



This project is part funded by the European Regional Directive (ERDF) as part of the South East ERDF Competiveness Programme 2007-2013

# ERDF 'WATERR' Project

## Irrigation Business Review Findings: Water Availability, Irrigator Support Needs and Planned Support Programme

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# 'WATERR' Project Objectives



**To support South East irrigators to improve their profitability and competitiveness by improving water availability and use efficiency**

- ◆ Opportunities to improve water availability
- ◆ Improve collaboration to optimise catchment water management
- ◆ Identify and Promote Irrigation Best Practice and Leading technologies :
  - ◆ Increase yields
  - ◆ Improve produce quality / prices
  - ◆ Reduce irrigation costs
- ◆ Improve the environmental footprint of South East river catchments



# 'WATERR' Project Irrigation Business Reviews

## In depth interviews involving 125 growers (25% of South East licenced irrigators) to :

- ◆ Assess Current irrigation water availability and use efficiency
- ◆ Impact on production / yields, pricing and financial returns
- ◆ Identify 'Best Practice' technologies and techniques
- ◆ Improvement Opportunities / Barriers
- ◆ Grower Support Needs, and Priorities
- ◆ Confirm 'WATERR' Project Support Programme



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# 'WATERR' Project Irrigation Business Reviews



## IBRs by Catchment / Region

<b>Kent :</b>	<b>Medway</b>	<b>13</b>
	<b>North Kent</b>	<b>13</b>
	<b>Stour</b>	<b>21</b>
	<b>Romney Marsh</b>	<b>5</b>
	<b>Kent Total</b>	<b>52</b>
	<b>Sussex</b>	<b>8</b>
	<b>Hants/ IOW</b>	<b>13</b>
	<b>Arun</b>	<b>15</b>
	<b>Chichester</b>	<b>7</b>
	<b>Thames</b>	<b>6</b>
	<b>South East Total</b>	<b>101</b>



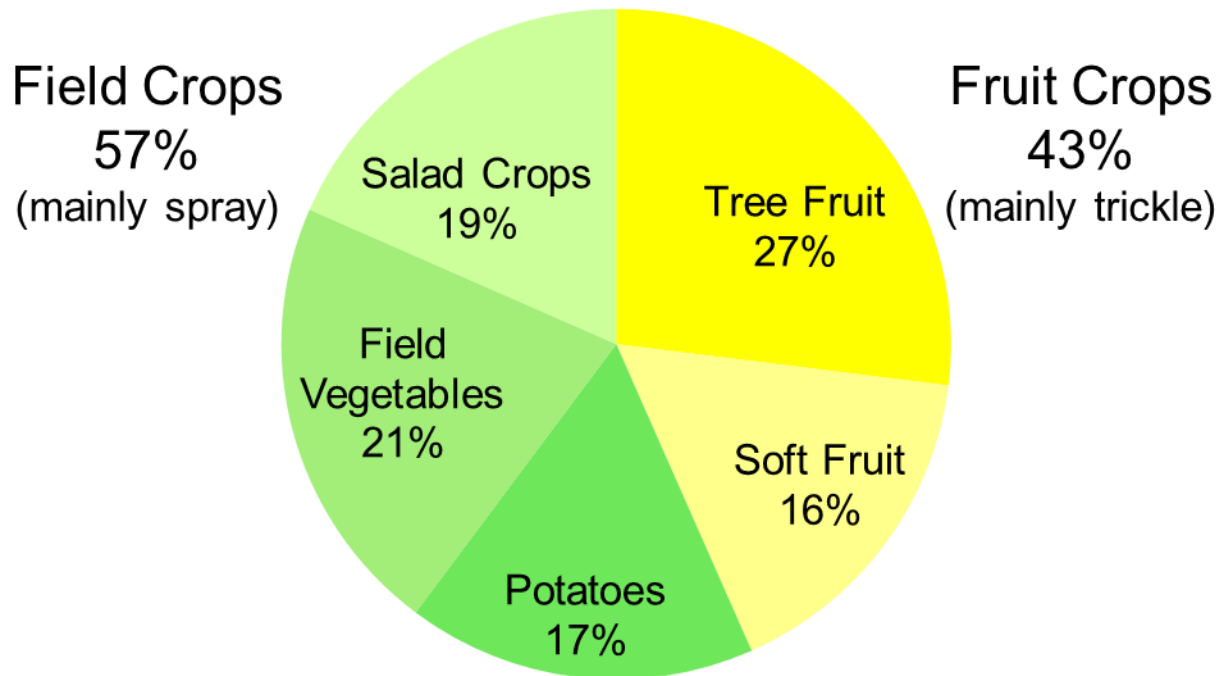
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## South East Growers – Main irrigated crops % area irrigated (Total 4500 hectares)





