

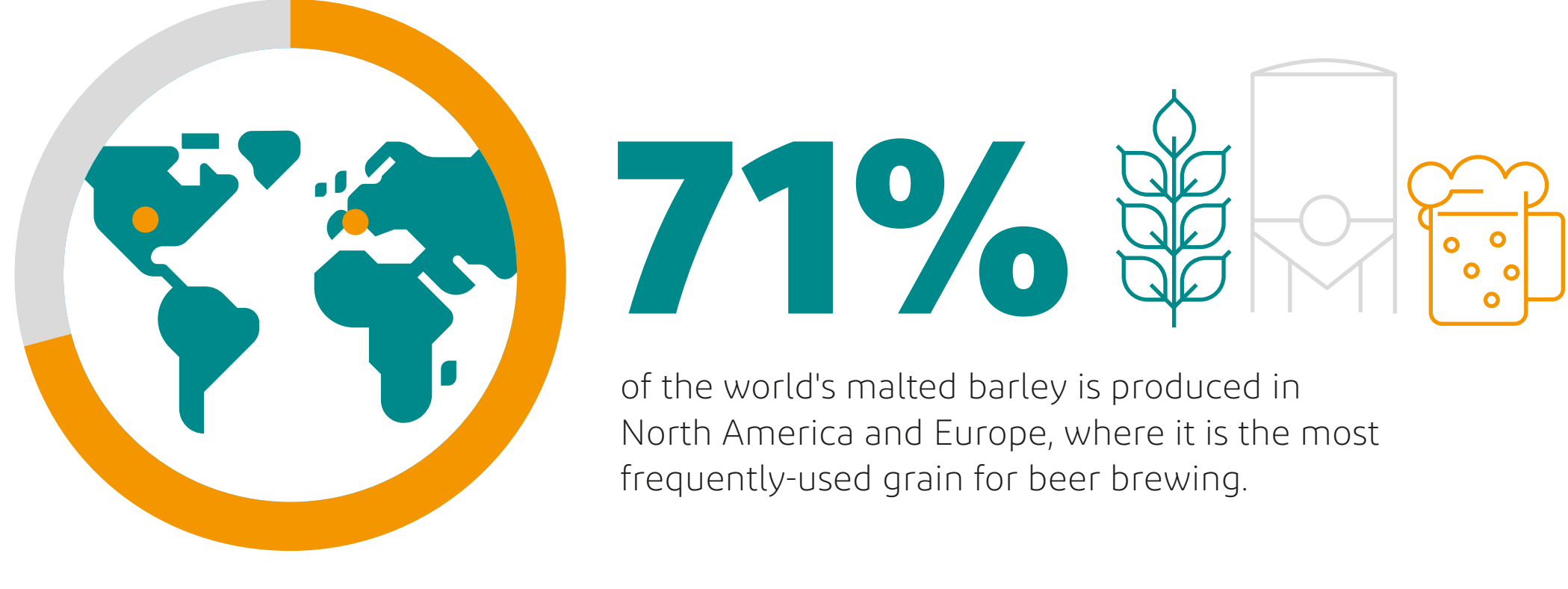
# Brewing for sustainability

Many leading industrial breweries are looking to introduce sustainable solutions into the brewing process.

Guided by the targets outlined by the United Nations' **Sustainable Development Goals**, brewers are looking to lessen their environmental impact in various ways, e.g. by cutting back on water and energy usage, as well as reducing greenhouse gas emissions and land use.

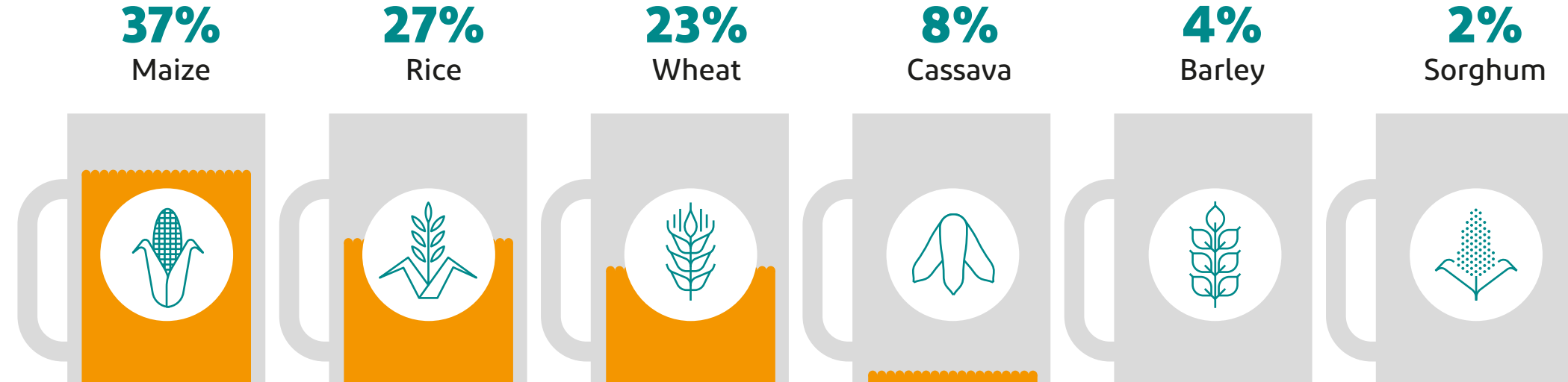
The DuPont Nutrition & Biosciences master brewers and portfolio of brewing enzymes offer innovative solutions to help the industry meet its sustainability goals.

