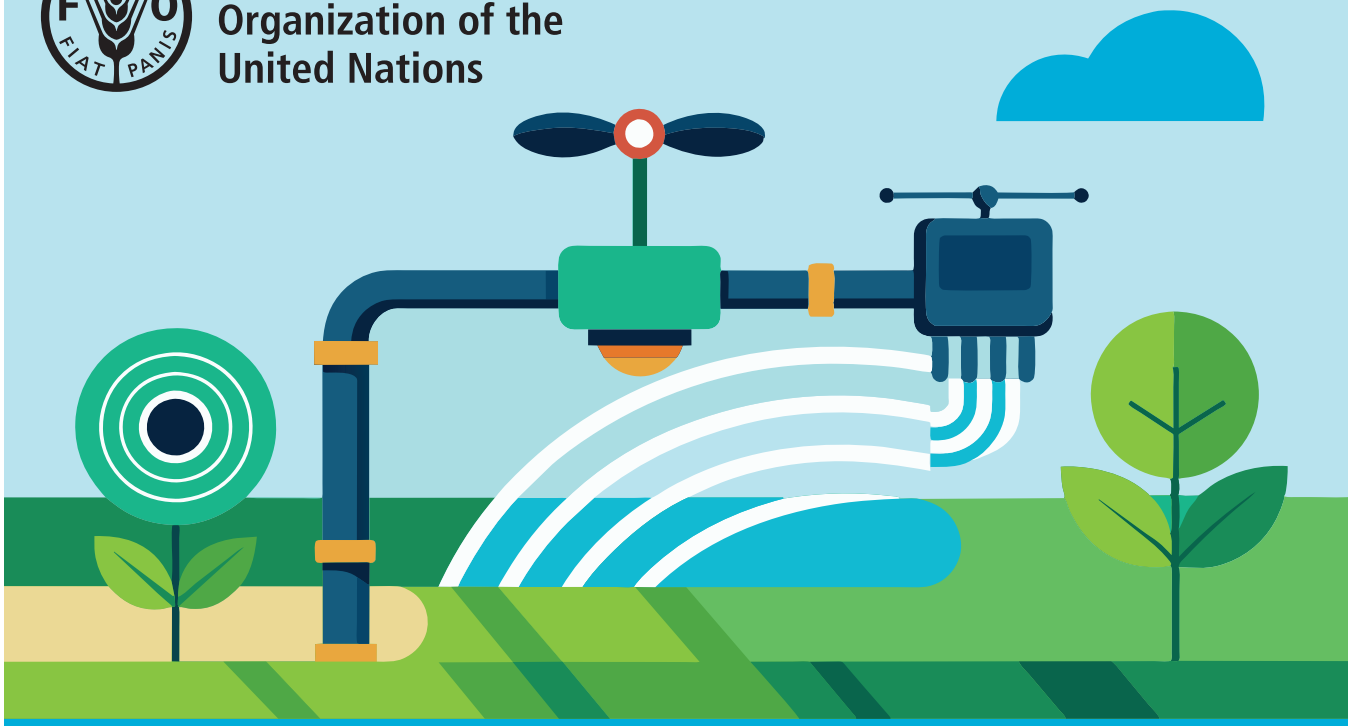
Food and Agriculture Organization of the United Nations