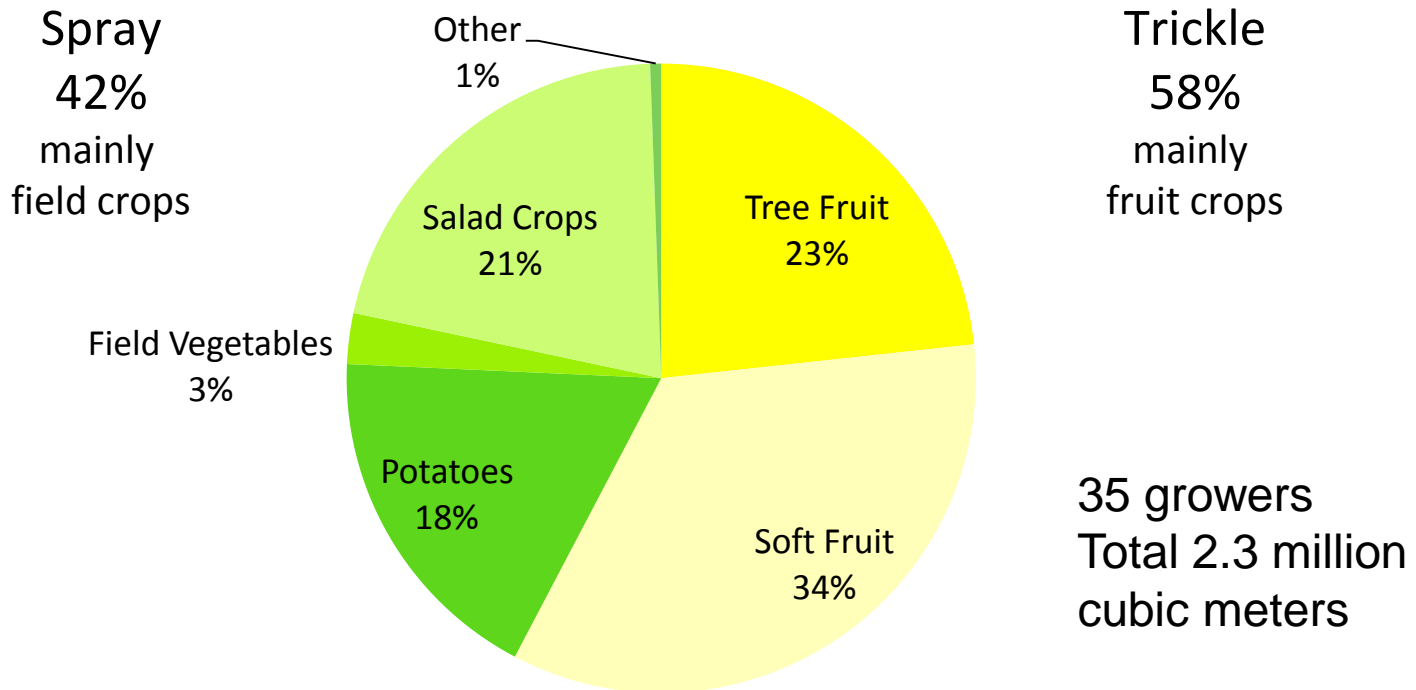
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## Kent Growers – Main irrigated crops % irrigation use (by volume)





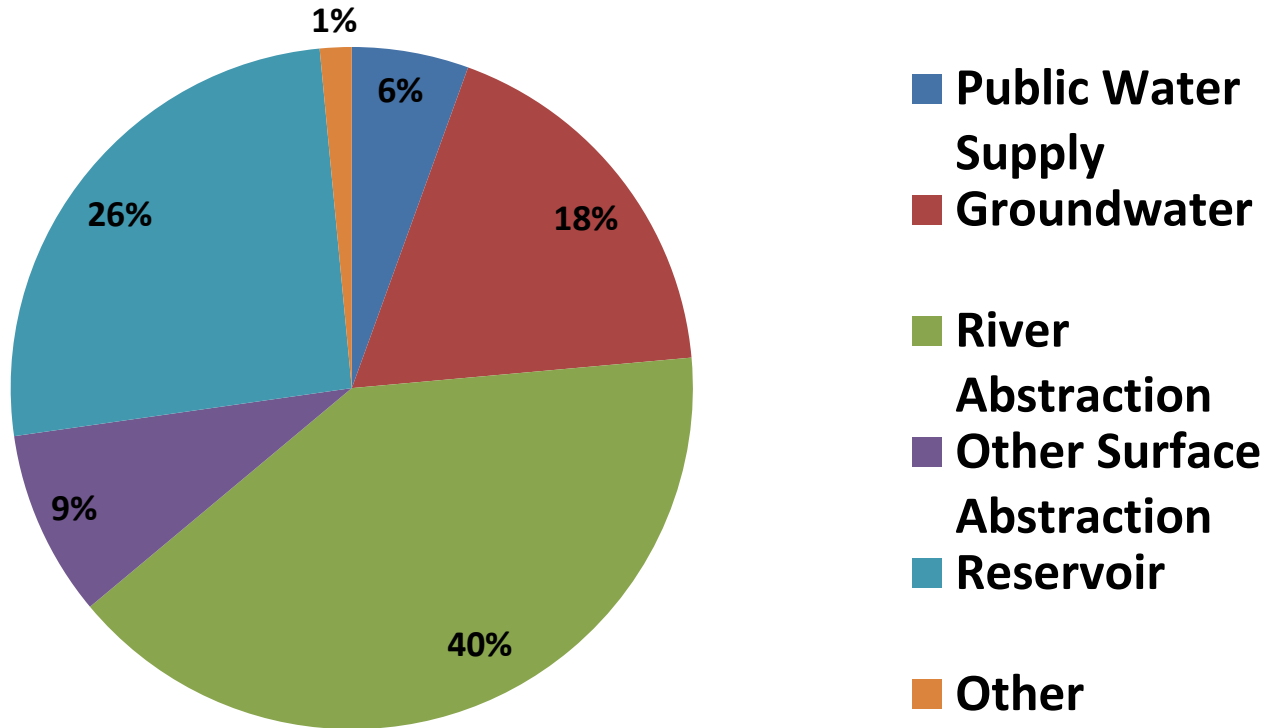
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## Irrigation Water Applied by Source – Kent Irrigators (2013)





