Technology & drinking water access

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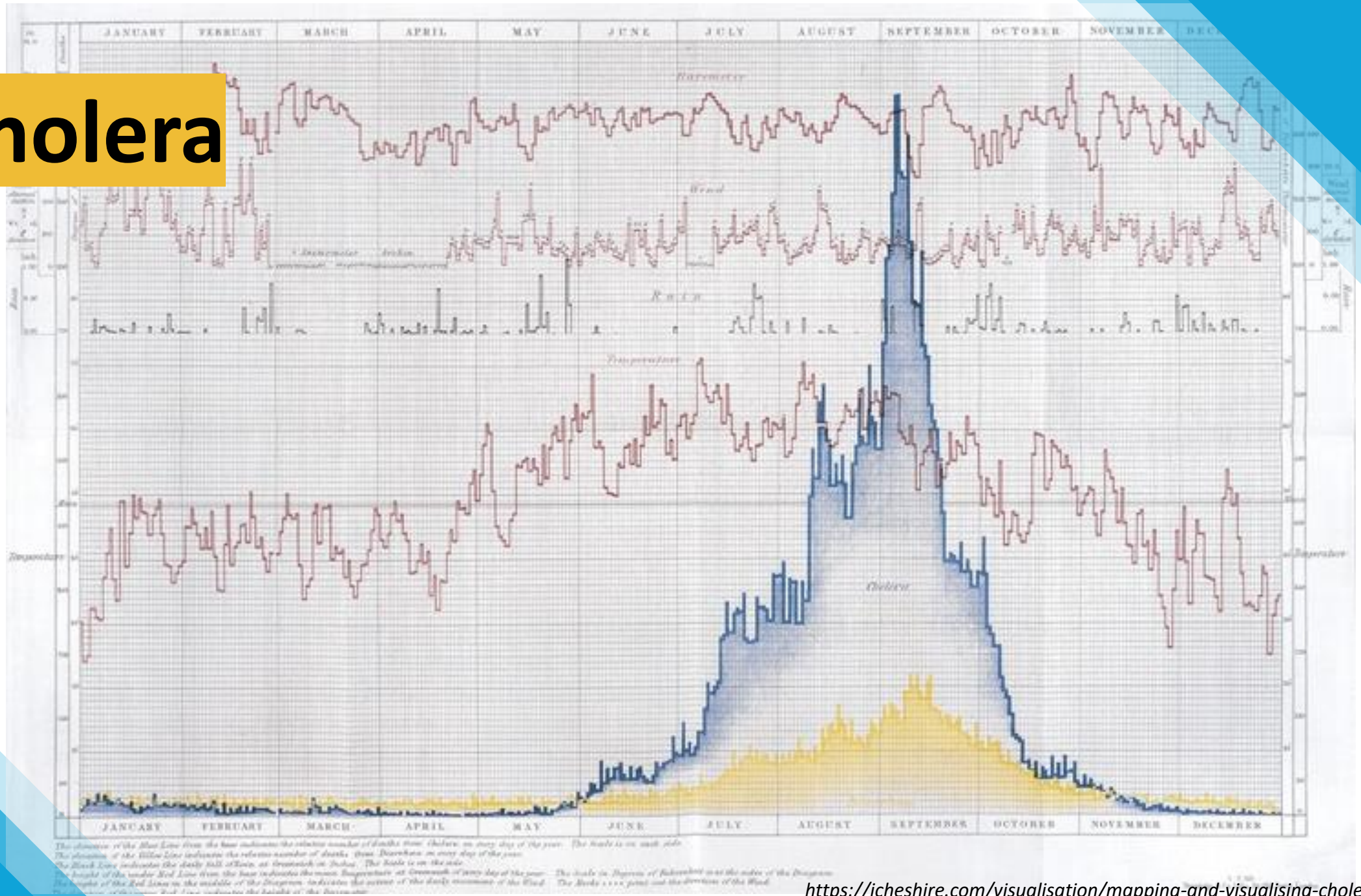
Water for Impact

