

Irrigation Business Reviews - Findings Summary

Objectives and Scope

As part of the 'WATERR' Project, the aim of the Irrigation Business Reviews ('IBRs') was to conduct in depth interviews with irrigators in order to:

- Understand the key issues affecting the sector, in particular the impact of restricted water availability on irrigator businesses.
- Identify current irrigation water use efficiency, the impact of irrigation on financial returns, and opportunities for improvement.
- Identify irrigator support needs and priorities in order to determine how the Project could best support the sector.

Crops / Sectors

The interviews were conducted in 2013 / 14 with 102 irrigators across the South East and covered some 29 different crops / sectors including:

- Potatoes: 24 irrigators
- Soft fruit - mainly strawberries and raspberries: 24
- Tree fruit - mainly apples, pears and cherries: 23
- Hardy Nursery Stock: 17
- Salad crops- mainly lettuce: 10
- Field vegetables: 9
- Golf courses / grass: 11

Water Use / Catchments

Based on Environment Agency data, the growers interviewed account for over 50% of irrigation water use in the South East region, and were located in all the major river catchments / abstraction areas including:

Stour (23 irrigators), Medway (13), North Kent (13), Romney Marsh (4), Arun (15), Chichester (7), Hampshire (13), Sussex (8) and Thames (6).

Irrigation Business Reviews: Summary of Key Findings

1. Irrigation Performance and Financial Returns

As part of the IBR interviews, over 50 growers provided detailed information on their irrigation water use performance covering some 150 irrigated crops over the 3 year period from 2011 to 2013. An overview of this performance data is contained in the 'IBR Water Use Efficiency and Financial Returns Data Summary: 2011 – 13' which provides specific information on each of the main crops covered by the IBRs.

The main conclusions from the IBR interviews and data analysis are:

- Over 70% of growers interviewed ranked irrigation as 'Crucially Important' to their business.
- For each of the main crops there is typically a 2 to 3 fold difference in water use efficiency/productivity between the top and bottom quartile irrigators.
- Irrigation has a major impact on grower financial returns :
 - Growers interviewed estimated that irrigation in field crops typically increases yields by some 15 - 20% in apples/pears, 30% in potatoes, 40% in strawberries and 75% in raspberries.
 - Combined with improvements in produce quality and prices, and after deducting the cost of irrigation , the 'Net Financial Benefit' of irrigation is estimated by growers to be 15% of Gross Proceeds in apples/pears, 42% in field strawberries, 48% in potatoes, and 77% in field raspberries.
 - In lettuce and substrate grown strawberries and raspberries irrigation is fundamental to crop survival, and is also the primary source of fertiliser and crop nutrients in substrate grown crops. Growers therefore indicated that for these crops irrigation accounts for 100% of production, or in value terms between 93% and 97% of Gross Proceeds after deducting the cost of irrigation.

2. Water Availability and Outlook

- 34% of the South East irrigators interviewed said that restrictions on water availability had impacted their business in the past 5 years (43% in Kent).
- Demand for water for irrigation is increasing significantly: although there was an overall reduction in irrigation water use by companies interviewed of 20% in 2012 as a result of the exceptional rainfall in that year, water use in 2013 was 20% above 2011 levels.
- The growth in irrigation water use has been particularly marked in the trickle irrigation sector: Environment Agency data shows that in Kent trickle usage more than doubled between 2007 and 2014 .
- This trend is confirmed by the IBRs which indicate that trickle irrigation, primarily for soft and tree fruit, now accounts for some 58% of total irrigation use in Kent and 43% across the South East.
- The planned changes to the abstraction licensing system, including the removal of the trickle exemption, are major concerns for the large majority of irrigators and make long term investment decisions difficult.
- Irrigators are therefore concerned about future water availability: while 16% of licenced irrigators said their licences are sufficient for current needs, 42% felt they would not be sufficient for their future needs (48% in Kent).
- Many growers are taking steps to improve their own water availability: some 30% are planning to install new reservoirs / storage and a similar proportion are considering rainwater harvesting systems.
- Although there is little trading of water between growers at present, 25% of irrigators interviewed said they are looking to access additional supplies from neighbouring growers.

3. Irrigator Support Needs

a). Ranking of Project Support Proposals

Irrigators were asked to rank areas of support being proposed under the WATERR Project. The following were ranked as 'Important' or 'Very Important' by the majority of growers:

Water Availability

- Learning about, and providing input, to planned changes to the licensing system (ranked Important / Very Important by 72% of irrigators)
- Exploring collaborative opportunities to improve local catchment management and improve water demand / supply balance (52%).

Improving Irrigation Performance

- Learning from the experiences of other irrigators (77%).
- Understanding which technologies and systems have the greatest impact on use efficiency and financial returns (67%).
- Visits to sites which demonstrate irrigation Best Practice (67%)
- Understanding how their own water use efficiency compares with other irrigators (58%)

b). Other Support Needs

The IBRs highlighted the following areas where additional support is needed:

- Some 90% of growers interviewed ranked saving water / improving water use efficiency as the most important way to address water availability constraints.
- Many growers mentioned the need for more crop specific irrigation information / advice and 'on the ground' support.
- Given the increasing complexity of irrigation operations, more staff training and CPD type courses are needed.
- Irrigation suppliers are important sources of advice, but they are often only experts in their own areas and more integrated support is required.
- Research organisations are helpful, but there is a need to translate leading edge research into practical commercial use.
- Soil moisture monitoring to improve scheduling is seen by many growers as key to optimising irrigation performance.