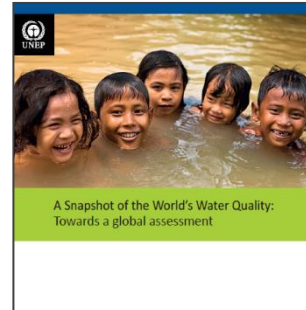


World Water Quality Alliance (2021)



## UN Resolution 2017

EP

UNEP/EA.54.27

Date: Lampedusa, 3 December 2017  
Original: English

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme  
Third session  
Nairobi, 4-8 December 2017

### Draft resolution on addressing water pollution from terrestrial, coastal and marine sources and livelihoods, ecosystems functioning and...

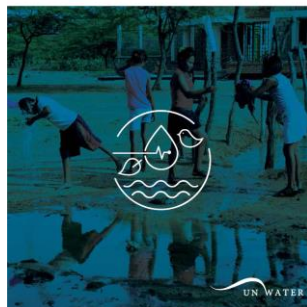
The United Nations Environment Assembly,

noting that water from terrestrial, coastal and marine sources is essential for human health, livelihoods, ecosystems functioning and...

2016

## 2016 Towards a Worldwide Assessment of Freshwater Quality

A UN-Water Analytical Brief



concerned about threats to water quantity and quality across the globe, and that many related ecosystem services, and of human activities such as agriculture and poor sanitation, and also severe pollution from unimpacted development, from water-related ecosystems.

that water is both a recipient and a carrier of pollutants which are exacerbated by the effects of unsustainable activities, requires integrated and innovative approaches to reduce emissions and the transport of pollutants into ecosystems. Face increased uncertainty and risk to ecosystems.

the adoption of the General Assembly resolution 66/288 of 27 October 2012 on the need to adopt measures to significantly reduce and the need for Governments to commit to taking water into account in all Sustainable Development Goals for the 2015-2030 period.

the adoption of the High Level Panel of Experts Report of the Commission on World Water 2015: Action for Sustainable Development Goals for the 2015-2030 period.

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WORLD WATER QUALITY ASSESSMENT  
First Global Display of a Water Quality Baseline