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## Irrigation Business Reviews



### Kent IBR Responses : Irrigation Equipment and Management

- Majority of growers using trickle irrigation for tree and soft fruit and rain gun / spray booms for potatoes / field vegetables/ salad crops
- Irrigation is complex, time consuming and labour intensive : optimisation requires careful management of all the variables
- Equipment malfunction time consuming and impacts performance : aim to use latest equipment /regular monitoring and servicing
- Larger producers using computerised systems , but problems integrating the different monitoring / decision making tools
- Monitoring soil moisture content critical for scheduling : increasing use of probes but seen as an area for improvement / simplification
- Need to be able to monitor performance more easily : lack of meters an issue
- Staff training critical to optimise systems but lack of CPD type courses





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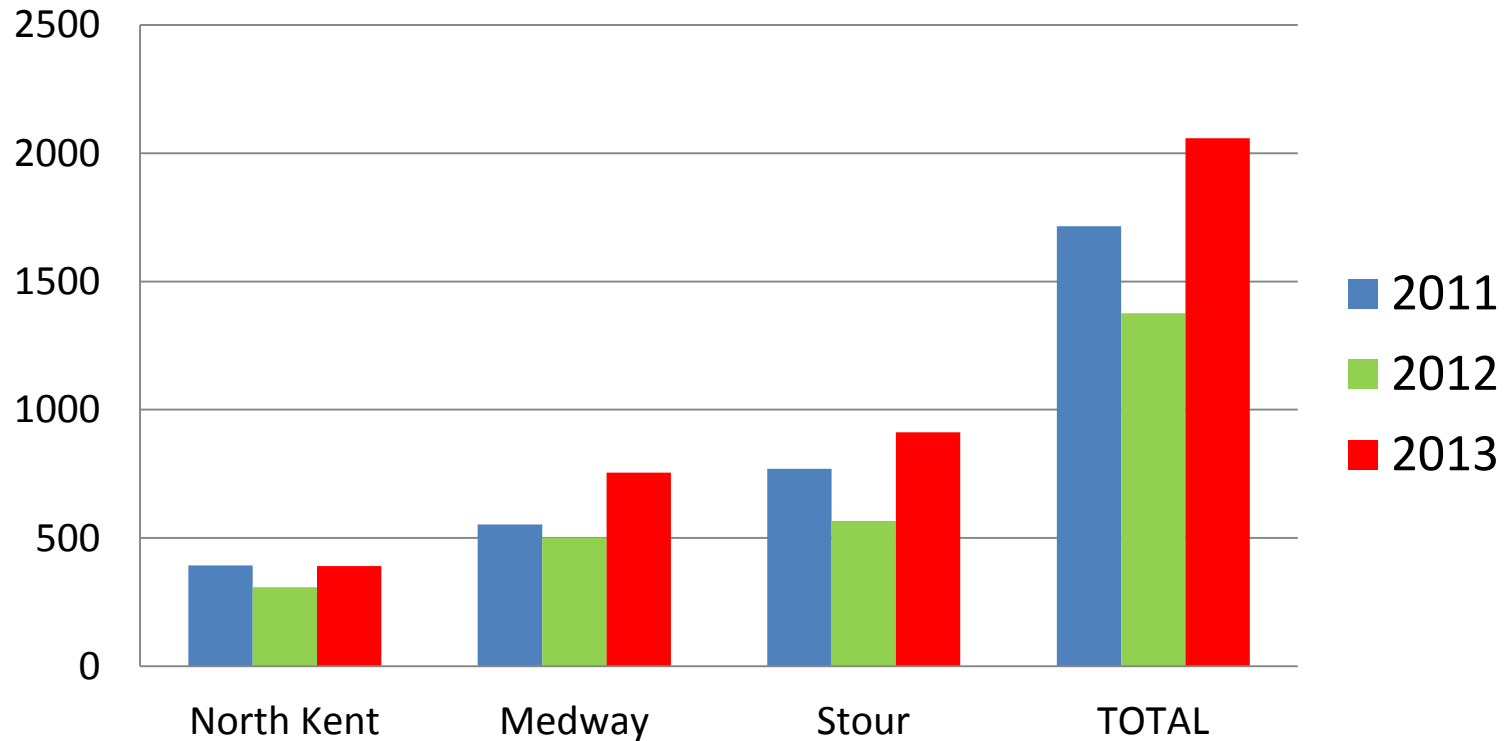
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## Kent IBR findings: Water Use 2011-2013