VISUAL SUMMARY

Progress on Change in Water-Use Efficiency

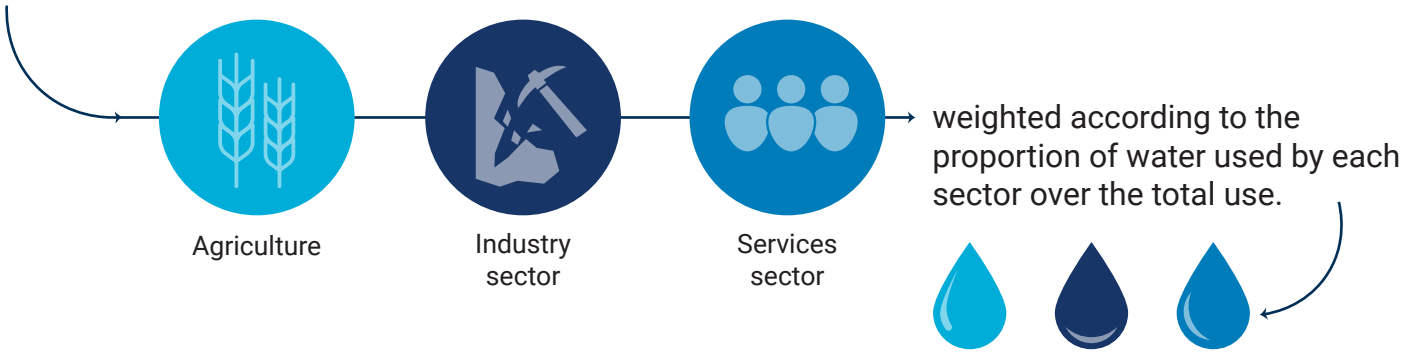
Mid-term status of SDG Indicator 6.4.1 and acceleration needs, with special focus on Food Security and Climate Change

2024

United Nations | UN WATER

Introduction

Water use efficiency (WUE) is calculated as the sum of the efficiency of the three main economic sectors expressed as the sectoral Gross Value Added (GVA) per water use (USD/m3),



WUE provides an estimation of the reliance of the economic growth of a country on the use of its water resources. The change in WUE measures the capacity of the economy to grow without overexploiting its water resources.

SDG Indicators 6.4.1 and 6.4.2, were specifically designed to monitor progress towards achieving **SDG Target 6.4,** which aims to:

> By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

SDG TARGET 6.4

Focus on critical issues related to **water use and scarcity**

OBJECTIVE
Ensure water resources for:

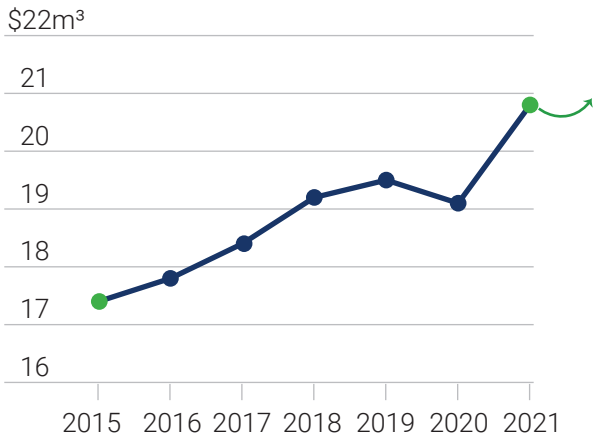
- **People**
- **Economy**
- **Environment**

The Food and Agriculture Organization (FAO) is the custodian agency for SDG Indicators 6.4.1 and 6.4.2, responsible of gathering data and computing the indicator in collaboration with national focal points to ensure accuracy and reliability of the indicators.

Key Messages

Change in water-use efficiency over time is a macroeconomic indicator, which yields the growth rate of the WUE (USD/m³) as percentage.

PROGRESS IN THE GLOBAL WATER-USE EFFICIENCY



Change from 2015 to 2021 worldwide:

19.3% efficiency increase

There has been a **trend of gradual global improvement in the WUE** with an exception in 2020, likely attributable to the impact of the COVID-19 pandemic crisis.

The global values of WUE mask regional disparities.

Oceania, Northern America and Europe exhibit WUE levels surpassing the world average.

Eastern Asia, South-eastern Asia and Central and Southern Asia display notable increases.

Latin America and the Caribbean is the sole region exhibiting a decrease in WUE of nearly seven percent.

Central Asia and Southern Asia record the lowest levels.

There has been an increase in the WUE since 2015 across all economic sectors.

IRRIGATED AGRICULTURAL SECTOR
▲ 35.6%

INDUSTRIAL SECTOR
▲ 30.8%

SERVICES SECTOR
▲ 6.3%

Global water use data from 2015 to 2021 indicate a marginal decrease in global water withdrawals by 0.1 percent. Only the services sector shows a rise in water use.

