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# Thirst for change

Accelerating progress to a water secure world  
in the food sector



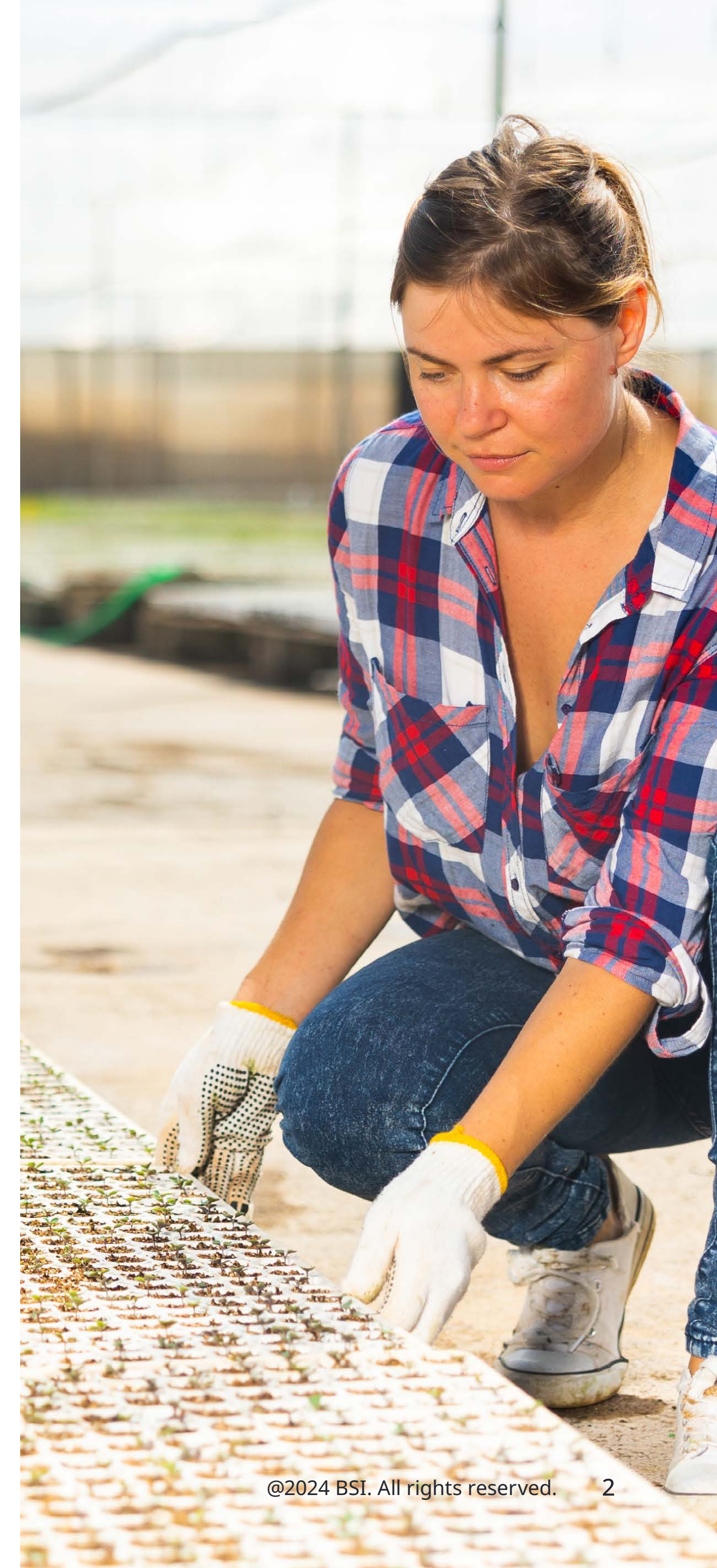
**Todd Redwood**  
Global Managing Director  
– Consumer, Retail & Food,  
BSI

Our food supply relies on freshwater, to grow crops and for manufacturing, production and of course cooking. But the food and agricultural sector also impacts global water security. Approximately 69% of freshwater withdrawals globally are from agriculture<sup>1</sup>, and the Food and Agriculture Organization (FAO)<sup>2</sup> estimates that between 2,000 and 5,000 litres of water are needed to produce a person’s daily food needs.

The sector has a significant role to play in protecting our water resources for continued food production, and for the health of people and the planet. Fortunately, there are many solutions the sector can adopt to support water security – many of which could also offer commercial benefits.