'000s cubic meters – total for 32 growers





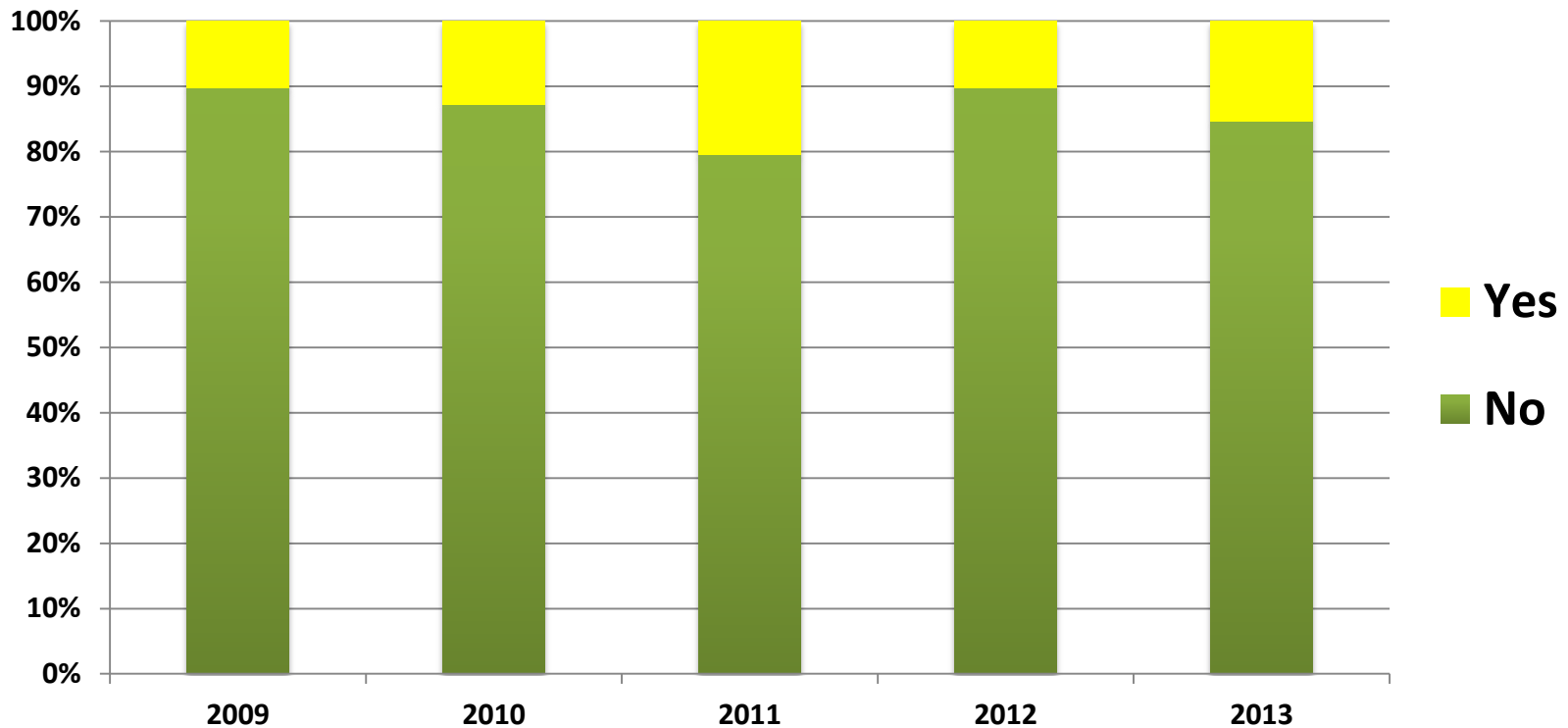
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## Restrictions on Use of Licence in Past 5 Years, Kent Irrigators