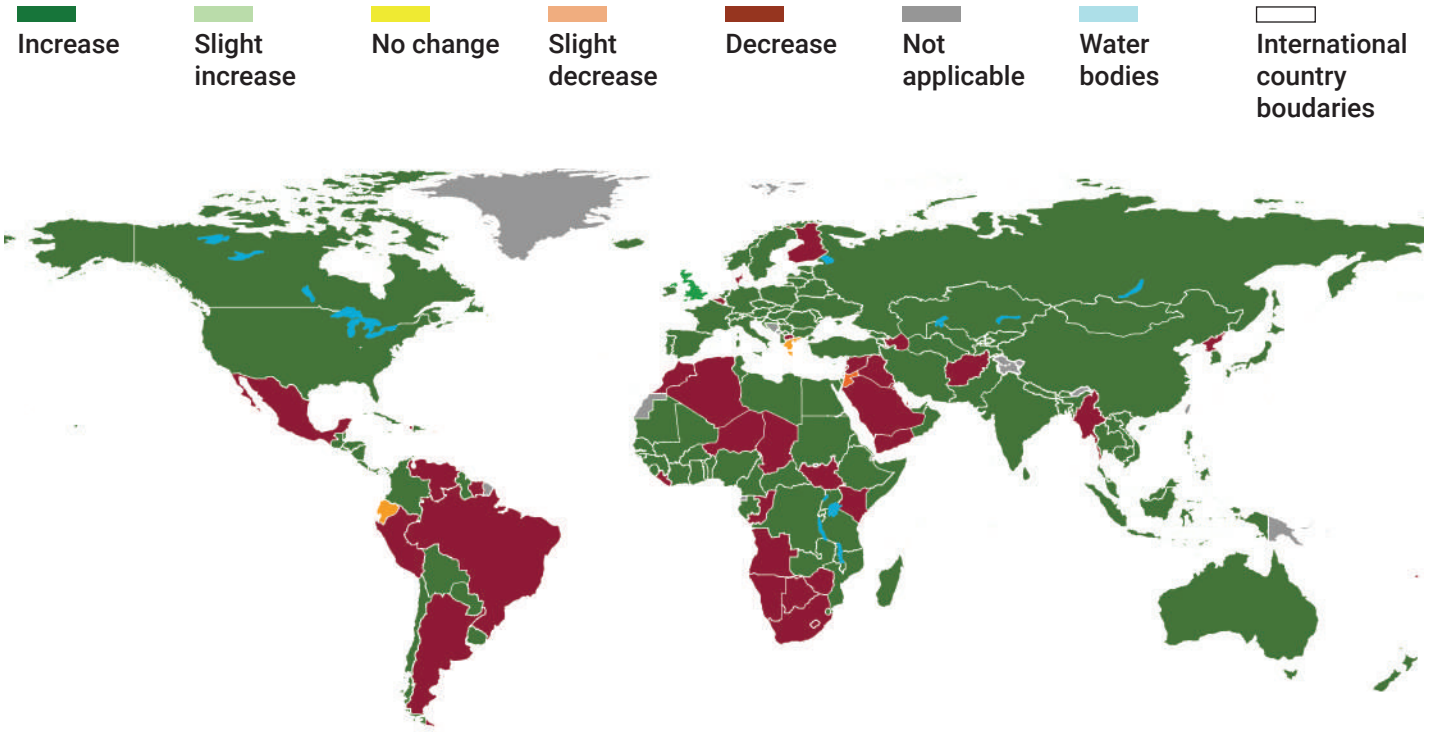
AGRICULTURAL WATER USE
▼ 0.6%

INDUSTRIAL WATER USE
▼ 6.5%

SERVICE WATER USE
▲ 10.6%

Water-use efficiency (WUE) varies significantly between countries within the same region. According to 2021 data, WUE values have decreased in 44 countries, but increased in 120.

WATER-USE EFFICIENCY CHANGE BY COUNTRY FROM 2015 TO 2021



NOTE: *Increase:* increase in water-use efficiency by more than 1%. *Slight increase:* increase in water-use efficiency by 0.5 to 1%. *Decrease:* decrease in water-use efficiency by more than 1%. *No change:* increase/decrease in water-use efficiency by less than 0.5%.

