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The role of plant breeding in enhancing water resilience

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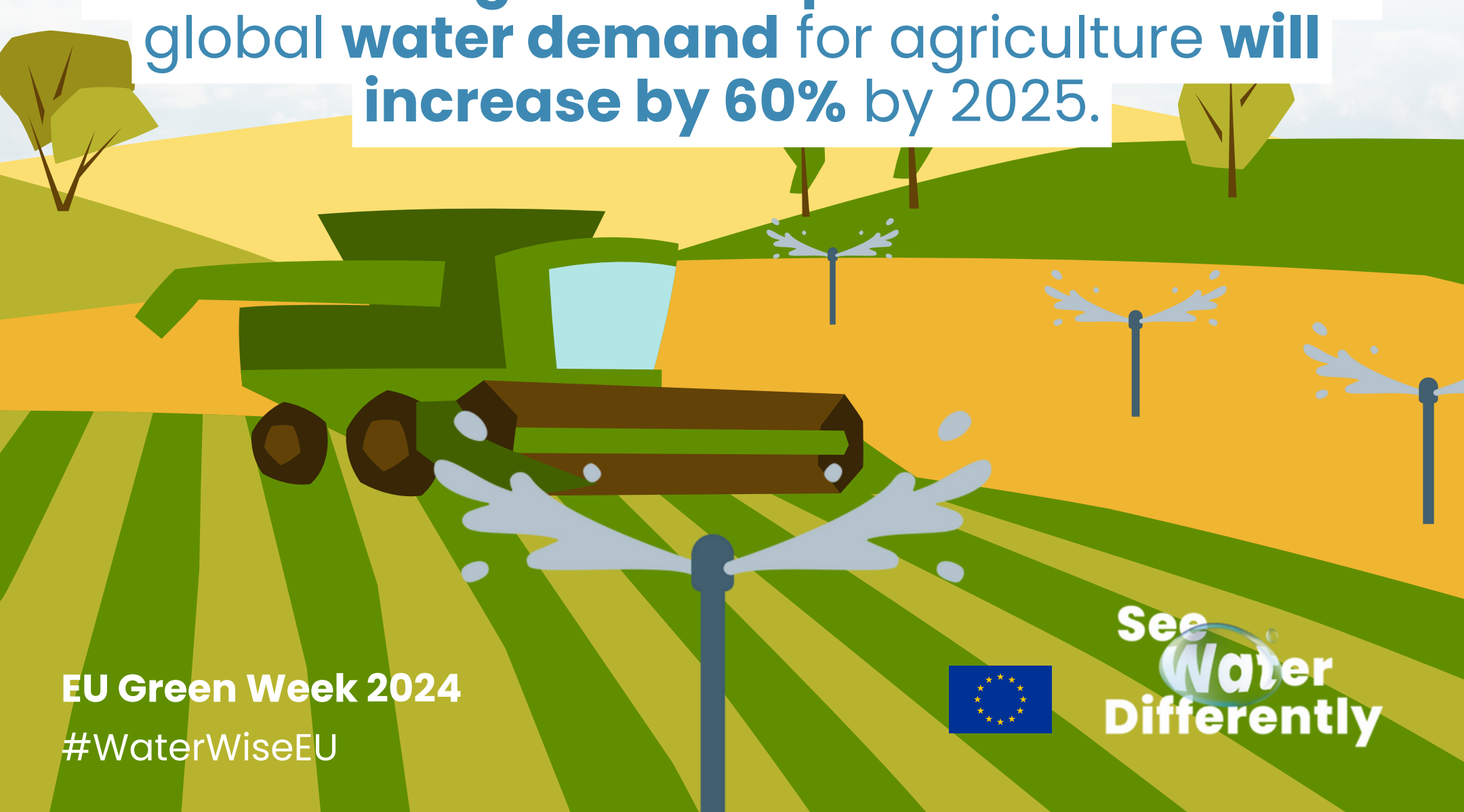
In most regions of the world, over **70% of freshwater** is used for **agriculture**.
By 2050, feeding a planet of 9 billion people will require an estimated **50% percent increase** in **agricultural production** and the global **water demand** for agriculture **will increase by 60%** by 2025.



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Water scarcity poses a significant **threat to global food security**, impacting crop yields and agricultural sustainability. With climate change intensifying droughts, the **need for water-resilient crops** is more **critical** than ever.

