

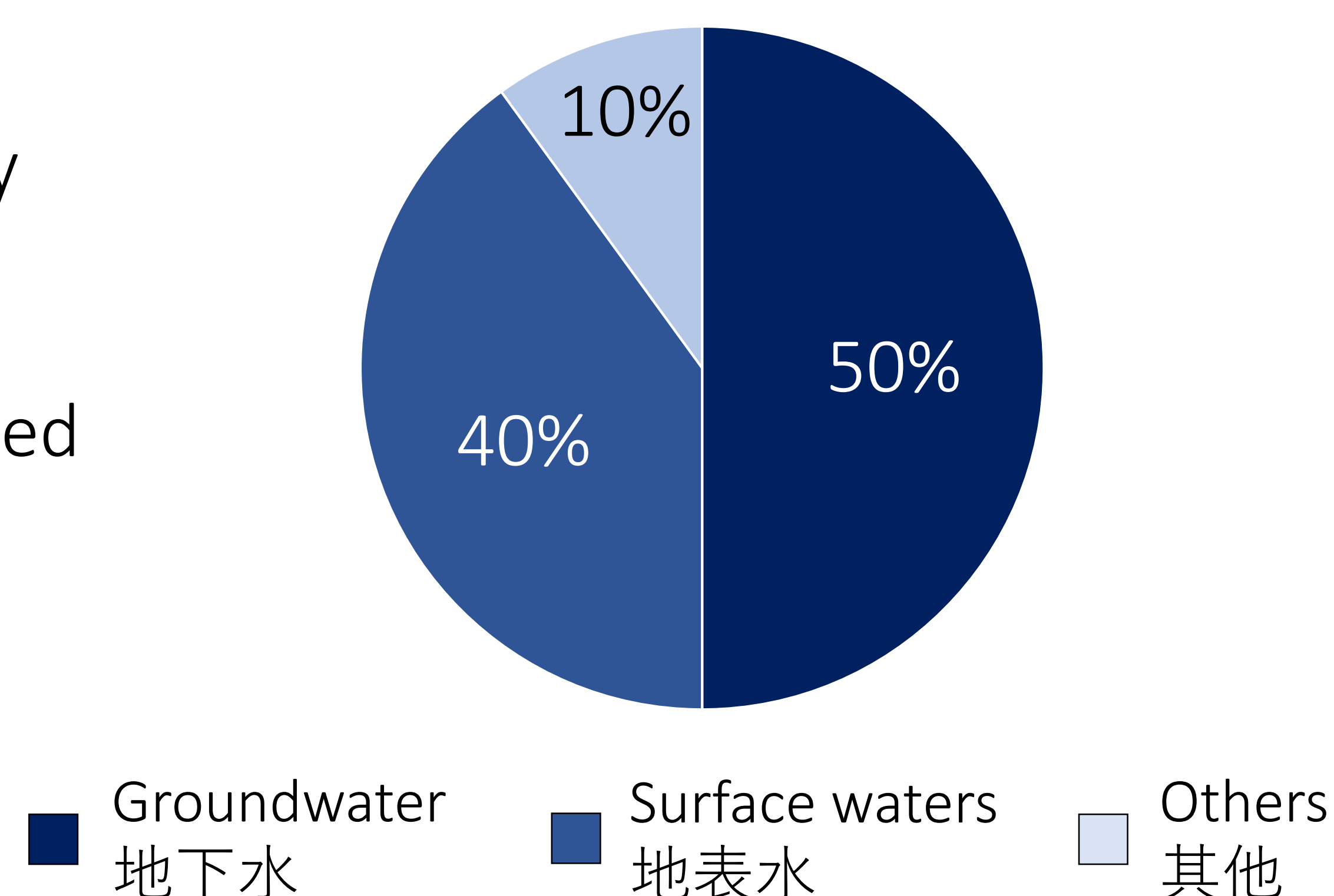
DRINKING WATER 飲用水

Human beings consist of about 60% water, without drinking they can only survive a few days.