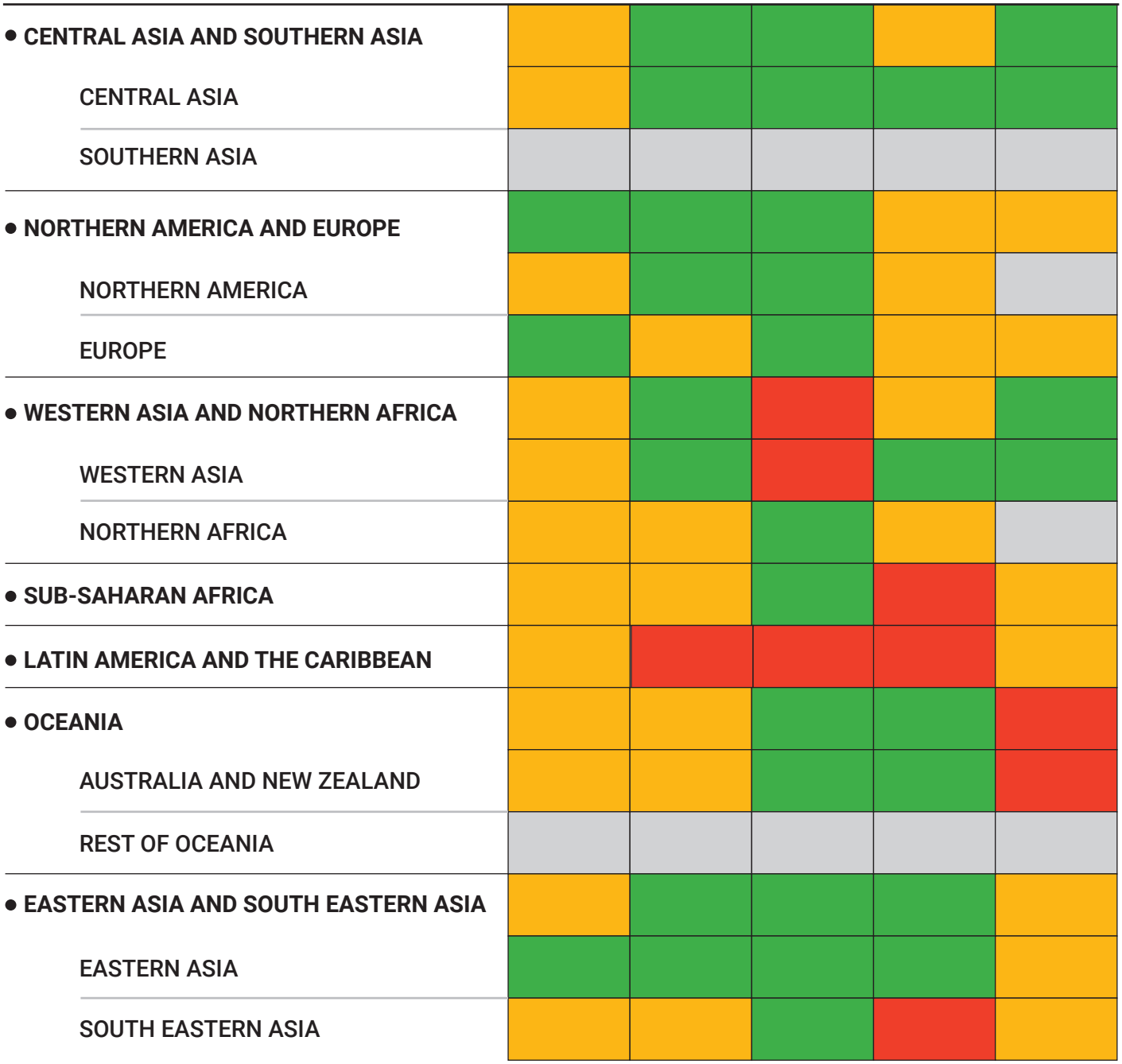
Understanding the socioeconomic context in a country, in conjunction with analysing the various components of the indicator as the sectoral Gross Value Added (GVA) and trends in sectoral water withdrawals, is key to fully understand the significance of the indicator.

REGIONAL ANALYSIS OF ECONOMIC GROWTH AND WATER USE DECOUPLING

Progressing in terms of increasing water-use efficiency

GVA grows faster than the water use, but water use still increases

Water use outpaces economic growth



NOTE: *2015 is used as a baseline. Gray colour* indicates a lack of available data.