Collaboration, innovative farming techniques and use of technology are just a few of the many ways the food and agriculture sector can mitigate its impact on water supplies. By adopting tools such as water labelling of products, the sector can also engage and appeal to customers. And there is a consumer dividend to be won; according to BSI’s research, food and beverage consumers said they would be willing to spend more on brands that are acting on water efficiency over those that are not.

We all rely on the food and agriculture sector, as much as we do on water. By acting now the sector can continue to provide essential food resources for society, whilst also driving positive change for the security of our essential water resources.



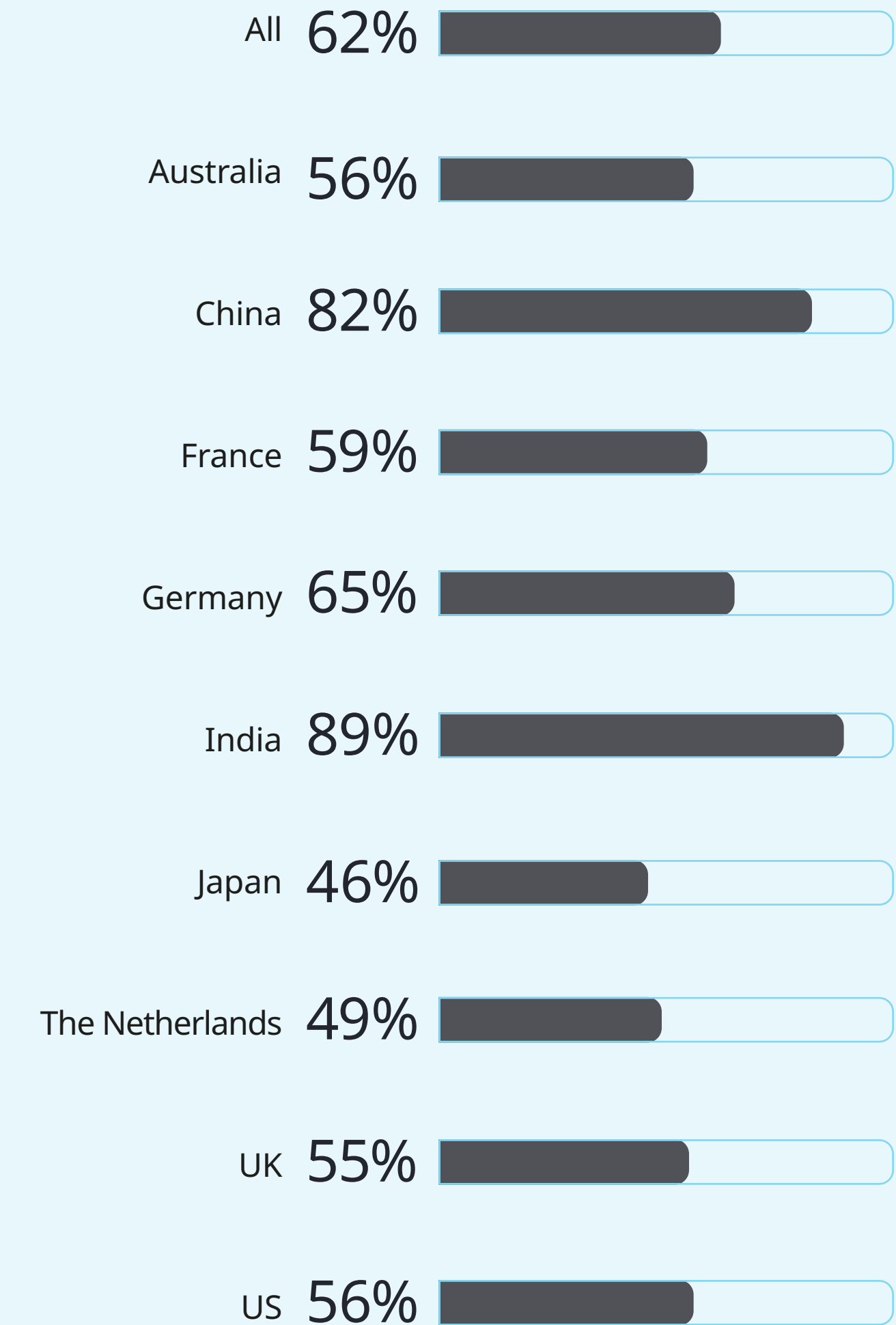
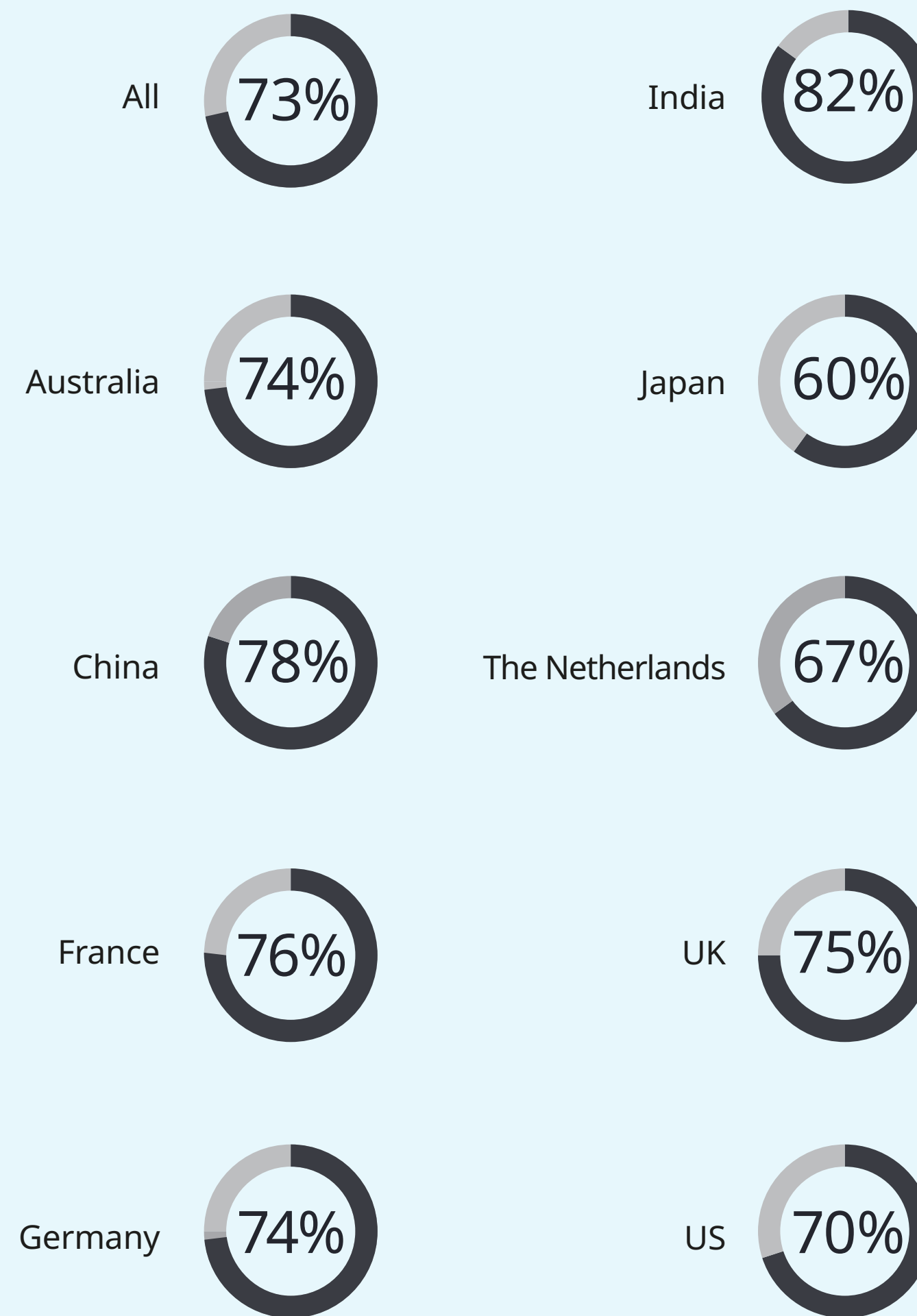
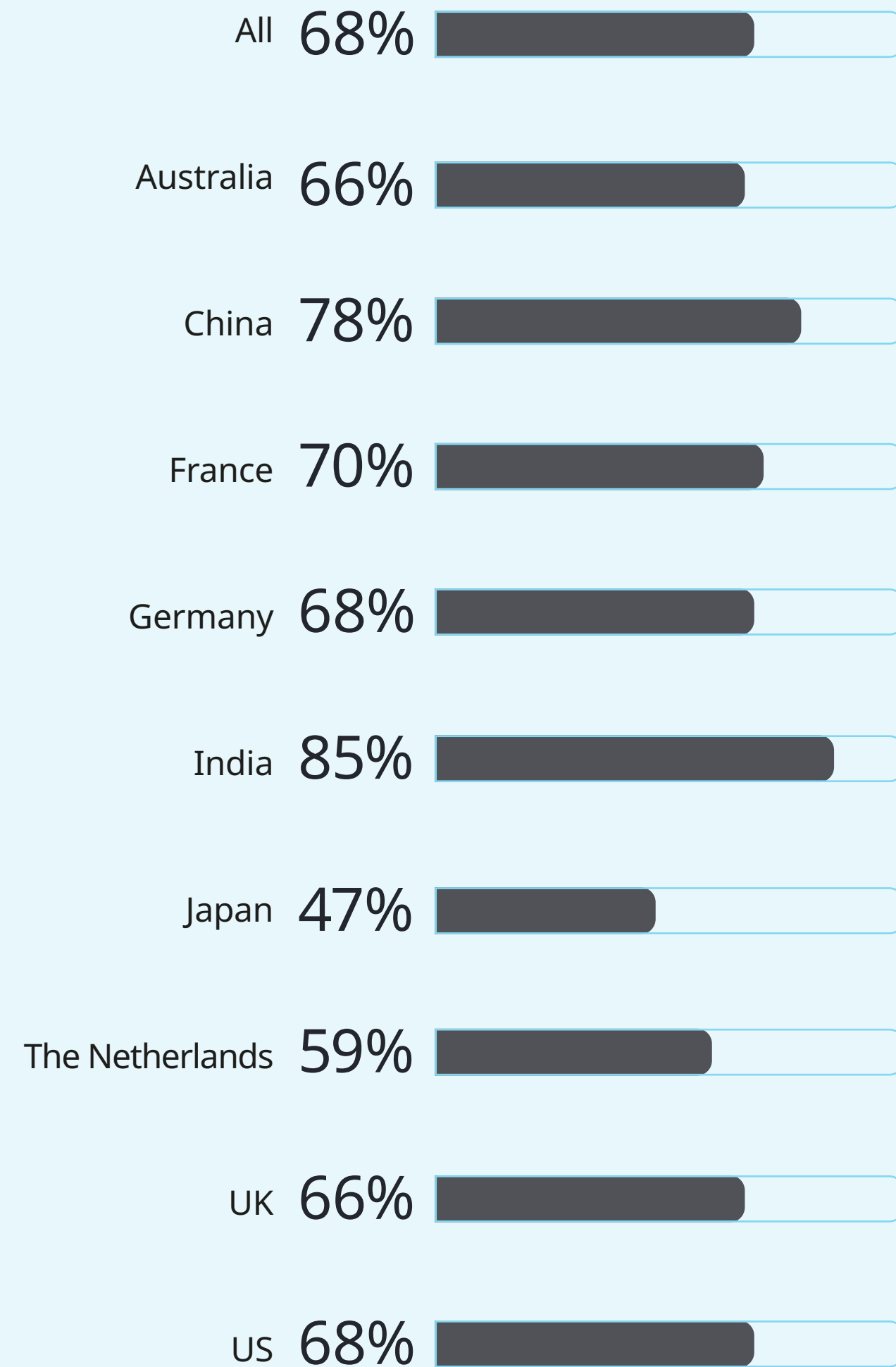
<sup>1</sup> <https://www.bsigroup.com/siteassets/pdf/en/insights-and-media/insights/white-papers/bsi-thirst-for-change-final.pdf>  
<sup>2</sup> [Water, Food and Agriculture Organization of the United Nations](#), accessed September 2024

