



Groundwater is a common good

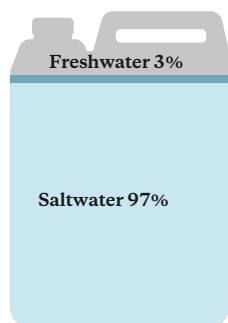
- 1. Groundwater is not an economic good**
Groundwater is vital and must not be used to maximise profits
- 2. The overuse of groundwater increases poverty**
Groundwater is essential for the implementation of human rights
- 3. Groundwater use needs participation**
The population must decide on the use of groundwater

Groundwater, an invisible treasure

A treasure hidden beneath the earth. We cannot see it – and yet we use it every day. Groundwater reserves supply a large part of humanity with drinking water. We also use groundwater to irrigate fields and produce goods. Furthermore, it maintains valuable ecosystems, which are important for biodiversity, flood protection and the provision of food and water.

Clean water, and the possibility to wash one's hands, is lifesaving. This has been evident throughout the current COVID-19 pandemic. In many places, groundwater is a prerequisite for implementing the internationally guaranteed right to drinking water and sanitation, as well as the right to food: In the poorer regions of Africa and Asia alone, the livelihoods and food security of 1.2 to 1.5 billion rural households depend on water from underground.¹

Total water resources



Proportion of fresh-water resources

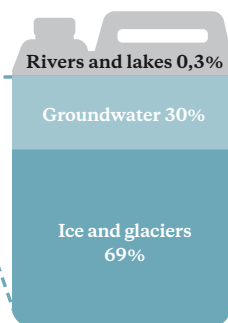
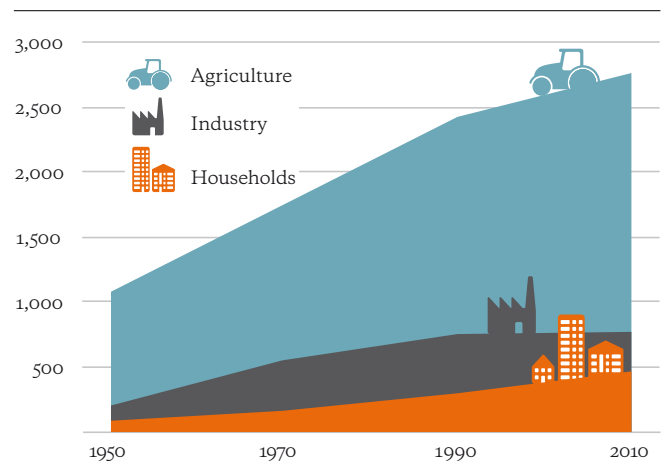


Figure 1: Water covers 71% of the earth. The majority is **saltwater**, which can only be made usable with considerable effort. Of the global **fresh-water resources**, about 70% are stored in glaciers and ice caps. About 98–99% of the freshwater resources not held in ice are underground **ground-water resources**.²

Globally, groundwater supplies

- ... almost 50% of drinking water
- ... about 40% of the water used in irrigated agriculture
- ... about 1/3 of the water used by industry



Sectoral water withdrawal in km³

Figure 2: Rising global water consumption

Groundwater overuse is rising

In the past 50 years, global groundwater withdrawals have at least tripled, and they continue to rise.³ The expansion of irrigated agriculture in particular has contributed to the increase in global water demand.

Despite increasing water shortages, overexploitation of the valuable resource, water, continues in order to increase yields and profits in agriculture and mining. Expanding cities and growing industrialisation are also increasing the pressure on water resources. On top of this come the consequences of climate change: rainfall is becoming more unpredictable, temperatures are rising, and droughts and dry periods are increasing. In many places, severely overused and polluted rivers and lakes are no longer reliable sources of water in dry periods, and increasing use is being made of existing groundwater reservoirs.

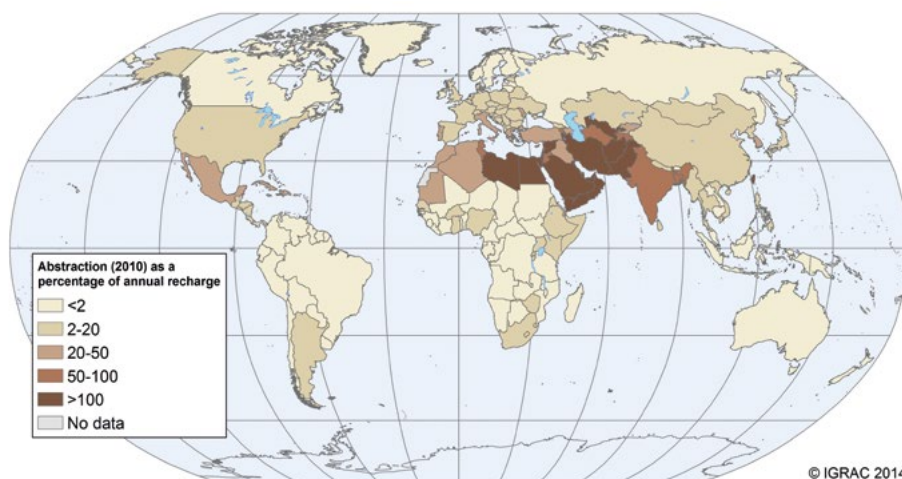
Serious consequences for people and nature

In many regions, groundwater is extracted faster than it can be replenished. The situation is particularly critical in India, where there are over 20 million wells that tap groundwater, almost 90% of which is used in

¹ – WWAP (World Water Assessment Programme). 2012. The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk. Paris, UNESCO.

