

# Challenge opportunity: Variable irrigation water per plant

global specialist in horticulture



## Background:

*Can you come up with an idea to give every plant the right amount of water? Then be sure to apply to this Challenge!*

*Over the last couple of years we have seen an introduction of new crops in greenhouses. These new crops have different water & climate preferences for optimal crop growth. One of the main difficulties is that the optimal crop growth is not known yet, so there is a lot of experimenting. Some crops grow faster than others. This might be due to various parameters like heat distribution, the amount of nutrients but also the amount of irrigation water that it receives. If a crop grows faster than others, then it will use more water. In greenhouses we have the limitation that we can only give one single amount of water per row. And since a row with new crops might have a variable crop growth, it will impact the soil moisture content of the substrate. Resulting that well grown crops have a low soil moisture, while other plants which lack behind might have their root zone soaking.*

*The main approach is to find out a way in which we can provide each plant enough water depending on its growth. This might be measured in soil-moisture, but perhaps soil suction could also be a valid parameter. Then there is the numbers game: we need to be able to control the water strategy for each plant. That is the hard part.*

*We are looking for a student/start-up or enthusiast who is able to come up with new ideas and able to prototype these ideas. The WaterInnovator program assists with expert knowledge and setting up the prototype with you.*

## Research objectives:

- *Invent a way control the water strategy for each plant.*
  - *What are the prerequisites of these technologies?*
  - *Design and develop a first (and perhaps more) prototype.*
- *A first prototype should focus on the proof-of-concept. Afterwards we focus on the actual implementation into a greenhouse environment.*

## Contact:

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