

## supporting irrigators in the south east



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### *The Importance of Irrigation*

Working closely with over 150 irrigators in South East England over the past two years, the **WATERR** Project has confirmed the importance of irrigation to horticultural production within the region:

- Over 70% of growers regard irrigation as 'Crucially Important' to their business.
- There is typically a 2 to 4 fold difference in water use efficiency between growers.
- There is a strong correlation between optimizing irrigation water use and financial returns.
- Improving water use efficiency is seen as the best way to improve future water security.



### *Improving Water Availability and Security*

These findings are the result of in-depth interviews – Irrigation Business Reviews (IBRs) – with 110 leading irrigators who account for over 70% of total irrigation water use in the region. With many of the South East's catchments already designated as over abstracted or over licensed, and major reforms planned to the Abstraction Licensing system, most growers are extremely concerned about possible constraints on future water supplies. Over the past 5 years, water shortages have already impacted 50% of all licensed irrigators interviewed, and over 40% do not believe their licenses will be sufficient to meet their future irrigation needs.

Trickle irrigators are equally concerned about the removal of their extraction license exemption.

Any restriction in water supplies could have a major impact on the sector which in Kent, where most of the trickle irrigation for soft and tree fruit is carried out, has more than doubled in size over the last 7 years.

To improve future water security, over 30% of growers interviewed are planning to construct new reservoirs or rainwater harvesting systems. To assist in this, the **WATERR** Project has produced a 'Design Guide for Irrigation Reservoirs'. Although designed specifically for Kent growers, the Guide will be useful to other irrigators as it covers all aspects of reservoir planning including location, design, costs, funding options, legislative and planning requirements.

The Project has also provided support through a series of water availability workshops which have involved some 130 growers and

other key stakeholders including the Water Companies, the Environment Agency and the Defra Team responsible for Abstraction Reform. In particular, the Project has identified potential opportunities to access cost effective, untreated water supplies from Southern and South East Water, either through trading or direct access to pipeline supplies.

This initiative continues to be supported through Kent County Council's Water Task Group and any growers who wish to be involved in further exploratory discussions with the Water Companies should contact Alan Turner at [Alan.Turner@kent.gov.uk](mailto:Alan.Turner@kent.gov.uk)



## Optimising Water Use Efficiency and Financial Returns

The IBR interviews confirmed that improving water use efficiency is not only the most effective way of improving water availability and security, but is also a key driver for maximizing financial returns.

By analyzing detailed water use efficiency and financial performance data from 150 irrigated crops over three seasons (2011 to 2013), the Project identified major opportunities for growers to improve their irrigation productivity and returns. Focusing on 9 key irrigated crops, there was typically a 2 to 4 fold difference in grower yields per unit of irrigation water used. In addition, the research confirmed the importance of irrigation in securing better prices through improvements in produce quality and marketability – for example in soft fruit through improved shelf life and taste, and in main crop potatoes through larger tubers and better skin finish. Similarly, in tree fruit grower data confirmed the importance of irrigation in meeting retailer fruit size and uniformity requirements.

Asked to estimate the overall financial benefit of improved yields and prices, growers of field crops indicated that irrigation accounts for between 40% and 75% of total crop proceeds. For growers of substrate grown crops, the figure was 100% as irrigation is fundamental to crop survival and output, as well as the primary source of fertilizer and crop nutrients. Comparing the irrigation performance of Top Quartile producers in terms of financial returns with that of other growers confirmed these perceptions. For example, Top Quartile substrate strawberry growers used 36% less water per tonne of crop produced than Bottom Quartile producers. By optimizing irrigation timing and volumes, they achieved 60% higher yields, which together with 7% higher prices, resulted in total proceeds per hectare that were 90% higher than Bottom Quartile producers. Indeed, monitoring soil or coir moisture content to optimize irrigation scheduling and duration was highlighted by growers of all crops as the most important factor in maximizing yields, produce quality and overall profitability.

## Irrigator Support

Understanding how their own irrigation productivity compares with other growers, and identifying those technologies and systems which have the greatest impact on water use efficiency and financial returns, were ranked by growers as the most important ways in which the Project could help them to improve their performance. The WATERR Project has therefore run a series of crop specific Irrigation Performance Workshops and Best Practice demonstrations to highlight the IBR research findings and provide growers with information on leading edge technologies currently being developed by East Malling Research and irrigation equipment and systems suppliers. Together with 1:1 Follow Up Briefings for those growers involved in the IBR interviews, some 150 growers have been supported through the programme. The Project has also produced a series of crop specific 'Irrigator Performance and Best Practice' Factsheets which can be accessed at the **WATERR** Project website at:

<http://www.emr.ac.uk/projects/waterr-water-advisory-team-efficient-resource-recovery/>

## Where next?

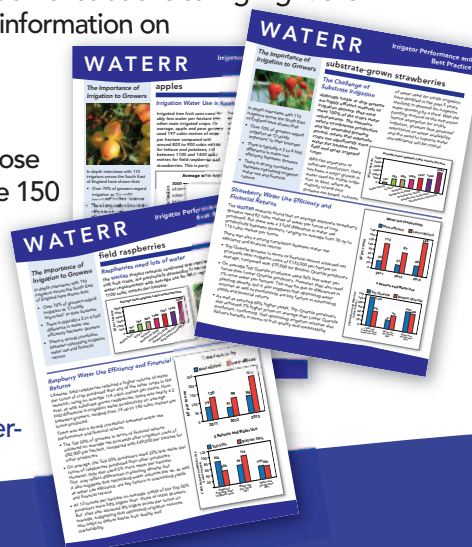
As the **WATERR** Project draws to an end, I would like to thank all the growers who have provided such a unique and comprehensive insight into the opportunities and challenges facing the irrigation industry. We are also extremely grateful for the funding and other support provided by our Partners and Sponsors – DCLG, the Environment Agency and Kent County Council – as well as other key stakeholders including the NFU, Defra, the Water Companies and irrigation suppliers who have contributed so much to the success of the workshops and other Project activities.

We now plan to build on the success of the Project by establishing a UK 'Centre for Water Efficient Technologies' at East Malling Research. The aim is to bring together leading irrigation equipment and services suppliers to work with EMR researchers to develop and commercialise an integrated portfolio of leading edge irrigation technologies and systems which will deliver a step change in irrigation productivity and returns. Focusing on soft fruit, tree fruit, HNS and salad crops, the 'WET' Centre will work closely with growers and Producer Organisations to support uptake of these technologies through grower trials, workshops, demonstrations and training. If you wish to be involved in the development of the 'WET' Centre, or would like further information, please contact

Dr Mark Else at: [mark.else@emr.ac.uk](mailto:mark.else@emr.ac.uk)

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