## Brewing materials worldwide



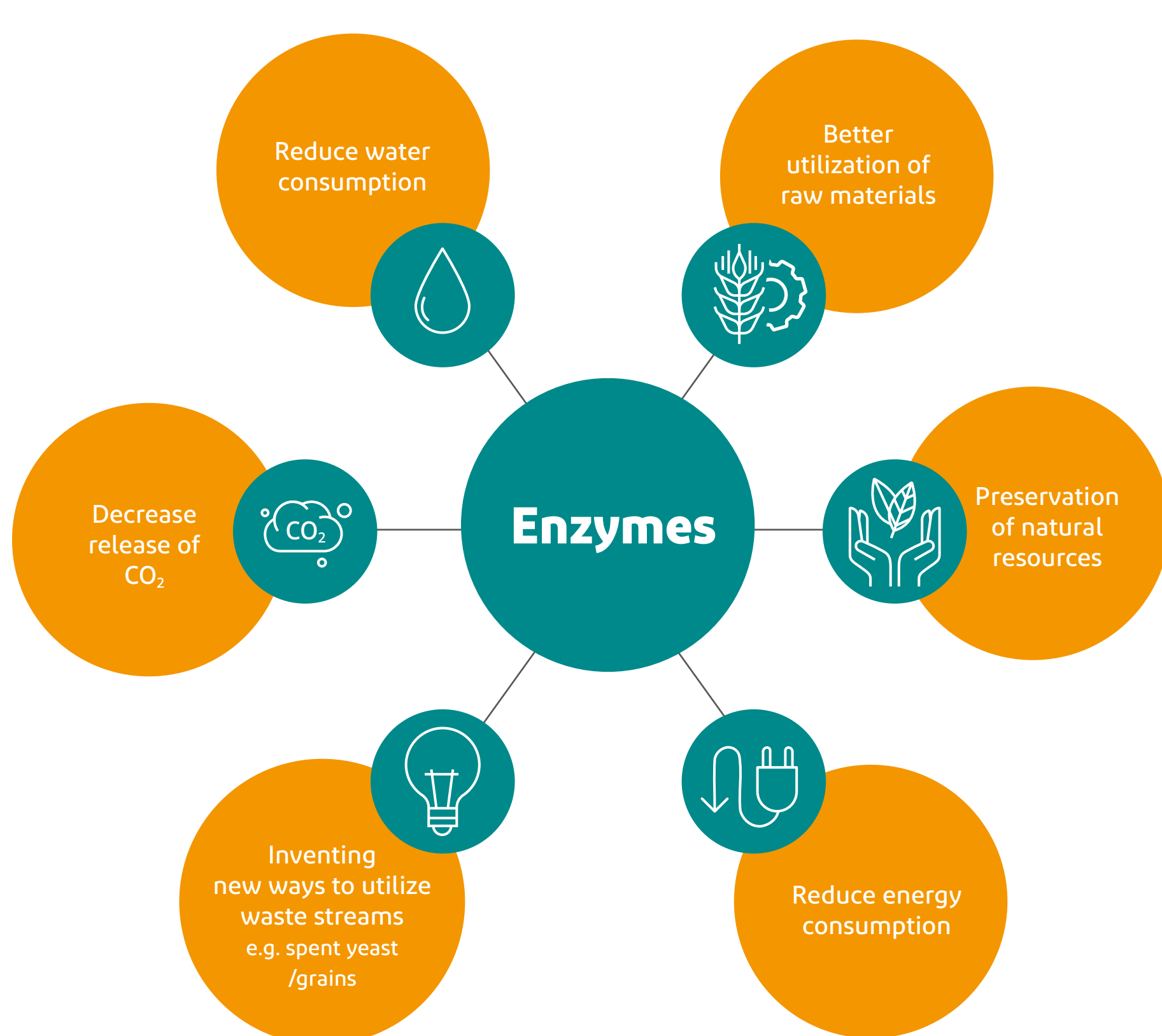
Nevertheless, barley and malted barley have their limitations and are only part of a wide range of potential brewing ingredients around the world.