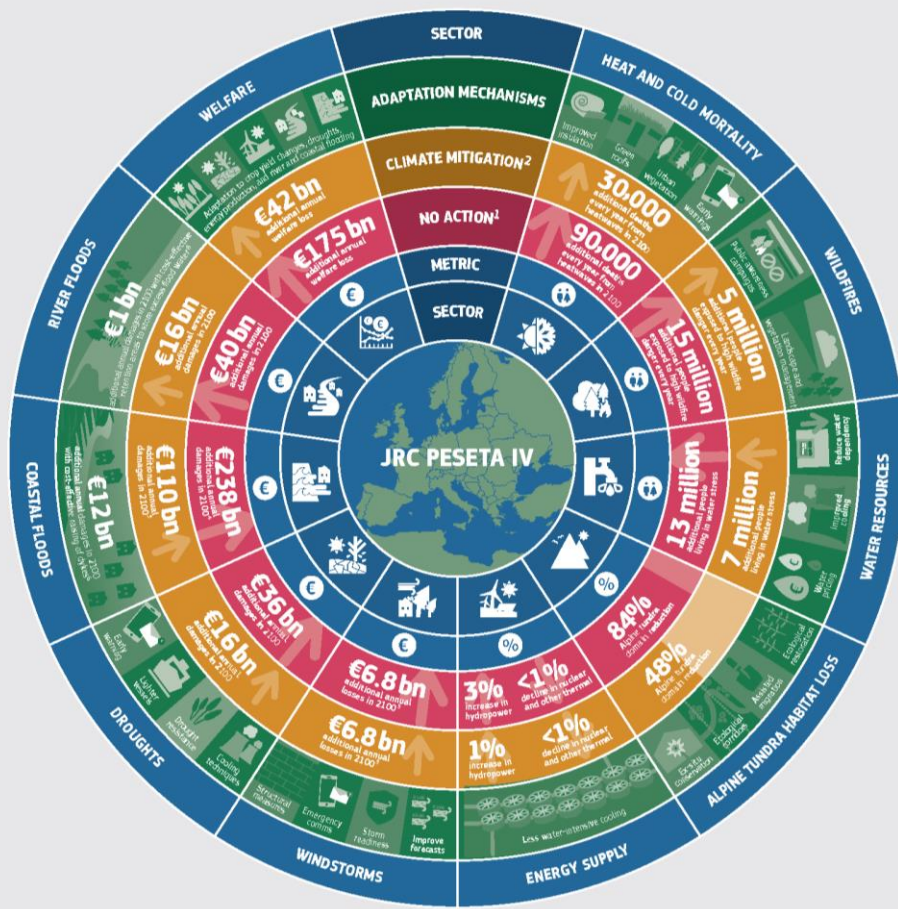
2021

# Actionable Monitoring for the achievement of Global Water Security

Dietrich\_Borchardt



HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH - UFZ



**NO ACTION 3°C<sup>1</sup>**  
**CLIMATE MITIGATION 1.5°C<sup>2</sup>**  
**ADAPTATION MECHANISMS**

<sup>1</sup> Impacts under a 3°C global warming scenario (relative to pre-industrial) unless otherwise stated. Assumes the population and economy does not change from present, unless a particular year is specified (e.g. 2100). Impacts are estimated in additional terms, i.e. relative to the effects of climate on nowadays impacts are for Europe. <sup>2</sup> Impacts under a 1.5°C global warming scenario (relative to pre-industrial) unless otherwise stated. Assumes the population and economy does not change from present, unless a particular year is specified (e.g. 2100). Impacts are estimated in additional terms, i.e. relative to the effects of climate on nowadays impacts are for Europe. <sup>3</sup> Impacts are for a moderate mitigation emissions scenario in 2100 (RCM4.5). <sup>4</sup> Impacts are for a high emissions scenario in 2100 (RCM6.5). <sup>5</sup> Damages are largely due to increasing future asset values, as windstorm intensity and frequency do not change significantly. <sup>6</sup> Combined with mitigation.

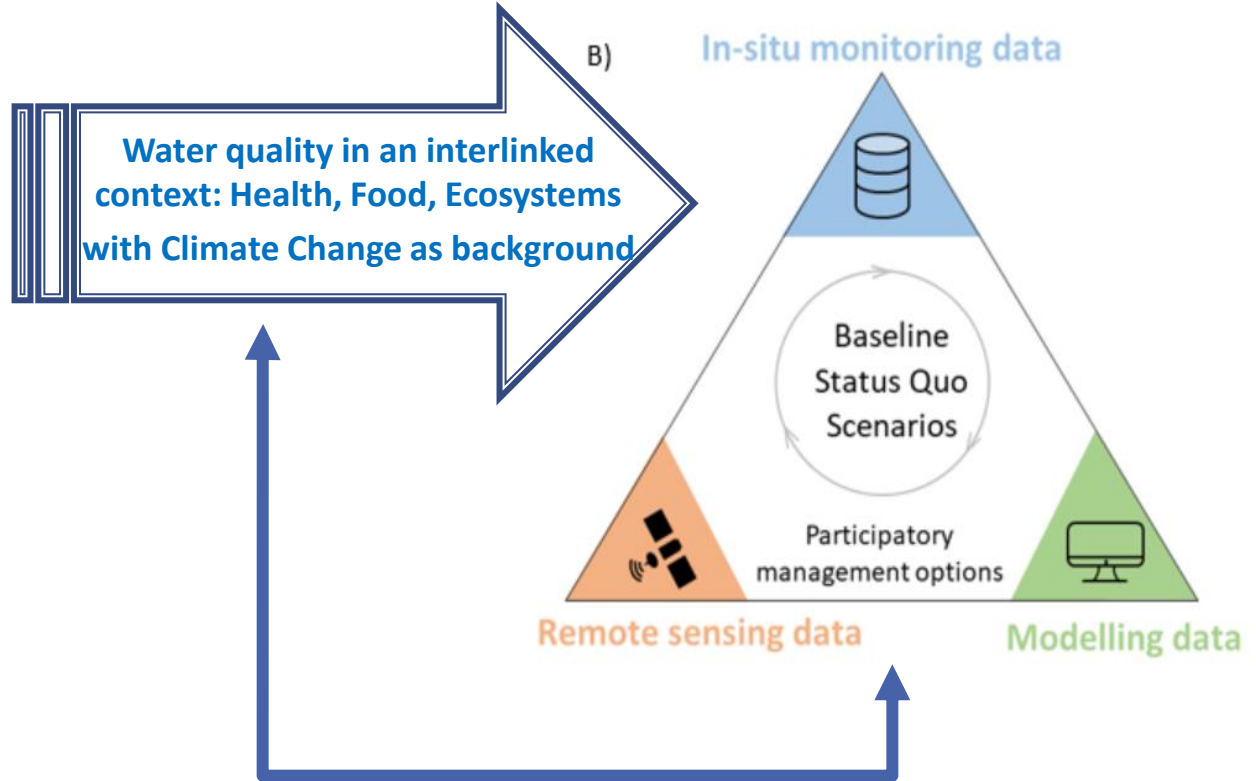
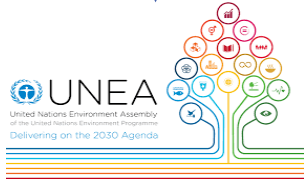
... and: WATER IS THE CONNECTING ELEMENT across all these sectors...

