Challenge opportunity: **Circularity in the horticulture**

global specialist in horticulture

Background:

Can you develop the tools to attain or contribute to 100% water circularity in the horticulture? Then be sure to apply to this Challenge!

In a circular water system the drain is reused. This means that an amount of nutrients, which were not taken up with the last irrigation cycle, are flowing back into the system. To prevent a high doses, or even a low doses, of a certain nutrient, one has to know what the water quality is of the drain. Currently, it takes a couple of days before the results from the laboratory are in. But that might be too late to prevent accumulation of a certain nutrient.

This means that some nutrients have to be removed from the water system. There are various ways of doing so. For example, one can remove sodium through an ion-exchange. Another way is to collect nutrients through a biological system. Either way, there is a great need to remove certain nutrients. Specific nutrients that we are focusing on is the removal of boron, zinc, sodium, phosphorus and nitrogen.

This challenge requires technical knowledge on ion-specific removal in water. Therefore, we are looking for a technical student/start-up that would like to test on lab-scale – and perhaps on small greenhouse scale – new ways to remove these test to 'tinker'. Someone with technical background in sensor design or a will to learn it. The WaterInnovator program assists with expert knowledge and assists you in the development and testing of the product

Research objectives:

- *In which part of the watersystem is real-time water monitoring an added value for the grower?*
- *Development of a prototype:*
  - *What are the prerequisites of these technologies?*
  - *Design and develop a first (and perhaps more) prototype.*

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