人體約有60%由水所組成，一旦缺水即很快死亡

- 💧 An adult needs **1.5-3L** water per day to be sustainably healthy
健康成人一天需喝下1.5-3公升的飲用水以維持良好的健康狀況
- 💧 **29%** of the global population has no access to a safely managed drinking-water service (2017)
2017年全球仍有29%的人民無法成功的獲取安全的飲用水
- 💧 **>5000** people in Europe die from the consequences of contaminated water every year (2018)
2018年竟有>5000 的歐洲人民死於誤飲汙水

Origin of drinking water in Europe
歐洲飲用水來源



Source: Own illustration based on EEA, 2016

PROBLEM 問題

Contaminated Water
受汙染的飲用水

&

Poor Sanitation
惡劣的環境



Source: Adobe Stock (edited)



Source: Dreamstime Stock (edited)

HUMAN HEALTH
人民健康

CONSEQUENCES 後果

➡ HEALTH RISKS 危害健康

Common symptoms

常見症狀:

- Headache 頭痛
- Diarrhea and fever 腹瀉高燒
- Blood in the stool 血便
- Nausea 噁心
- Severe cough 咳嗽

Common diseases

常見疾病:

- Cholera 霍亂
- Cancer 癌症
- Polio 小兒麻痺症
- Dysplasia 發育不良
- Hepatitis A A型肝炎

Worst Case 嚴重將導致: Death 死亡



DRINKING WATER DIRECTIVE 歐盟飲用水條例

OBJECTIVE
共同目標



Protect human health by setting quality-standards that apply to all waters intended for human consumption 制定一套完整的水資源標準以把關人民健康

STANDARDS
標準訂定



Water is drinkable if it is free of microorganisms, parasites and hazardous substances
所有不含微生物、寄生蟲及有害物質的水皆是可飲用的

Directive sets microbiological, chemical, and indicator parameters
引用水條例中設有微生物、化學及指示劑的指標

IMPLEMENTATION
具體成就



EU members may implement necessary laws, regulations, and provisions referring to drinking water 歐盟應提供一切飲用水相關之法律、法規及行政規定

EU members should provide access to drinking water with the prescribed standards
歐盟應承諾提供人民符合標準之飲用水

EU members may give regular status-updates of drinking water to the EU Commission
歐盟應定期向歐盟執委會更新飲用水狀況

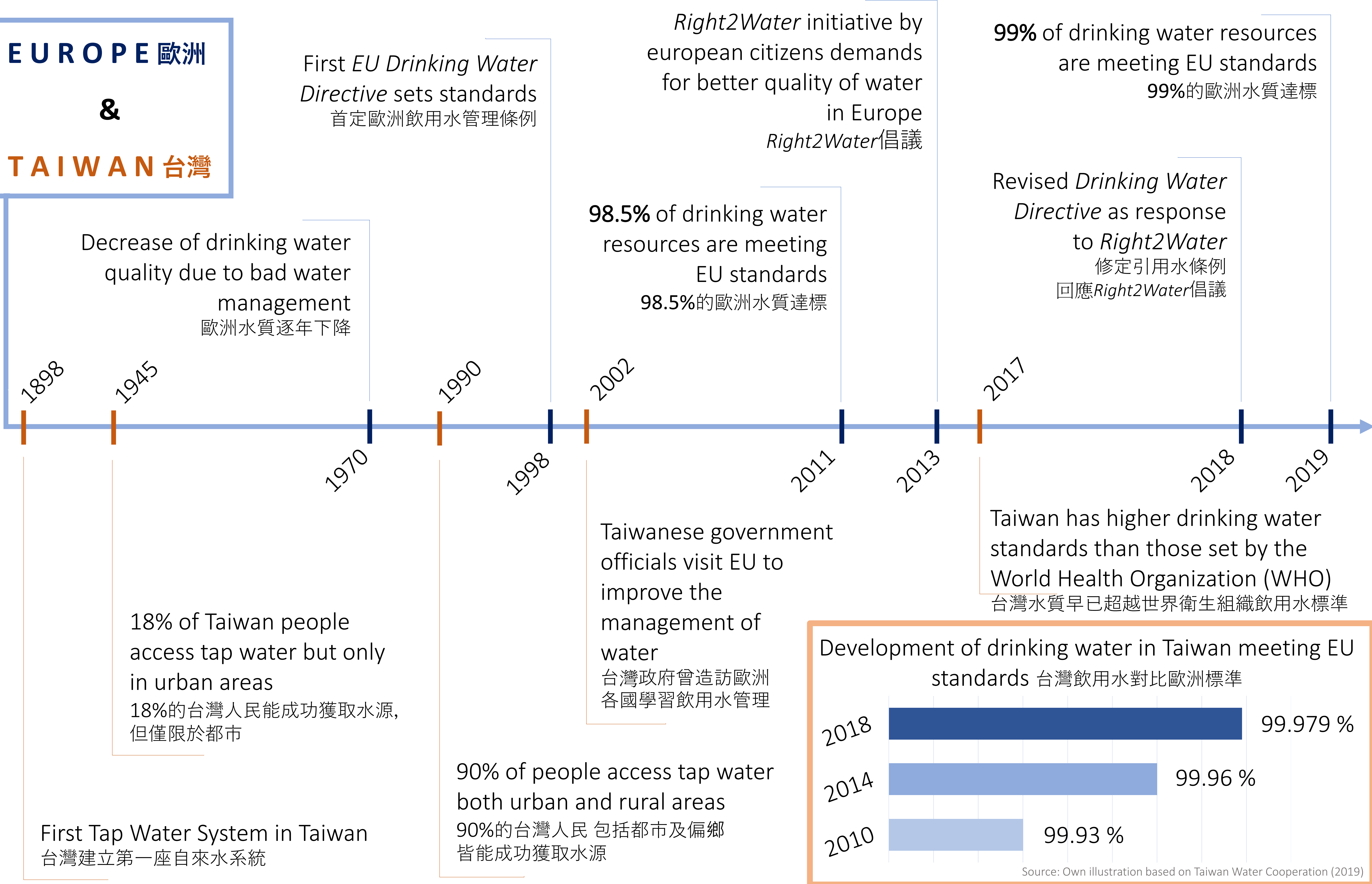
EU members are asked to set additional standards if needed 歐盟應於必要時新增條例