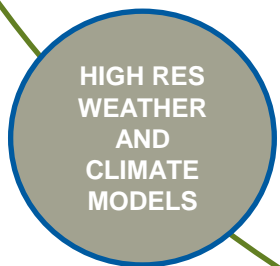
... today still valid!

“The Review ... on the impacts of climate change and on the economic costs ... leads to a simple conclusion: the benefits of strong and early action far outweigh the economic costs of not acting.”  
 (Sir N. Stern Review, 2006)

# Actionable Monitoring and Water Security

WWQA





HIGH RES  
WEATHER  
AND  
CLIMATE  
MODELS

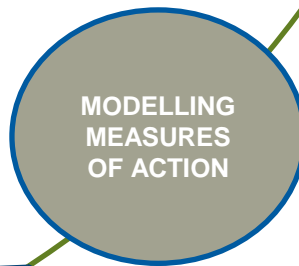
Global  
Digital  
Twins



SOCIETAL NEEDS TO COPE WITH CLIMATE CHANGE

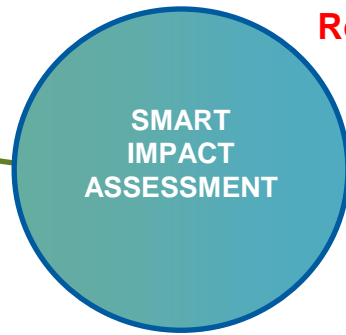


ACTIONABLE MONITORING...



MODELLING  
MEASURES  
OF ACTION

Local  
Digital  
Twins



SMART  
IMPACT  
ASSESSMENT

Regional Digital Twins



Global Drivers,  
Global Bio-Geo-  
Chemical Cycles,  
Global Socio-  
Economic Pathways

Knowledge and  
Value Chain,  
Technology  
Transfer,  
Start-Ups,  
Real World Labs,  
Product  
Development



Earth System Research ©CASUS

ADAPTATION

**1-3 MONTH  
CRISIS-INTELLIGENT  
MANAGEMENT**

Seasonal and sub-seasonal forecasts:  
Concepts, products, services, and technologies

**30-80 YEAR  
SECURING THE FUTURE AND  
RESILIENCE**

Long-term projections for forward-looking  
adaptation until 2100 and beyond

At 1-kilometer resolution, a European climate model (left) is nearly indistinguishable from reality (right). (LEFT TO RIGHT) ECMWF; © EUMETSAT