processes. So, if anything, I think our
181 position was strengthen after the drought because effectively customers started to
182 get worried about what the future held and they were looking to us to give them the
183 security, but as always it was a theoretical discussion because it actually never
184 came to the place that they started to run out. And people's memories are very
185 short, so if they don't actually run out then they forget they might run out when at
186 that time they were worried about running out. It might sound a bit crazy but...I think
187 at that time they all got a bit worried, they all started to understand a value in the
188 proposition of a very resilient supply chain but if we ask the same question now, is it
189 important to you? No, I haven't got a problem now. So all that memory is gone, and
190 we are back to normal.

191 **I: Now I want to talk a bit about abstraction restrictions. Has your business**
192 **been impacted by those and what kind of restrictions did you have during the**
193 **different drought episodes?**

194 G: I can only comment really on the last two. In both situations we were under
195 voluntary restrictions, so we got our water users moved to night-time irrigation. But I
196 think in previous droughts there have been mandatory restrictions as well. I think in
197 previous droughts there were actually mandatory bans. The situation with a ban is

198 obviously what drives our mentality. We are designing our resilience so if
199 abstraction is banned we can still manage a lot of crops with our stored water. So I
200 think we pretty much now got to a place where we can run the whole of the summer
201 season with no abstraction through stored water. Clearly with a ban winter
202 abstraction we can do the one year but we are entirely dependent on winter
203 abstraction to refill. And if we have a long drought that run into winter then we will
204 have a massive problem because there would be no refill and then we are back into
205 the same place as anybody else.

206 **I: What do you think about S57 in terms of whether you understand the**
207 **triggers, if you get the right amount of notice and information...?**

208 G: As far as I am aware we work very very closely with our IDBs and EA so
209 generally speaking we are quite relax about the level of metrics we are getting about
210 restrictions coming through. They seem to me as a fairly good collaboration on
211 these management issues. It is not as we are sitting there and somebody just turns
212 the tap off...it is much more managed and planned.

213 **I: Do you think there has been an evolution, so for instance the EA is more**
214 **helpful now that it was before?**

215 G: Because we have the IDB, they are actively managing our water resources and
216 we are members of those IDBs. Through that system we get very good
217 transparency of knowledge. So I wouldn't say necessarily it is got better or worse, it
218 has been always very good

219 **I: When there is a drought, what sources of information do you normally use?**

220 G: It would be a combination from the IDB and the EA. Not as much from the EA
221 website but from direct contact with them. Obviously we will use Met Office for long
222 term forecasting as well.

223 **I: Now, talking about drought management at the farm level, what kind of**
224 **strategies do you normally apply? You have here a list of them. Which one of**
225 **those do you normally use and if you could select the Top 2 for your**
226 **business?**

227 G: We wouldn't routinely try to overwater to get the soil water content up (it doesn't
228 seem as a very sensible strategy). We would certainly irrigate on a reduced area if
229 we don't have enough water you have to maintain full schedule. For some crops we
230 may well have a reduced schedule. We definitely irrigate at night. We wouldn't touch
231 supply contracts. We have evaluated our resource position already and that is why
232 we have reservoirs. We certainly work with the abstractor groups. In terms of the top
233 2 for use would be night-time and a drought management plan. We wouldn't
234 develop it but we have already got one.

235 **I: After the last drought episode, did you make any change in your business?**
236 **You talked about reservoirs, but is there any other thing that you did?**

237 G: Basically what we did was to build another big reservoir in a particular farm. We
238 didn't have enough water in that farm so we build another reservoir. Well, actually

239 we built two. So we did reevaluate our resource position and we made the
240 commitment to go ahead and put two new reservoirs in. So we already had a lot of
241 water and now we have even more.

242 **I: Would you say that your attitude towards drought risk has evolved over**
243 **time after being affected by several droughts?**

244 G: Yes

245 **I: What water management aspects could be change in the UK to improve**
246 **drought management in relation to agriculture?**

247 G: I think water trading could be one of them. Obviously forecasting will be one of
248 them. Also, the management of water in the catchment area. The other aspect of
249 this is actually what I said about the dysfunctional market place. If there was a
250 mechanism to reward growers for investing in resilience...so you wait for the event
251 and then applicate your return in your resilience investment. If there is a mechanism
252 to acknowledge the fact that people have quite a long term plan investment in
253 resilience and actually reward it through the market place. That would be very
254 beneficial, and maybe also quite naïve...but it would help. I guess if you want to be
255 really brutal, the other way if you wanted to do it at the national level is to change
256 the price of water because at the moment in a non-drought situation water is cheap
257 as an input, so consequently the motivation of a farmer to invest in infrastructure for
258 efficient water use is very poor. However, if you look at Spanish businesses where
259 water is very expensive and ensures supply then consequently we have far more
260 efficient irrigation systems in Spain than we actually do in the UK. If you want to
261 reduce your dependency on water, then if you increase the price of water per litre
262 then suddenly people will start to revisit the capex of some of the more advanced
263 systems to manage irrigation

264 **I: I think this is something that the WFD aims to do, although I am not sure**
265 **about the progress here in the UK**

266 G: The problem within the UK...let's put this highly hypothetically, the UK executive
267 is going to put a massive surcharge on the price of water. The problem with that
268 strategy is...it would be absolutely fine if from the farmer perspective you can
269 recover the cost of that surcharge through the price of the product. It wouldn't make
270 any difference to you. And then you would have the positive persuasion from an
271 input cost that actually improves your efficiency. What would happen in reality is that
272 the costs of the water will increase but the price of the product will stay fixed. So the
273 farmer will feel the pain of that process. It will still drive efficiency because it is a
274 national process but it seems very hard for the farmer to bear the complete burden
275 of it.

276 **I: On a scale from 0 to 10, how do you rate drought risk for your business?**

277 G: Probably for our business I would rate it probably as a 4. However, for the
278 industry as a whole I would say a 10. The low rating for us is the fact that we have
279 our water insurance

280 **I: I have been talking to other growers and the ones who rated this as low rate**
281 **is because they have reservoirs and mechanisms in place to protect**
282 **themselves against the risk of not having water.**

283 G: Yes.

284 **I: Do you think that water scarcity and droughts are going to become more**
285 **frequent and severe in the future in the UK?**

286 G: Yes, highly likely

287 **I: If that is the case, what other things would you be willing to do in your**
288 **business? More reservoirs?**

289 G: I think we have already invested in reservoirs so that is fine. I think we have the
290 opportunity to go down to drip irrigation, so the modernization will be a priority for
291 us. Also, to invest more heavily in soil management strategies to retain more rain
292 water.

293 **I: Is there anything else do you like to add before concluding the interview?**

294 G: I don't think so...