Twee emmertjes water halen

sloot in het Land van Altena, 1931

Cholera

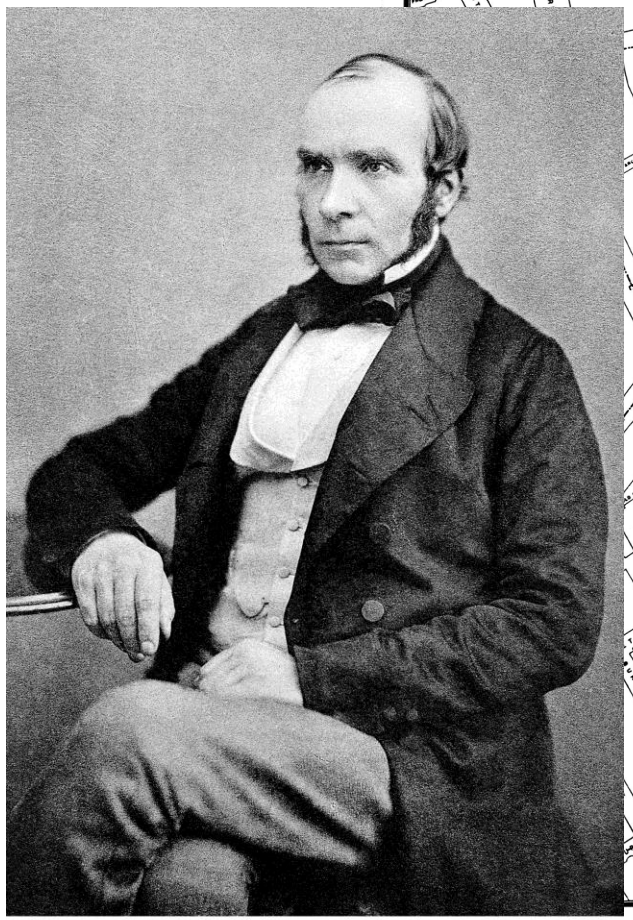


https://jcheshire.com/visualisation/mapping-and-visualising-cholera-data/

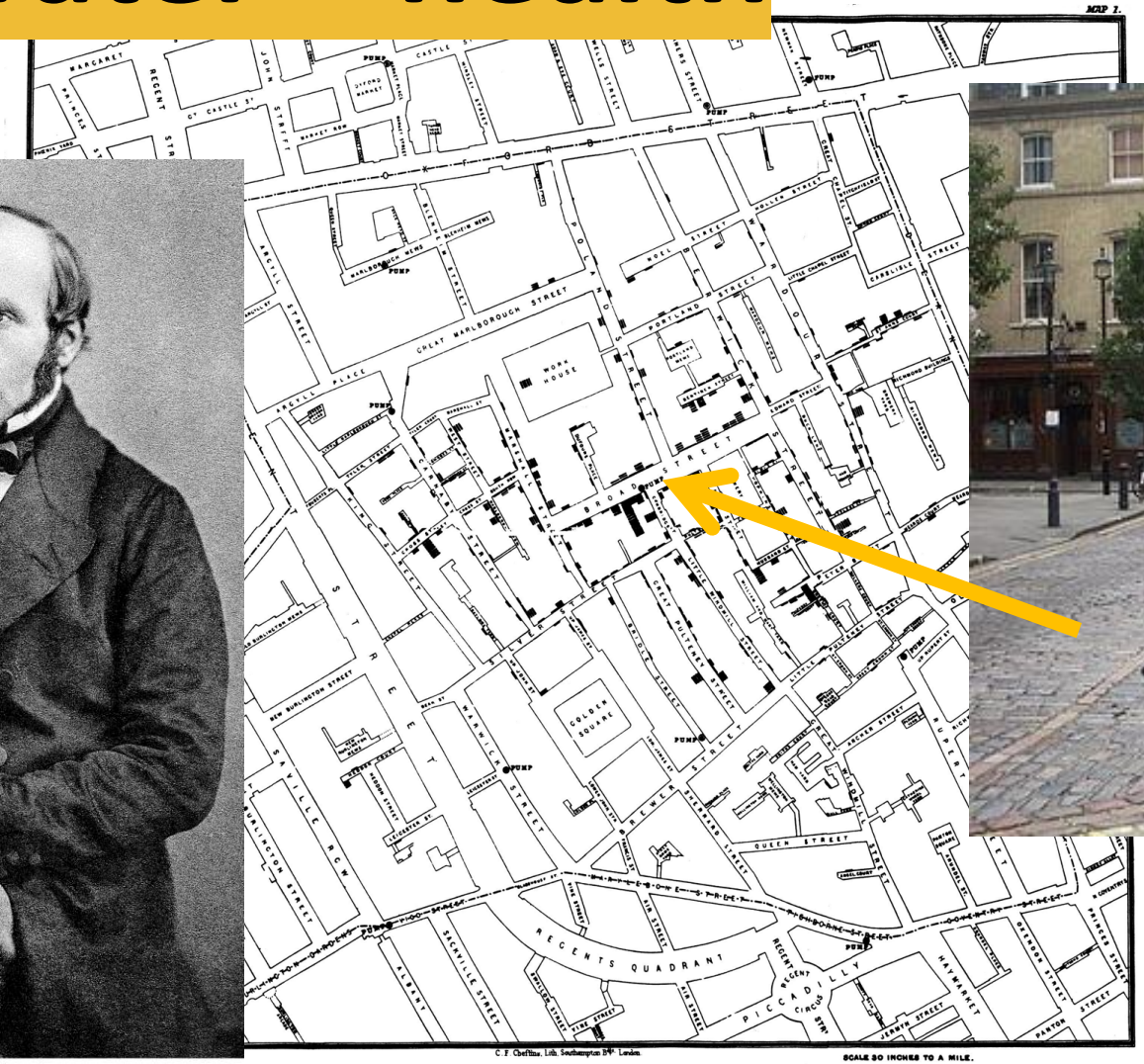
Amsterdam

www.amsterdam.nl/nieuws/achtergrond/geschiedenis-100-jaar-schoon-water/

1854: Water = health



John Snow



Delft, 1866

— Sedert onze vorige opgave zijn alhier door de Cholera

	aangetast:	overleden:
10 Juny	13	12
11 "	25	20
12 "	30	14
13 "	33	26

Sedert het begin der ziekte aangetast 396 overleden 220.

— Wij vernemen, dat door het gemeentebestuur, in die buurten waar de meeste behoefde aan zuiver drinkwater bestaat, pogingen in het werk worden gesteld ter opsporing van goede wellen, ten einde door aldaar pompen te plaatsen, in die behoefte te voorzien.

De Delftsche Courant, 15 June 1866

Groningen

waterbedrijfgroningen.nl/over-ons/wat-we-doen/

CHOLERA-COMMISSIE.

De *Cholera-Commissie* waarschuwt nogmaals met nadruk tegen het gebruik van

ONRIJPE VRUCHTEN,
PRUIMEN,
KOMKOMMERS,
MELOENEN,
GARNALEN.

OUDERS behooren zorg te dragen dat hunne *kinderen* zich niet in 't geheim *vruchten* verschaffen.

Voor *goed Drinkwater* behoort steeds gezorgd te worden, als zoodanig wordt

DUINWATER

aanbevolen.

AMSTERDAM, 24 *Julij* 1866.

Namens de CHOLERA-COMMISSIE.