➡ Other important directives: Water Framework Directive, Groundwater Directive, Urban Wastewater Treatment Directive
其他相關條例：飲用水規範條例、地下水條例、城市汙水淨化條例

AN ENVIRONMENTAL HEALTH TOPIC 衛生環境議題

ACHIEVEMENTS 歐洲與台灣近年飲用水成效

EUROPE 歐洲 & TAIWAN 台灣



CHALLENGES 歐洲與台灣飲用水挑戰

EUROPE 歐洲

Examples of drinking water issues 飲用水汙染例子:

- Bad sanitation 環境衛生惡劣**
 - Blue tap water in Heidelberg, Germany (2019)** (德國海德堡的藍水事件)
 - (Tests found no danger from blue water. However, trust in tap water and facilities was questioned 檢查後證實藍水對人體無害, 但自來水及運輸管線仍存有安全疑慮)
- Bad water treatment 不當的水質處理**
 - In Europe, 14 people die each day from unsafe water, sanitation, and poor hygiene**
 - By Lianna Brinded · March 21, 2018
- People get sick and die from legionella** (水中的退伍軍人菌使人民引起肺癌等相關疾病)
- Legionella can cause pneumonia and other diseases. (>5000 dead people in 2018)** (嚴重甚至導致死亡 (2018年竟有>5000的歐洲人民死於誤飲汙水))
 - Source: Euronews (2019)

TAIWAN 台灣

Main problem:

- Old facilities 管線老舊**
- Water leakage 漏水問題嚴重**
- Rust 侵蝕**
- Poor filtering 過濾不良**
- Why can't we drink tap water in Taiwan?** (為什麼我們無法直接飲用自來水?)
 - Because of old facilities, e.g. traces of arsenic end up in the tap water and can cause arsenic poisoning (老舊管線導致大量砷進入自來水中, 並可能引發砷中毒)
 - Today, only 0.75% of the old rusted facilities have been replaced in Taiwan (台灣管線汰換率僅有0.75%)



SOURCES 資料來源

Find all used sources by scanning the QR-Code 掃描QR-Code 即可找到所有資料來源



GAME

DRINKING WATER CALCULATOR 飲水計算機

Do you drink enough water to stay healthy? Find it out! 檢查一下, 身體的水夠嗎! ?



1. Scan the QR-Code 掃描QR-code
2. Chose the „Metric“ System 選擇"Metric"模式
3. Enter the requested information 輸入所需的資訊

Source: Gigacalculator (2019)

遊戲

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