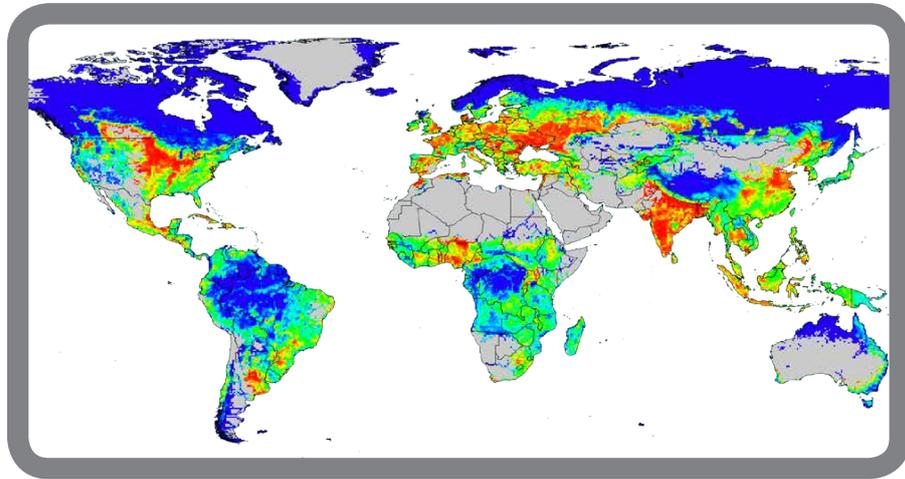


# COMPASS

navigating the water challenges  
of the 21<sup>st</sup> century



# WHAT IS COMPASS?

COMPASS is a comprehensive assessment system for global water resources that can be used for infrastructure planning for domestic, industrial, and agricultural water use; for monitoring progress on UN Sustainable Development Goal implementation; and for identifying business opportunities and risks in water-related sectors.



**Comprehensive Assessment of Water Resource Systems**

COMPASS produces indicators and indices that merge the latest satellite data with model outputs, in situ observations, socioeconomic information, and citizen data resources to produce continuously updated monthly assessments.



**Indicators & Indices for Monthly Assessments**



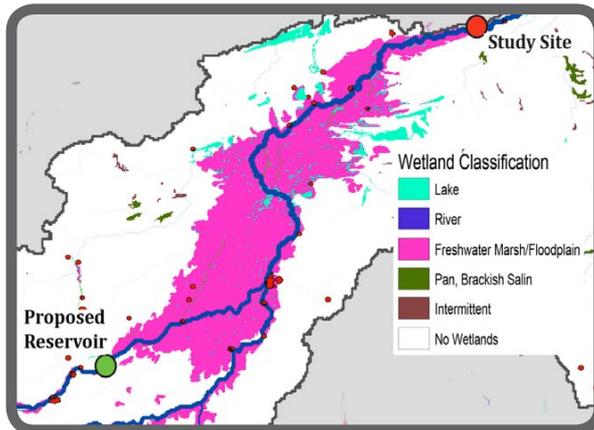
**COMPASS**  
An On-Demand, Technology-Enabled Comprehensive Assessment of Water Resource Systems

**Digital Tool Box**

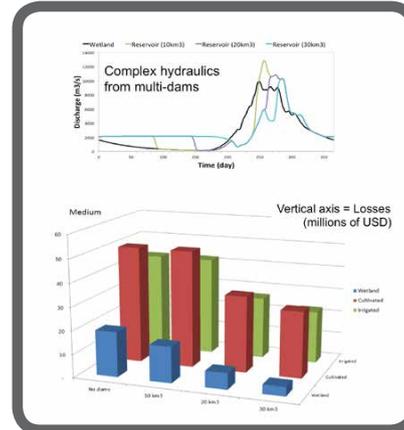


COMPASS is a state-of-the-art digital toolbox that detects, evaluates, and reports on existing, imminent, and emerging water resource challenges, from today through the SDG implementation period (2030).

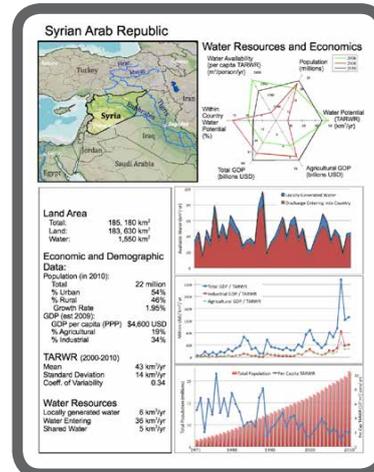
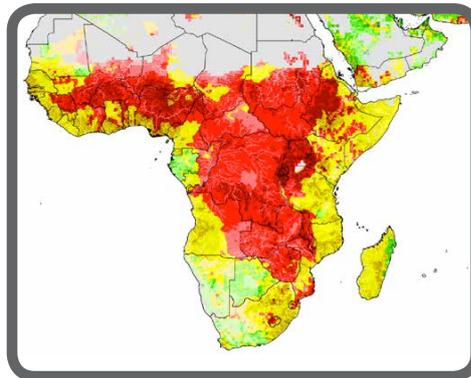
## Green & Gray Infrastructure Design



## Asset Loss Assessment



Diagnosing Emerging Patterns of Water Stress



National Water Report Cards

# VALUE ADDED

# BY COMPASS

## Improved Fidelity of Global Resource Inventories

Better manage water resources (quantity and quality) at global, regional, and national scales.