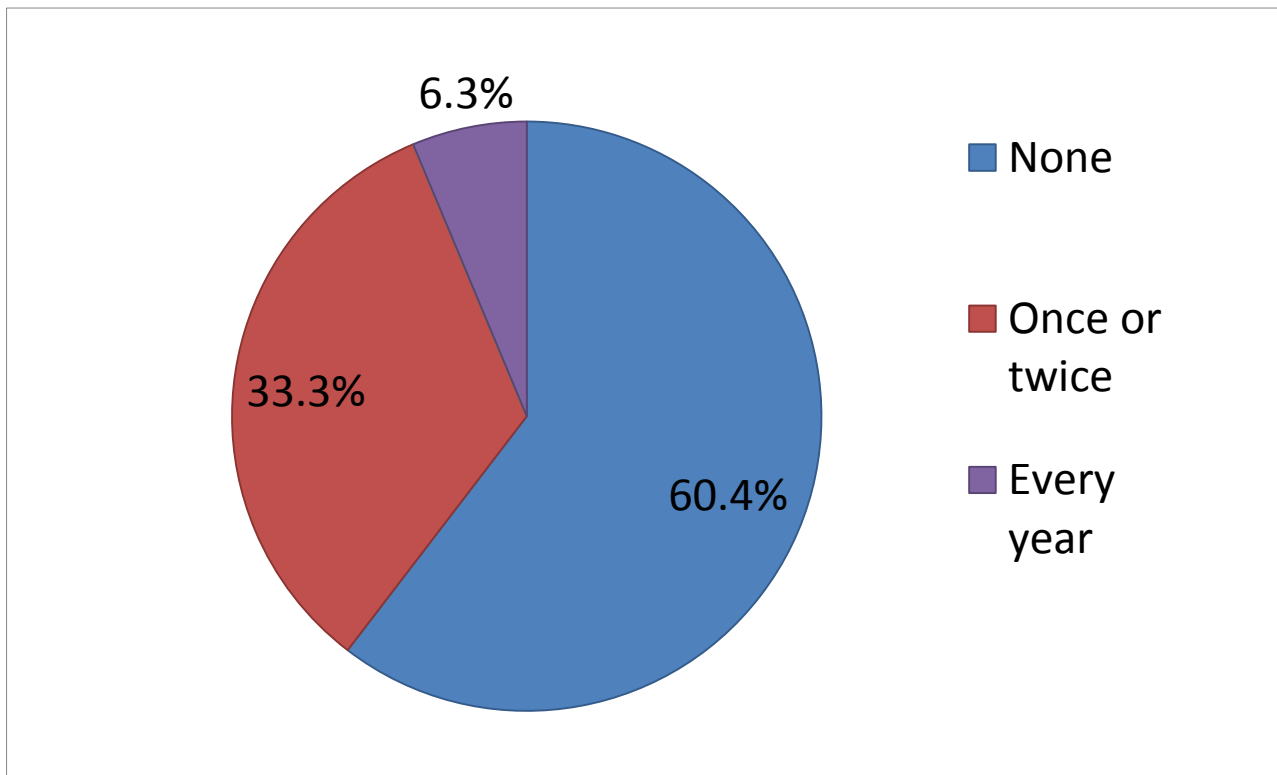
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## Impact of Limited Water Availability on Irrigator Businesses in Past 5 Years – Kent Irrigators





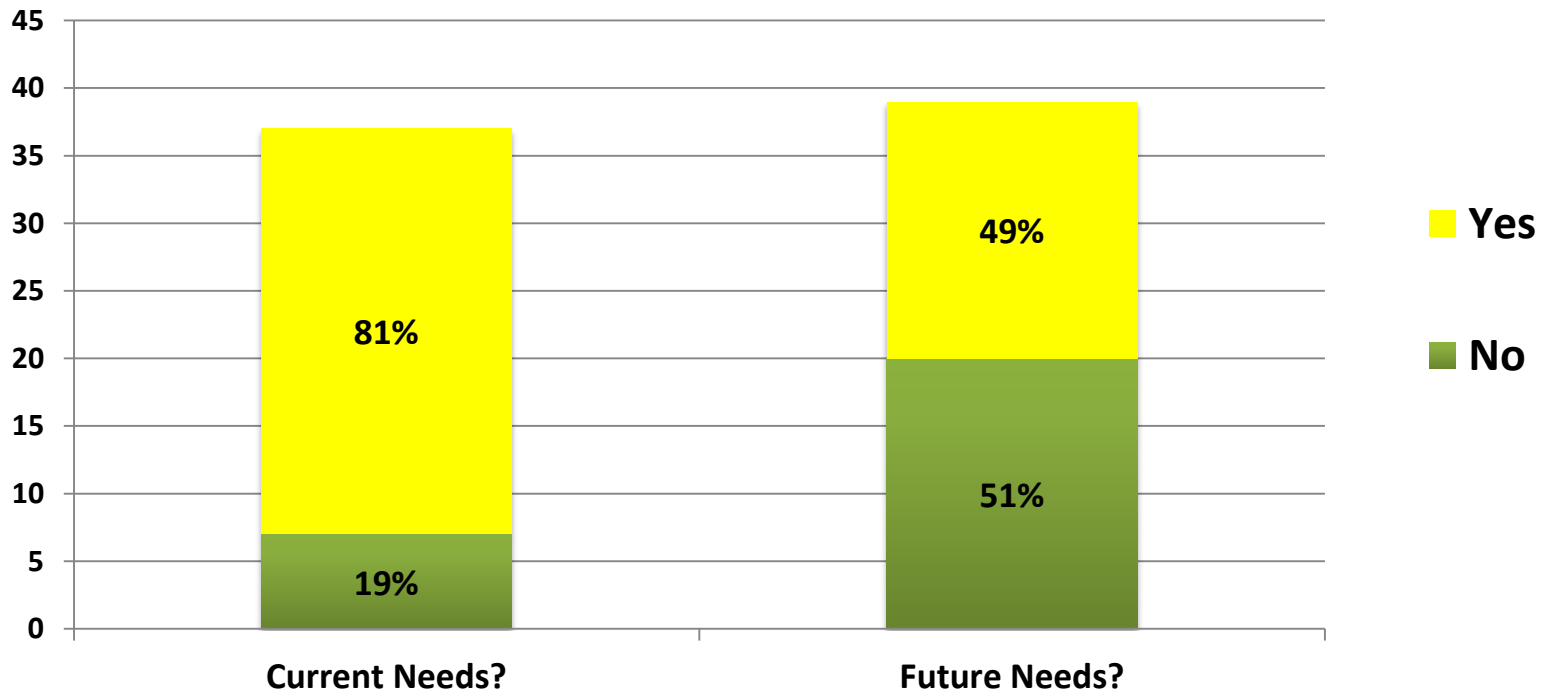
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# 'WATERR' Project Irrigation Business Reviews