## Brewing raw materials produced worldwide



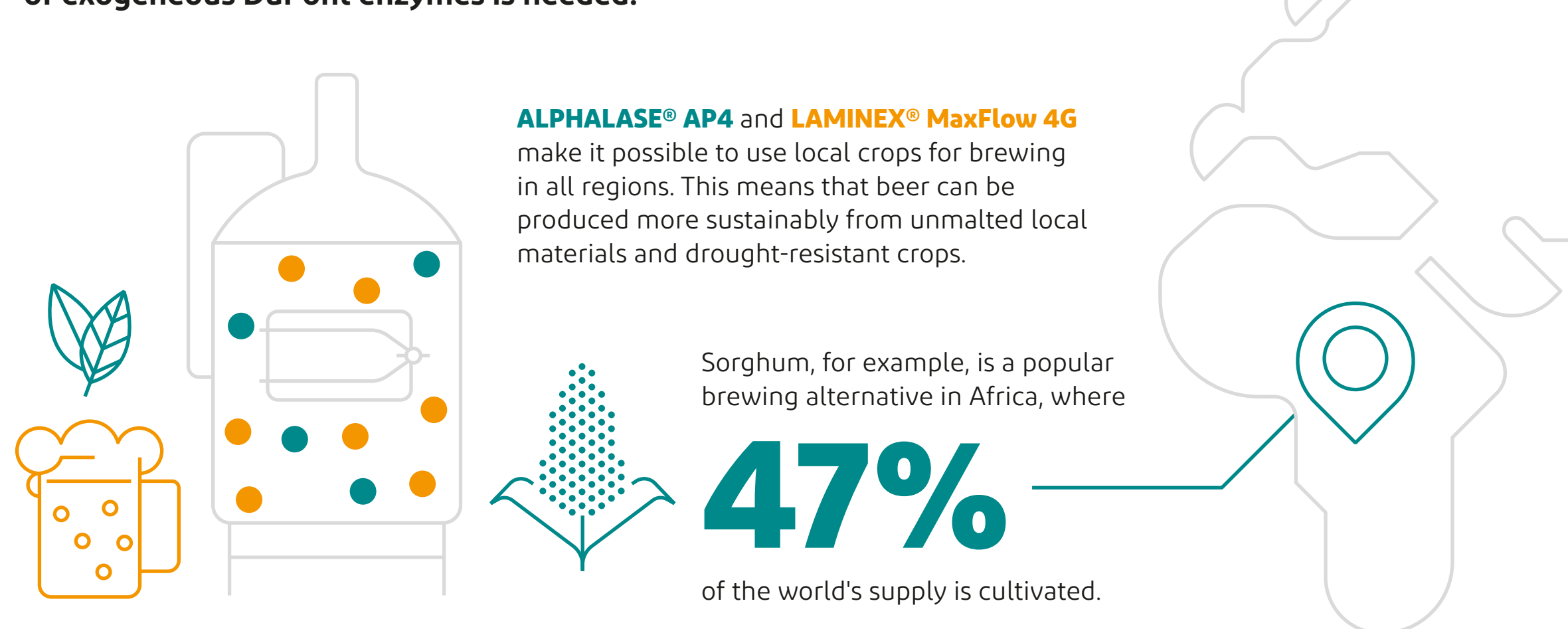
## Enzyme solutions for efficient brewing

Whether brewers choose to produce beer with barley, rice, sorghum, maize or other ingredients, our DuPont range of enzymes serves to fill the enzyme gap in alternative raw materials and unlock them for optimal brewing results.