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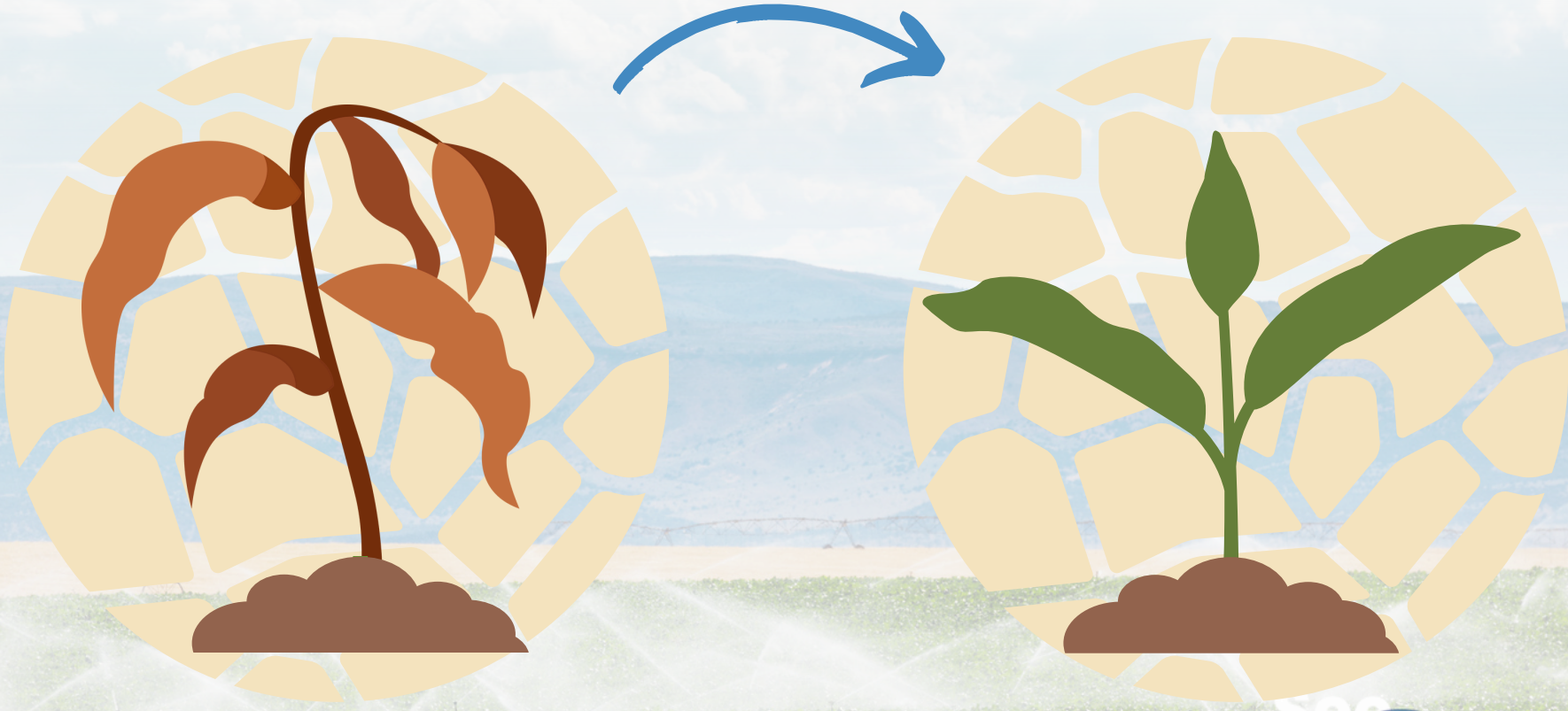
Plant breeding is a key solution to enhancing water resilience in crops. By **selecting and breeding** varieties with **drought-tolerant traits**, we can improve **crop yields**, **reduce water usage**, and **ensure food security** in the face of more extreme climate conditions.



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Plant breeders focus on developing crops with key traits that enhance water resilience:

* Deep, extensive root systems for improved water uptake from deeper soil layers
* Reduced leaf size or waxy coatings to minimise water loss through transpiration
* Ability to keep growing and maintain yield even when water is scarce during important growth periods.
* Osmotic adjustments to maintain water uptake and internal pressure under drought stress

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Advances in genomics, precision breeding, and gene editing are revolutionising plant breeding practices.

These cutting-edge tools help accelerate the development of crops with improved water resilience, paving the way for sustainable agriculture in the face of climate change.

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collaboration is key

Successful plant breeding initiatives often involve **public-private partnerships**, combining the expertise and resources of research institutions, government agencies, and private companies. These collaborations accelerate the development and deployment of water-resilient crop varieties, ensuring their widespread adoption by farmers.

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