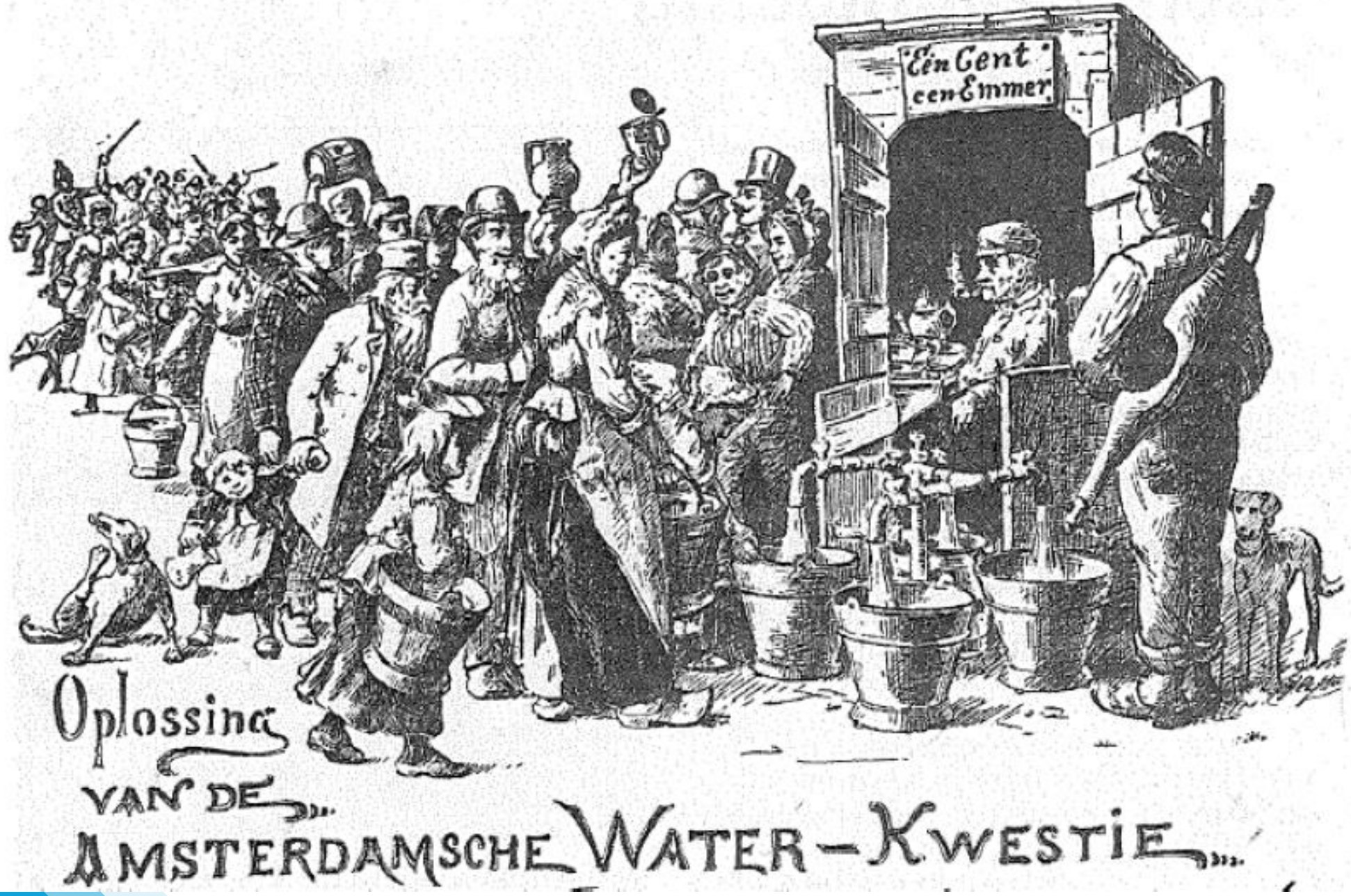
G. A. N. ALLEBÉ, *Voorzitter.*

A. ROLAND HOLST, 2^de^ *Secretaris.*

Te Amsterdam, ter STADS-DRUKKERIJ, in de Nes.

Amsterdam, 1866: https://www.nemokennislink.nl/publicaties/ondraaglijke-stank-en-ander-ongerief/

www.zandvoortvroeger.nl/waterleidingzandvoort.html
www.schumulder.nl


Eén Cent
een Emmer
Oplossing
VAN DE
AMSTERDAMSCHE WATER-KWESTIE

1915

1915 (Ach Lieve Tijd, 750 jaar Delft en de Delftenaren)

Stronttonnetjesloper

Stronttonnetjesloper (circa 1910 – 1930), Stadsarchief Amsterdam

THE LANCET

Available online 5 June 2023

Findings We estimate that 1·4 (95% CI 1·3–1·5) million deaths and 74 (68–80) m
(DALYs) could have been prevented by safe WASH in 2019 across the four d
2·5% of global deaths and 2·9% of global DALYs from all causes.