## Early Identification

Pinpoint emerging hotspots to enable governments, businesses, and individuals to act before emergency situations develop.

## Water Intelligence

Create a water intelligence data repository to identify emerging business opportunities.

## Monitor Progress

Support national governments and international bodies in tracking SDG progress and implementation.

## State of the Art for Timeliness

Use advanced science, observations, models, and technologies that form the basis of strategic, advisory, and consultative services.

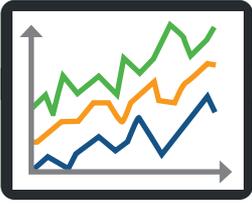
## Technology Support

Improve the technical capacity of developing countries to manage their strategic water resources.

## Identify New Opportunities

Lead dialogue on emerging research, exposing the importance of water science to the highest levels of government to inform critical decision-making.

# COMPASS PRODUCT SUITE



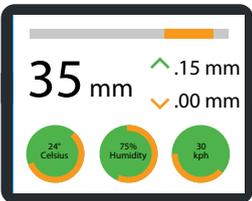
## Water State Index

A near-real-time index of the state of the global water resource base expressed in a standardized form, similar to the Dow Jones Index for market performance. The Water State Index is continuously updated over global, regional, and national domains.



## Medium-Term Water Trends

An extended projection of key water metrics, spanning both the historic UN Millennium Development Goals (from 2000) and SDG time horizons (to 2030), to assess progress or backsliding on key development imperatives dependent on the water resource base.



## Six-Month Water Outlook

A short-term forecast of emerging conditions to enable identification of impending water stress, which will be invaluable to emergency planners, business, and agricultural practitioners. The outlook combines state-of-the-art seasonal weather forecasts with projections of water use and current and forecasted economic activity.



## Business Intelligence Reports

Water analytics offered to subscribers who request data on emerging investment opportunities, risk maps for water-dependent sectors, and opportunities for innovative water technologies.



## Annual State-of-the-Resource Report Card

A synthesis of contemporary spatial patterns, trends, and extreme weather-related events with expert interpretations at global and sub-global scales (regional, national, sub-national).



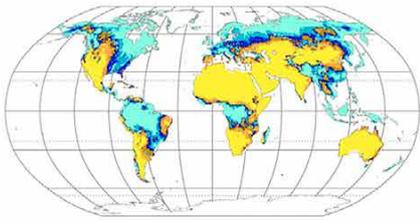
## SDG Report Cards

National, regional, and continental-scale assessments on SDG progress using standardized metrics and data collection protocols. Continuous monitoring supports priority-setting and effective policy decisions designed to accelerate achievement of the SDGs, particularly SDG 6 on water.

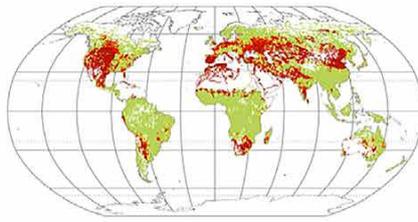
## What Else Do We Offer?

Unique and on-demand knowledge synthesis reports.  
Further information is available upon request.