## Adequacy of Abstraction Licence for Current & Future Needs – Kent Irrigators





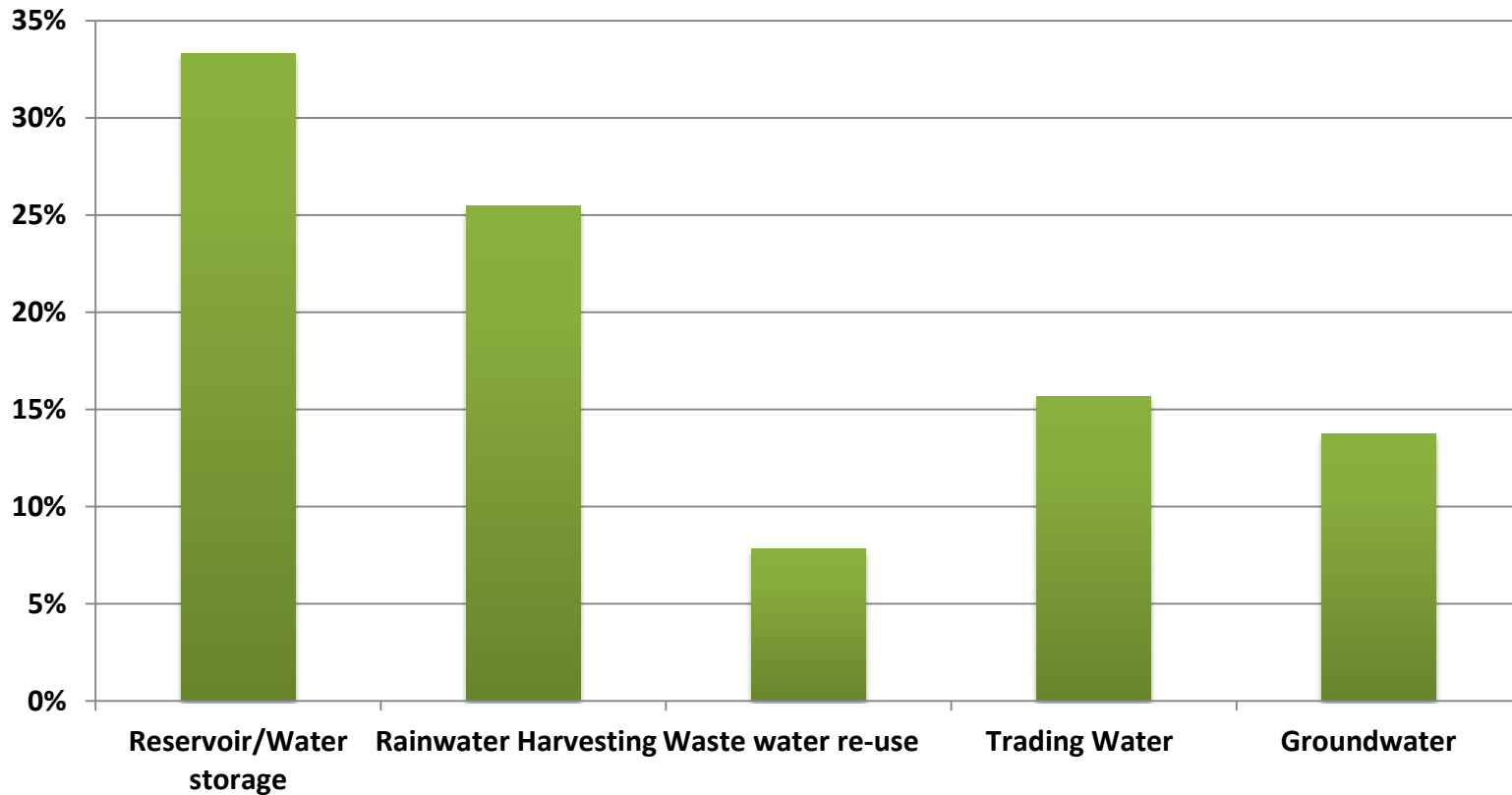
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## Kent Irrigators : Plans to Increase Water Availability (%)





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## Irrigation Business Reviews



### **Kent IBR Responses : Water Availability - Issues and outlook**

- Availability restrictions impacted nearly 40% of growers over the last 5 years , and licensed volumes not sufficient for future requirements for most growers.
- Abstraction Reform a major concern : if future licenses are not fixed / for limited periods only, future investment decisions very difficult
- Trickle irrigators v. concerned at lack of info. on removal of exemption
- Irrigation water use increasing and most growers planning to increase capacity : reservoirs , rainwater harvesting and new boreholes
- Many growers using mains supply to top up supply during droughts (10 – 15% ) but expensive and looking to avoid by increasing capacity
- EA and Planners constraining new reservoir construction : typically takes 18 to 24 months for approval
- Water trading not used, but number of growers acquiring / plan to acquire licenses from neighbouring farms .