Articles

Burden of disease attribu drinking water, sanitatio domestic settings: a glob adverse health outcomes

Science

Current Issue First release papers Archive About

Four billion people lack safe water

Water safety is a key challenge compounded by climate risks and data gaps

ROB HOPE Authors Info & Affiliations

SCIENCE • 15 Aug 2024 • Vol 385, Issue 6710 • pp. 708-709 • DOI: 10.1126/science.adr3271

RELATED RESEARCH ARTICLE

Mapping safe drinking water use in low- and middle-income countries

BY ESTHER E. GREENWOOD, THOMAS LAUBER, JOHAN VAN DEN HOOGEN, ET AL. • Science • **16 AUG 2024**

If drinking water treatment has been around for >100 years, why is it so hard to achieve global access?

A million answers…

- *Economic*
- *Political*
- *Institutional*
- *Technical*
- *Educational*
- *Etc.*

I wonder: What could or should be the role of water treatment technology in this?


WLL 500 KG

Water treatment in NL

- Access to critical chemicals for water treatment
- Access to 24/7 energy supply
- Access to highly skilled operators to monitor facilities 24/7
- Access to experienced engineering consultants to trouble-shoot local issues
- Access to reliable water bodies to use as source water
- Access to knowledge about the source water quality (wide range of parameters)

In our project country Ghana, none of the above are available.

Past and current practice

Low-tech, low-cost and simple versions of existing water technology

or

High-tech (low TRL often) and fully automated systems

Both systems fail to perform due to, amongst other things, design criteria that are not rooted in the local context.

Re-imagine design criteria

- Independence of critical chemicals
- Solutions that can cope with electricity cuts
- More operators available, but staff might not have finished school
- Involvement of NGOs (non-water experts) rather than experienced engineering consultants
- Seasonal fluctuations in water source availability
- Lack of knowledge on source water quality (what to remove?)
- ….

In conclusion: water treatment technology in the Global South needs to meet different and more design criteria than in the Global North.

New narrative

Impactful water treatment technologies require, in addition to solid engineering and an innovative mindset, contextualised understanding.

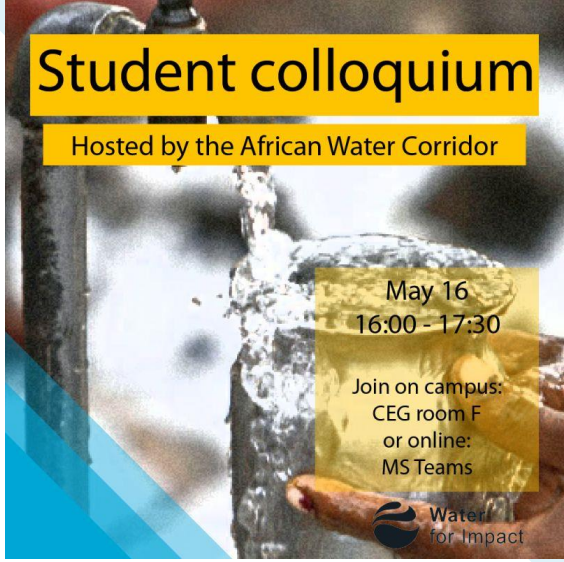
...and this can only be achieved through true co-creation.

TU DELFT | WATER FOR IMPACT

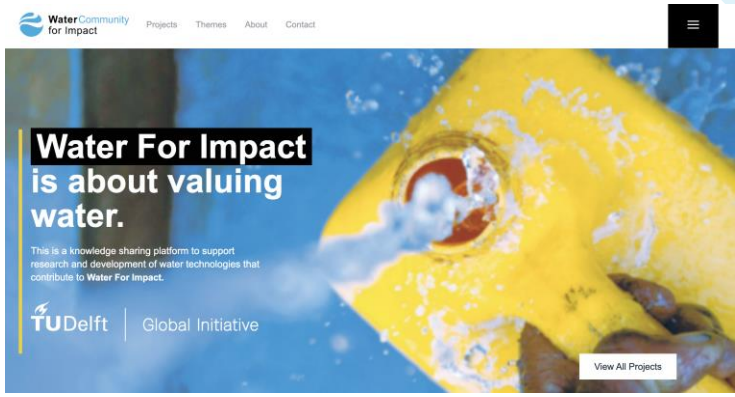
A university-wide program to promote water research that contributes to the United Nations Sustainable Development Goals agenda in and with the Global South