## Enzyme solutions for alternative raw materials

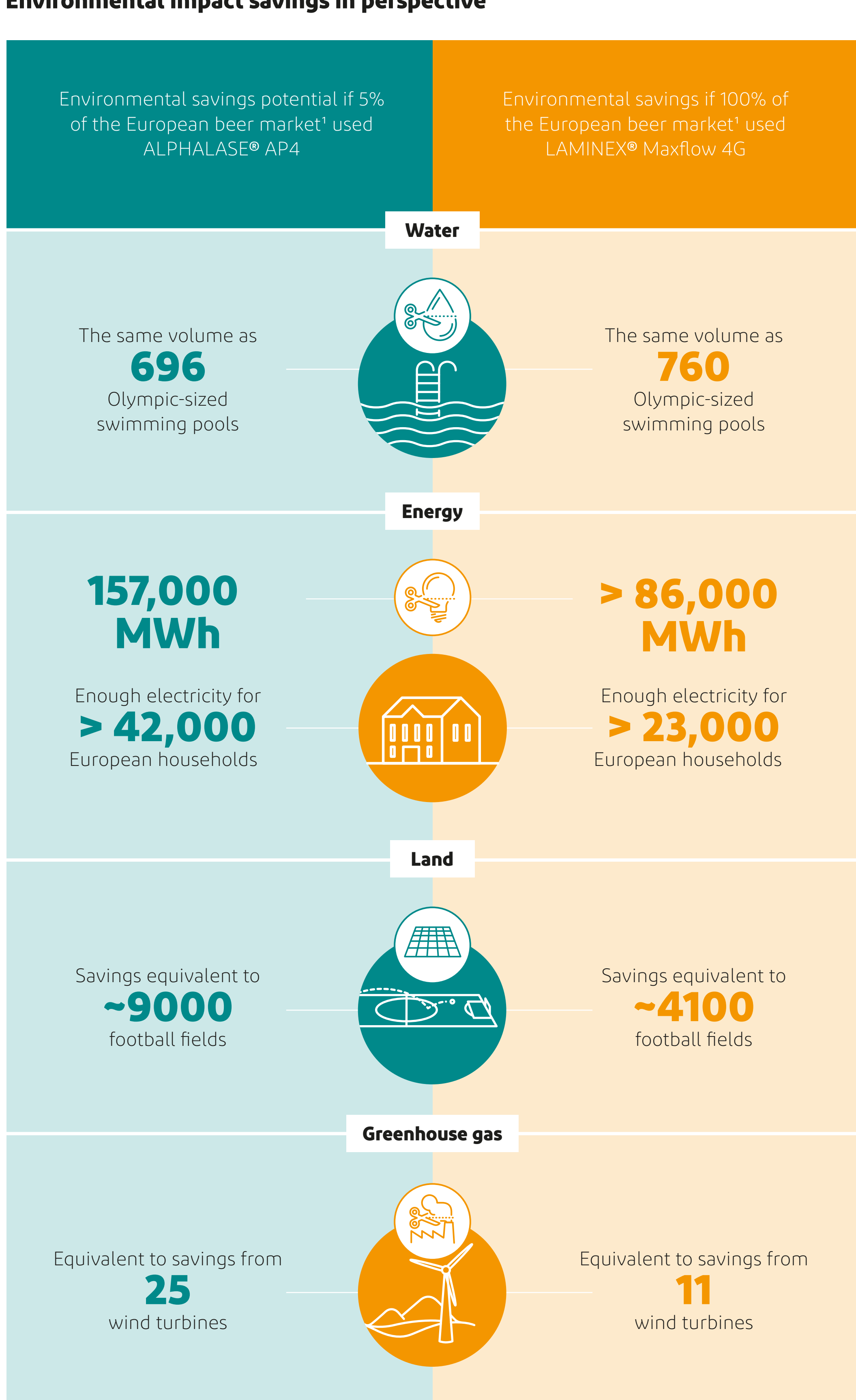
The endogenous enzymes in malted barley are a critical component in the brewing process, however these enzymes are not necessarily present in other types of grains/adjuncts. When other brewing ingredients are in use, **a boost of exogenous DuPont enzymes is needed.**



## Our sustainable answers

<p><b>ALPHALASE® AP4</b> Getting the most out of barley and reducing water consumption</p> <p>By supplementing natural enzymes in the mash, <b>ALPHALASE® AP4</b> enzyme solutions enable brewers to avoid the energy and <b>water intensive malting</b> process and improve the conversion yield of barley to beer.</p> <p><b>UN Sustainable Development Goals addressed:</b></p> <ul style="list-style-type: none"> <li>2 ZERO HUNGER</li> <li>7 AFFORDABLE AND CLEAN ENERGY</li> <li>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</li> <li>13 CLIMATE ACTION</li> </ul>	<p><b>LAMINEX® MaxFlow 4G</b> Reducing wort viscosity and environmental impacts</p> <p>Using <b>LAMINEX® MaxFlow 4G</b> to improve mash separation and beer filtration enables brewers to increase barley yield and reduce energy and water consumption associated with cleaning.</p> <p><b>UN Sustainable Development Goals addressed:</b></p> <ul style="list-style-type: none"> <li>6 CLEAN WATER AND SANITATION</li> <li>7 AFFORDABLE AND CLEAN ENERGY</li> <li>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</li> <li>13 CLIMATE ACTION</li> </ul>
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## Environmental impact savings in perspective



<sup>1</sup>Excluding Germany, Austria, and Switzerland

## Brew something different

Profit from the power of brewing enzymes and sharpen your competitive edge with cost-effective production, optimal raw material use and higher yield.

For more information, please see: <https://www.dupontnutritionandbiosciences.com/brewing.html>

Source: Food & Agriculture Organisation of the United Nations FAOSTAT Data, 2018 production data  
DuPont: ALPHALASE® AP4: An enzyme solution to reduce water use through barley brewing  
DuPont: LAMINEX® MaxFlow 4G: Reducing wort viscosity and environmental impacts

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