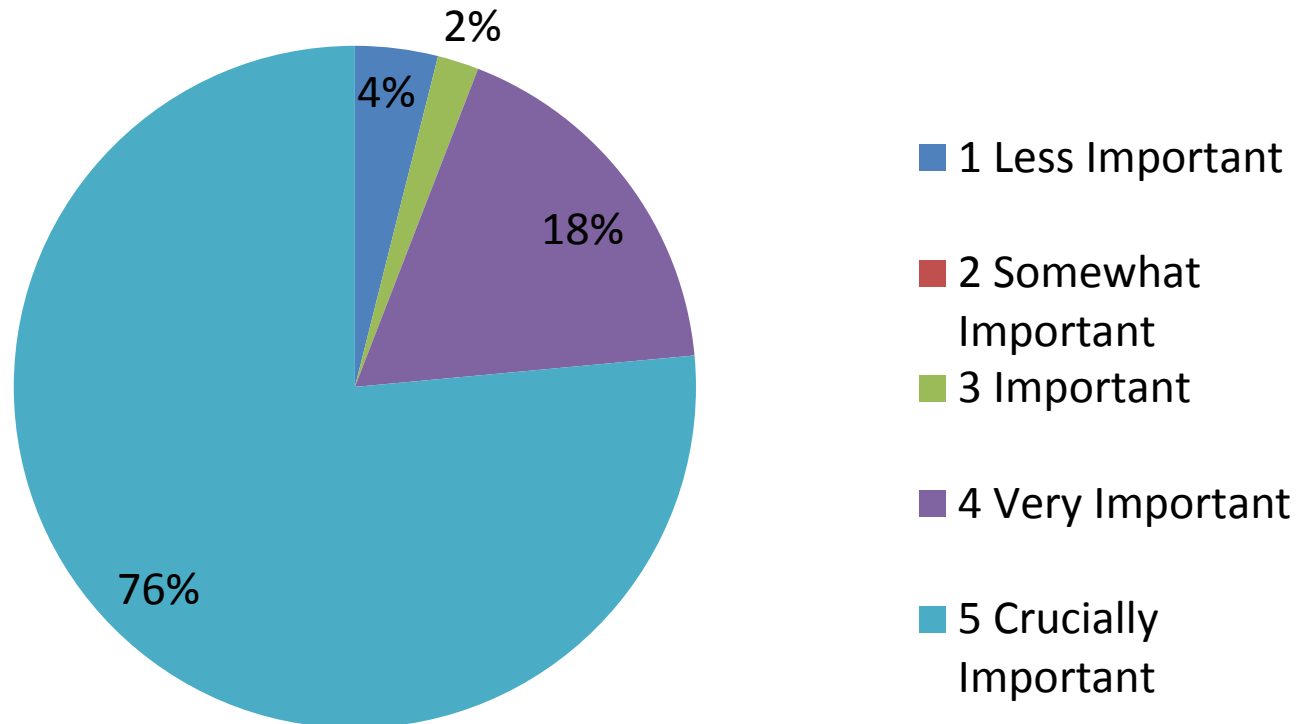
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## Importance of Irrigation to Business Performance – Kent Irrigators





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### Kent IBR Responses : Best Practice / New Technology Uptake

- Larger growers using most of the Best Practice activities identified in the IBR and most were ranked Important or Very Important
- Soil moisture monitoring to improve scheduling seen as key to optimisation, but most growers feel it is an area for improvement
- Extensive use of mulching to increase water retention .
- Supermarkets/processors/POs conducting irrigation research and expect growers to optimise to improve produce quality / consistency / shelf life
- Water quality also important for soft fruit / salad producers : river pollutants a problem and most having to treat
- New technologies / practices: precision irrigation scheduling (soil and substrate) , transient stress techniques, digital / thermal imaging to monitor crop status , integrated grower decision making support systems, new substrates, drought tolerant varieties, waste water recycling,