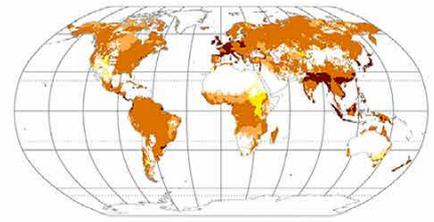
Climate Moisture Index



Water Reuse



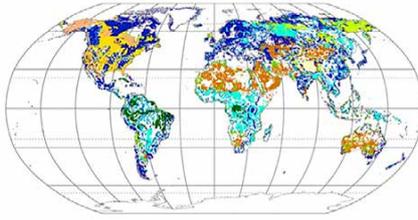
Nitrogen Flux



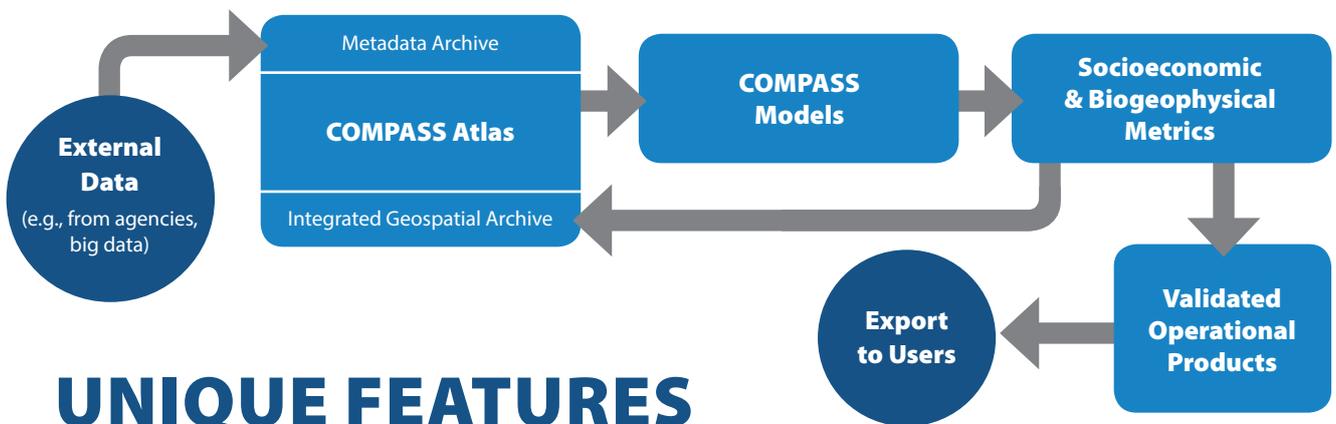
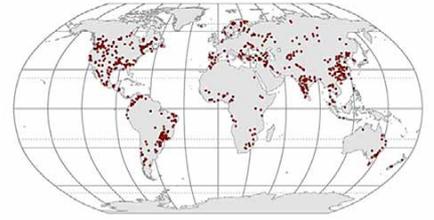
Active River Network



Wetlands



Dams & Reservoirs



# UNIQUE FEATURES OF COMPASS

## A Co-Design & Co-Production Process

A partnership of researchers, policymakers, and the business community ensures ongoing improvement and relevance of COMPASS.

## Transparency & Traceability

All information resources and methodologies used to create the COMPASS products will be in the public domain.

## Harmonized Data

COMPASS identifies, assembles, and makes best use of existing Earth observation, socioeconomic, and big data resources.

## Timeliness

COMPASS is constantly updated, over multiple time frames: monthly for contemporary conditions and six-month forecasts and annually through to the 2030 SDG time horizon.

## Authoritative, Standardized, & Modernized

COMPASS fills an important niche in the current water assessment process by moving from ad hoc and inconsistent water assessments, to a systematic standardized and near-real-time water intelligence product suite.

## Policy Relevance

COMPASS provides knowledge support to SDG policy implementation and customized water resource planning and decision-maker needs.

## Business Relevance

COMPASS identifies, over both space and time, inherent water-related risks and opportunities for private-sector investment in sustainable water resource development.

## Tangible Information Products

COMPASS provides expert-produced, customized, online data compendia, traditional publications, and presentation materials for unrestricted reuse by information consumers.

# COMPASS



## A WATER FUTURE INITIATIVE



[compass@water-future.org](mailto:compass@water-future.org)

[water-future.org](http://water-future.org)

## ***Water Future has a proven track record in comprehensive assessment and problem-solving***

The *Water Future Programme*, which hosts COMPASS, is a global platform facilitating international scientific collaboration to drive solutions to the world's water problems. *Water Future*, through its partnerships with a large number of researchers and stakeholders, works together to harvest and synthesize an authoritative scientific knowledge base to support achieving the Sustainable Development Goals (SDG) associated with water.

Comprehensive Water Assessments executed through COMPASS under the aegis of *Water Future* build on decades of water research under the Global Environmental Change Programs such as DIVERSITAS, International Geosphere-Biosphere Programme (IGBP), International Human Dimensions Programme (IHDP), World Climate Research Programme (WCRP), and nearly a decade of human-water research under the Global Water System Project (GWSP).

These integrative studies have successfully identified human impacts on hydrological and water resources dynamics within the global change science agenda. To ensure the success of COMPASS, *Water Future* has affiliated with several well-established, internationally recognized institutions dedicated to systematic worldwide assessment of water resources, including the UN World Water Assessment Programme (WWAP) of UNESCO, which coordinates the work of 31 UN Water Members and 38 Partners to produce the World Water Development Report (WWDR) series, SDG 6 Synthesis Report, and many specially themed studies.

## COMPASS Executive Team

**Charles Vörösmarty (Chair)** City University Of New York, USA

**Richard Lawford (Co-Chair)** Water Future, Canada

**Stefan Uhlenbrook (Co-Chair)** UNESCO-WWAP, Italy

**András Szöllösi-Nagy** Water Future, UNESCO, WWC, Hungary

**Dietrich Borchardt** Helmholtz Centre for Environmental Research, Germany

**Simon Langan** IIASA, Austria

**Carlo Giupponi** University of Venice, Italy

**Anik Bhaduri** Water Future, Australia

**Marianela Fader** Centre for Water Resources and Global Change (UNESCO), Germany