

## **2. The specific challenge – freshwater is not infinitely available.**

Managing the quality and quantity of global freshwater resources is one of the most imperative environmental challenges of the 21<sup>st</sup> century, with agriculture accounting for 70% of all global freshwater use. Population growth and increasing urbanization worldwide have elevated competition for freshwater resources among domestic, industrial and agricultural users, with agricultural water use deemed unsustainable in many parts of the world. As a dominant and growing segment of agriculture in the U.S., specialty crops are not immune to water quality and quantity issues. Several U.S. states have regulations in place and/or are under federal mandates related to watershed-based agricultural irrigation withdrawals, including specialty crop intensive areas such as the Chesapeake Bay watershed and Florida. Further restrictions are predicted by researchers and commercial nursery producers throughout the U.S. in the future. To meet the long-term freshwater needs of the world's population, it is critical to increase the efficiency of agricultural water use. The use of moisture sensing technology is a promising avenue to address irrigation efficiency without compromising crop quality.