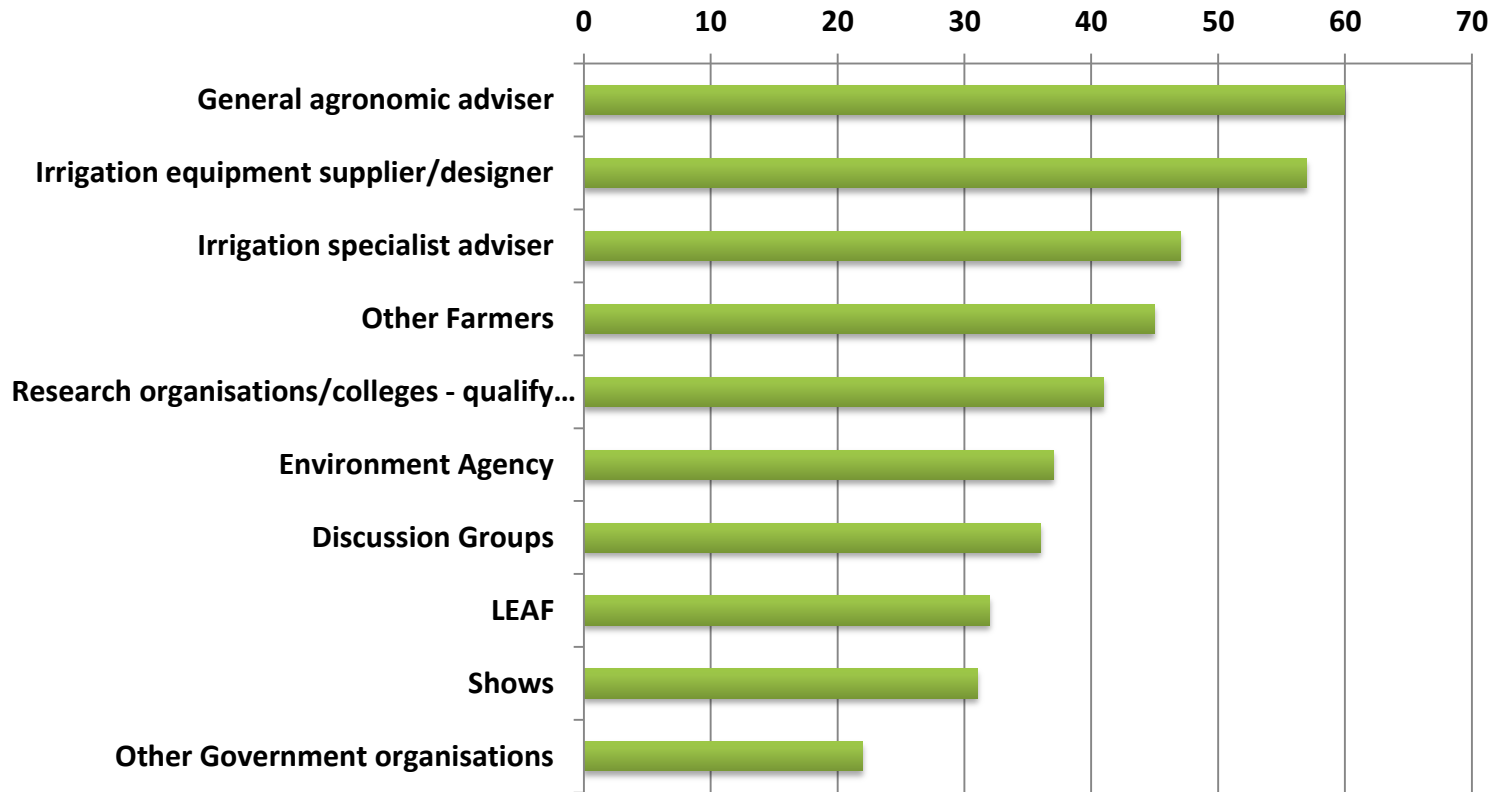
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## Sources of Information to Improve Water Availability & Use Efficiency





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## Irrigation Business Reviews



### IBR Responses : Irrigation Advice and Support Needs

- More information is needed on planned changes to the Abstraction Licensing system , particularly concerning removal of the trickle exemption.
- Given the increasing complexity of irrigation operations , more staff training is needed but there is a lack of suitable courses
- Many growers mentioned the need for more crop specific information / advice and the need for local 'on the ground' support
- In the absence of government support, many growers use equipment and service providers for advice, but more integrated support is needed
- Many growers work closely with research organisations such as EMR , but there is a need to translate this knowledge into practical, commercial use

# 'WATERR' Project

## Irrigation Business Reviews

## Irrigator Support Needs / Priorities

### Ranking / % of Irrigators Rating Important or Very Important

1. Learning from the experiences of other irrigators ( 77%)
2. Learning about planned changes to Abstraction Licensing System (72%)
3. Understanding which technologies/ techniques have the most impact on irrigation water use efficiency and financial returns (67%)
4. Visits to sites which demonstrate irrigation Best Practice ( 67%)
5. Understanding how own water use efficiency compares with other abstractors (58%)
6. Direct 1:1 support from irrigation specialists ( 58%)
7. Collaborative opportunities to improve catchment management and water demand / supply balance (52%)

# 'WATERR' Project Planned Support Programme

## Workshops

**10 workshops across South East in period to June 2015 covering:**

### **Water Availability :**

- ◆ Abstraction Licensing Reform
- ◆ Collaborative opportunities to improve catchment water availability/management including growers, EA, water companies, KCC
- ◆ Options to improve own water availability – New Reservoir Guide

### **Irrigation Use Efficiency**

- ◆ Crop specific workshops covering: potatoes, top fruit (Apples/Pears and cherries) , soft fruit ( strawberries and raspberries) , salad crops (lettuce), and hardy nursery stock ( March to May 2015)
- ◆ Findings from IBRs / Best Practice impact and information on leading edge technologies/techniques .



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# 'WATERR' Project Planned Support Programme



## Best Practice Demonstration Visits

- See leading edge technologies / Best Practice techniques in commercial use  
( May to Sept 2015)



## Specialist Advice

- 1:1 support from EMR specialists
- Workshops to include leading technology suppliers and water management advisers



## Best Practice Dissemination

- Case Studies , Fact sheets , and Guides



# 'WATERR' Project Planned Support Programme

## Future Plans – 'WATERR' Project 2 : UK Centre of Irrigation Expertise at EMR

Support the commercialisation of leading edge irrigation technologies and techniques for the horticultural sector:

- Crop specific demonstration centre covering top fruit , soft fruit, and salad crops
- Latest technologies from leading irrigation equipment and services providers – integrated approach
- Continued R & D collaboration with Retailers , Processors and Producer Organisations.
- Workshops and training for irrigation management and staff



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# Thank You

## Any Questions ?



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