# Purchasing decisions associated with water security measures

More willing to purchase food or beverage from a brand that demonstrates positive action on water efficiency, even at an extra cost

Willing to change consumer habits to support businesses demonstrating positive action on water efficiency, but only if not at an extra cost

Seek environmental sustainability claims when purchasing goods





Consumers are becoming increasingly aware of the sustainability credentials of the products they consume, with nearly two thirds (62%) of people saying they seek out sustainability claims when purchasing goods. This is even more prevalent in the food sector, where nearly seven in ten (68%) of people say they would be willing to spend more on food or beverage products from a brand that demonstrates positive action on water efficiency. This number further increases where there is no extra cost to the consumer, with three quarters of people willing to shift support to businesses demonstrating positive action on water efficiency where there are no increased costs to the consumer.

Water labelling is one way the food sector can effectively communicate this information and the public certainly have an appetite for it; three quarters say they would be keen to see water labelling to understand the amount of water used in making the products they purchase to help them to make more sustainable decisions. But this isn't only beneficial to consumers wanting to make sustainable purchases, it also has proven to be effective at reducing water use. In Australia, the Water Efficiency Labelling and Standards (WELS) scheme is estimated to have saved approximately 112 gigalitres<sup>3</sup> (GL/Year) per year between 2017-2018.

The sustainability gains of becoming more water efficient are clear for the food and farming sector. But as the data makes clear, there is also a commercial prize of taking and demonstrating action to become a market leader known for water secure food production and manufacturing.

**73%**  
of people want to see water labeling on products

<sup>3</sup> [2020 Independent Review of the Water Efficiency Labelling and Standards Scheme and Intergovernmental Agreement](#), Allen + Clarke Consulting, July 2021

# Water security solutions



## Recommendations for the food sector from Richard Werran, Global Director, Consumer, retail & food, BSI.

Richard's career spans 45 years in the food sector, starting as an New Product Development food technologist before moving into commercial roles across the international food ingredient and manufacturing sectors.

## Agriculture

### Drip irrigation systems

These are remarkably efficient and up to 50% less water compared to sprinkler systems by releasing water directly into plants and reducing evaporation and runoff.

### Monitor soil moisture content

This makes for better informed irrigation practices. It allows irrigation to be adjusted based on climate variability and drought conditions, conserving water when irrigation isn't necessary and avoiding soil erosion and water pollution.

### Utilize AI

AI can support agriculture to reduce water usage by helping to implement smart irrigation systems, monitoring plant health to detect diseases and pests early, optimise irrigation strategies based on real-time data and actionable insights, and using AI algorithms to analyze data and make informed decisions on irrigation timing and duration.

### Greenhouses

The closed environment of greenhouses can reduce water loss by recirculating water and reducing evaporation rates. This can support the implementation of drip irrigation systems, allow for closer crop spacing to reduce water wastage, and result in shorter crop cycles, meaning less water being used over the entire growing season.

## Food processing

### Use Clean-in-place (CIP) systems

CIP systems are automated, integrated systems used in food production to clean the interior surfaces of process equipment components without disassembly. CIP systems incorporate automated solutions such as pressurized water, final rinse water recycling and spray devices that minimize cleaning time and reduce water usage in the cleaning process.

### Water monitoring

Monitoring water use in food processing facilities can provide valuable feedback for water use optimization. Flowmeters, temperature sensors, pressure sensors, water quality sensors, leak detectors and submetering systems can help to track and allocate water use and reduce leakage.

## Enabling a more sustainable food supply with hydroponic agriculture

Globally, 70% of freshwater is used for agriculture<sup>4</sup>. Hydroponics is a soilless farming technique that circulates nutrient-rich water directly to the plant in a closed-loop system. It uses approximately 70 to 95% less water compared to conventional field farming<sup>5</sup>. Through the closed-loop system water can be recycled, preventing wastage, nutrient leaching, and run-off. Growing conditions can be controlled precisely, and fresh leafy greens, fruit and vegetables can be grown year-round. When used in a vertical farming system, space is maximized, benefiting expanding urban areas.

Urban vertical farms are already in operation on rooftops in New York and in disused underground bunkers in London. At Gotham Greens in the US, under four litres of water is used to produce one lettuce, 15 times less than traditional farming. Hydroponics and vertical farming can potentially contribute to food and water security. However, downsides include high startup costs and high energy demand from artificial lighting.

<sup>4</sup> Chart: Globally, 70% of Freshwater is Used for Agriculture, World Bank, March 2017  
<sup>5</sup> How Vertical Farming and Hydroponics can Save Space and Water while Producing Fresh and Nutritious Food, Agritech Digest, November 2023





Find out more about sustainability  
in the **food sector**

Explore the **Thirst for Change campaign**

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