

WATER SENSING DECISION SYSTEM **AN ANSWER TO DROUGHT**



Summary

European agriculture is dependent on huge reserves of freshwater. However, production is increasingly limited by summer droughts. The solution for water use efficiency is the control of irrigation by water sensing decision systems for farmers.

The incidence of this water shortage problem will increase in the future with climate change (hotter, drier summers) and competition for water use (food, energy, ecology). The answer to this is to increase water use efficiency in the water demanding sector of agriculture.

Main Benefits

More efficient water use

- » The introduction of water sensing at farm level can target irrigation in space and time, guided by the crop requirements. Currently, without this knowledge, the presumption is to irrigate excessively to guard against reductions in yield.

Economic/job creation

- » Working with SME for sensor creation including possibilities for exporting techniques to wide range of countries worldwide (already export to Israel)
- » Farm business able to cope with drought, also in the future climate

Innovative aspects

- » Raising awareness among farmers on challenges with climate change
- » Current decision support system readily adaptable to additional sensors such as those now being developed to measure Nitrate leaching.

Boosters for Implementation

- » This decision support system empowers the farmer to judge efficient water use with limited investment and training.
- » It makes agronomic sense and business sense for farmers.
- » The problem is real and the solution was provided for them.
- » The exchange of knowledge between farmers.

Barriers for Further Implementation

Climate variability makes the future necessity of irrigation to maintain and/or increase yields difficult to prove. The price of the sensors is still relatively high.

Without a legal claim for efficient irrigation there is no need for the farmer to act.

Maximum efficiency is affected by landscape soil heterogeneity (different soil moisture to plant water availability relationships).

How to Get Over Barriers

Screening should take place where the technique achieves maximum cost-effectiveness due to water stress. Trials should take place in these dry areas, where costs of water abstraction are high or competition is high with other water users.

The water sensing systems can be used in a wider perspective (natural area's, water quality questions, prevent flooding).

Policy Recommendations

Sensors (and DSS) are the future tool for developing a model of sustainable farming.

In order to spread this innovative method and bring it to work in the dry regions there is a need for action:

- » Money to support the implementation
- » Legal or financial measures to motivate farmers to implement the measure

More Information

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