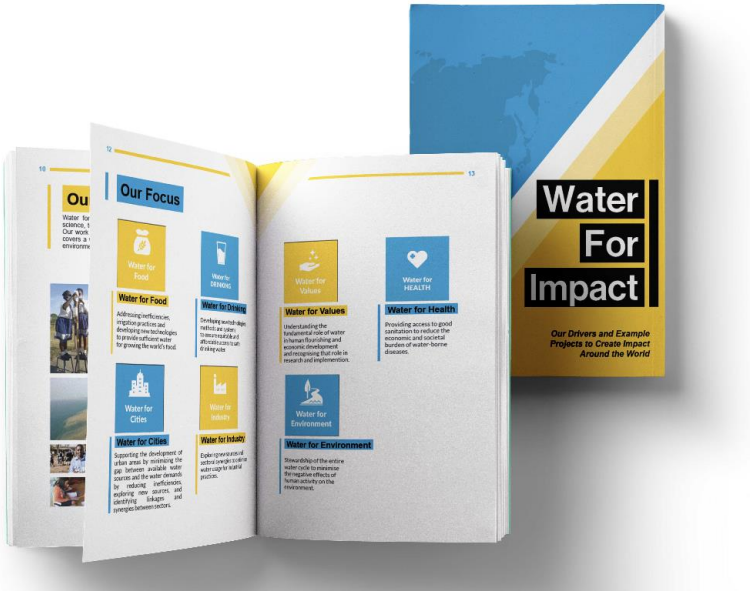
Check out our projects and people: www.tudelft.nl/waterforimpact

TU Delft | Water for Impact



Water for Impact





OUR THEMES

Water for Food

Water for Food

Addressing inefficiencies, irrigation practices and developing new technologies to provide sufficient water for growing the world's food.

Water for Drinking

Water for Drinking

Developing new technologies, methods and systems to ensure equitable and affordable access to safe drinking water.

Water for Cities

Water for Food

Addressing inefficiencies, irrigation practices and developing new technologies to provide sufficient water for growing the world's food.

Water for Industry

Water for Industry

Exploring new sources and sectoral synergies to optimise water usage for industrial practices.

Water for Values

Water for Values

Understanding the fundamental role of water in human flourishing and economic development and recognising that role in research and implementation.

Water for Environment

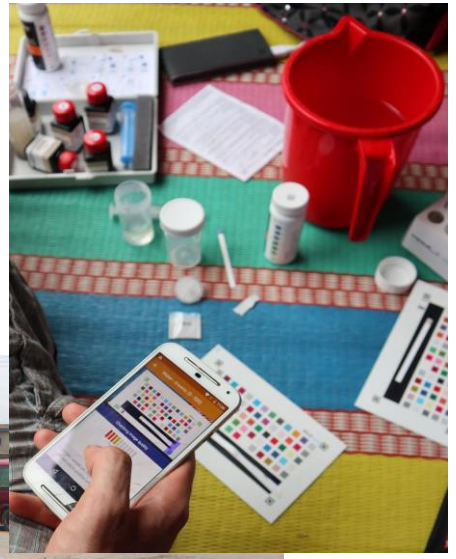
Water for Environment

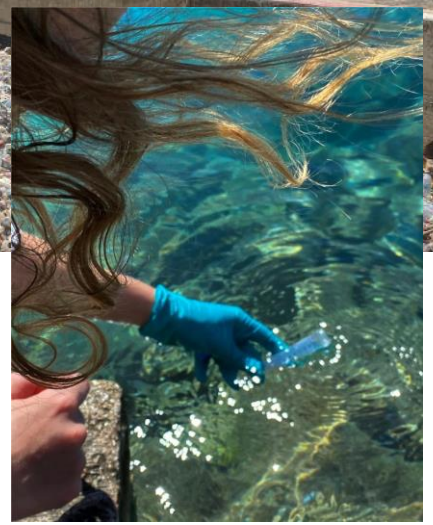
Stewardship of the entire water cycle to minimise the negative effects of human activity on the environment.

Water for Health

Water for Health

Providing access to good sanitation to reduce the economic and societal burden of water-borne diseases.





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RAMBO 180
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project
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sustainable water partnership

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