Conclusions and Recommendations

The report shows that from 2015 to 2021, **water-use efficiency has shown a positive trend** both globally and across the three main economic sectors. This is the result of slight global water use decrease in global water withdrawals and the increase in the GVA in all sectors.

At country level 72% of the 166 countries analysed demonstrated improvements in WUE.

However, it's essential to examine the **macroeconomic structure of each country** to fully understand and assess changes in each specific sector.

To improve water use efficiency, targeted actions must be implemented in these key areas:

01 SCALING UP BEST PRACTICES AND INNOVATIVE TECHNOLOGIES

- Adopt innovative practices to reduce water consumption, such as reusing treated wastewater in irrigation, industrial and municipal uses and advancing circular economy approaches.
- Enhance crop and irrigation technologies.
- Improve access to markets to smallholders.
- Implement strategies to minimize food waste and losses, which indirectly conserves water resources
- Adopt water-saving technologies in industrial processes.
- Use leak detection technologies in water distribution systems.

02 IMPROVING GOVERNANCE

- Implementing Integrated Water Resources Management (IWRM) Action Plans to improve water governance, aligning them with climate change and adaptation and mitigation strategies.
- Implementing clear and equitable water rights systems to ensure inclusive allocation of water resources and prevent over-extraction.
- Strengthening monitoring and enforcement mechanisms to ensure compliance with water use regulations and water efficiency standards.

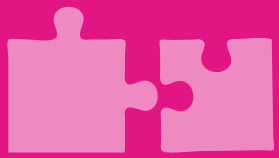
03 CAPACITY DEVELOPMENT

- Providing farmers with education and training on efficient irrigation techniques such as drip irrigation and rainwater harvesting to produce more with less water.
- Strengthening agricultural extension services to disseminate knowledge about water-efficient practices and technologies.
- Promoting industry certifications and standards focused on water efficiency to encourage businesses to adopt sustainable water management practices.
- Implementing public awareness campaigns to educate consumers and businesses about the importance of water.
- Building capacity for local governments and service providers to develop water efficiency policies and regulations.

04 FINANCING

- Providing financial support for the adoption of efficient irrigation systems to optimize water use and increase crop yields.
- Providing financial products such as crop insurance to incentivize the adoption of water -saving technologies.
- Providing financial incentives for water reuse.
- Implementing tax benefits and credits for industries that invest in water-efficient technologies and infrastructure.
- Facilitating Public-Private Partnerships to fund innovations in the water service sector.

05 ADDRESSING DATA GAPS



- Improve data collection and analysis on water withdrawals across economic sectors to enable more precise estimations of water use efficiency.
- Perform water accounting assessments to prevent ineffective water management practices and potential negative trade-offs.
- Use supplementary indicators at national level, including efficiencies in irrigation, municipal networks, and industrial and energy sector cooling efficiencies.

Optimizing water-use efficiency promotes sustainable agriculture and resilient food systems.

6 CLEAN WATER AND SANITATION

SDG 6 Progress Update Series, by SDG 6 global indicator

This Visual Summary is part of a series of reports providing an in-depth update and analysis of progress towards the different SDG 6 targets and identifies priority areas for acceleration: Progress on household drinking water, sanitation and hygiene (SDG indicators 6.1.1, 6.2.1), Progress on wastewater treatment (6.3.1), Progress on ambient water quality (6.3.2), Progress on water-use efficiency (6.4.1), Progress on level of water stress (6.4.2), Progress on integrated water resources management (6.5.1), Progress on transboundary water cooperation (6.5.2), Progress on water-related ecosystems (6.6.1) and Progress on international cooperation and local participation (6.a.1, 6.b.1).

The reports are produced by the responsible custodian agencies, coordinated by UN-Water through the Integrated Monitoring Initiative for SDG 6 (IMI-SDG6). They present the latest available country, region and global data on the SDG 6 global indicators, and are published every two to three years.

To know more about the SDG 6.4.1 indicator, please visit the FAO IMI-SDG6 dedicated website and AQUASTAT website.

See the full collection of reports and associated products at www.unwater.org/publications/sdg-6-progress-reports or scan the QR code below.