² – Vgl. Shiklomanov, I. (1993) World Water Resources. In Gleick, P., Ed., Water in Crisis, Oxford, New York.

³ – Ibid.



2022: Groundwater year

The slogan of World Water Day on March 22, 2022 is: “Groundwater – making the invisible visible”. It is also the theme of this year’s United Nations World Water Report and a global campaign to raise awareness of groundwater and the challenges it poses.

Figure 3: IGRAC (International Groundwater Resources Assessment Centre), Groundwater Development Stress [map]. Edition 2014. Scale 1 : 50 000 000. Delft, Netherlands: IGRAC, 2014.

agriculture, enabling the water-intensive cultivation of cereals and rice. Falling water tables are leading to declining yields that could threaten the country’s food supply in the future.⁴

Up to 20% of groundwater wells worldwide are in danger of running dry.⁵ Groundwater pollution from raw material extraction, industry, private households, and agriculture is also increasing. For example, in gold mining highly toxic cyanide and mercury are used and these frequently end up in groundwater. The polluting effect of fertilisers and pesticides used in agriculture is particularly widespread globally. Once contaminated, it can take decades and even centuries for groundwater resources to recover.

Those who can invest in deeper wells and more powerful pumps – causing water tables to fall further. The consequences are felt by poor populations, indigenous peoples, smallholder farmers and fishers, and within these groups by women particularly keenly. They often have no alternative water sources, and their livelihoods depend directly on the ecosystems damaged by falling water tables.

What has to happen?

1. Making the invisible visible

The broader public and many national governments in charge are not always aware of the importance of

groundwater for the survival of many people. In many places, the situation of groundwater and its use must first be assessed in order to be able to sensibly organise and regulate groundwater extraction.

2. Using (ground)water in a more sustainable way

The protection of groundwater from pollution and overuse is a critical task worldwide. It is crucial to switch to a sustainable form of agriculture adapted to water scarcity and climate change. Water-intensive extraction of raw materials must be subject to strict controls and regulation, especially with regard to the use of groundwater. Cities must be planned in such a way that they conserve existing groundwater supplies.

3. Using (ground)water in a fairer way

Groundwater is of enormous importance for overcoming global poverty and social injustice. Governments should actively champion the social dimension of groundwater use and explicitly address the regulation of these water resources in national legislation, bilateral development cooperation and international processes and negotiations.

4. (Ground)Water use needs participation

Local communities must be actively involved in decisions that affect groundwater systems and thus their livelihoods. In accordance with the Free, Prior and Informed Consent (FPIC) principles of the United Nations Declaration on Rights of Indigenous People (UNDRIP), they must be fully informed about the

4 – SciDev.Net (2021): Groundwater depletion in India ‘threatens food security’. www.scidev.net/global/news/groundwater-depletion-in-india-threatens-food-security/

5 – Jasechko, S./Perrone D. (2021): Global groundwater wells at risk of running dry. In: Science (Vol 372, Issue 6540).

impact of groundwater and land use and have the chance to raise objections at any time.

In Germany, the pressure on groundwater is increasing

About 70% of Germany's drinking water comes from groundwater. In 2021, the International Association of Waterworks in the Rhine Basin (IAWR) warned that the discharge of pesticides, manure and fertiliser surpluses, as well as antibiotics, from conventional agriculture could cause "irreparable damage to the quality of (ground)water." The association, which represents over 100 suppliers of drinking water, in Switzerland, France and Germany, makes a strong case for shifting to organic farming, starting in water protection areas. Record-breaking temperatures and drought related to climate change in the summers of 2018 and 2019 led to a significant drop in groundwater levels in some regions of Germany. Prolonged dry spells are expected to occur more often in future, with a negative impact on groundwater recharge. In eastern Germany, the rate of groundwater recharge could decrease by up to 50%. On Germany's coasts, an increase in the intrusion of salty seawater into coastal groundwater resources is likely because of falling groundwater tables and rising sea levels.⁶

Lithium – white gold

Lithium – so-called white gold – is used to manufacture batteries for electric vehicles. In the wake of the transition to electromobility promoted in industrialised countries, the global demand for lithium has tripled in the past 20 years and is expected to continue to rise sharply. Partners of Brot für die Welt in the "lithium triangle", in the border region of Argentina, Bolivia and Chile where more than 60% of the world's lithium reserves are located, talk about the threat to their livelihoods: Because the extraction of lithium is extremely water-intensive, the water table is falling, nearby rivers are drying up and vegetation is drying out. It is becoming increasingly difficult for local indigenous communities to pursue their livelihoods, which are based on cattle ranching, agriculture, and salt extraction. Although the land belongs to them, they were not included in decisions related to lithium mining.

Brazil's water resources in danger

In the Cerrado region of central Brazil, soya, sugar cane, corn and eucalyptus are grown in huge monocultures and turned into biofuels, animal feed and wood pulp, some of which are exported. The world's most biodiverse savanna region is also Brazil's most important water reservoir. In the rainy season, it absorbs water like a sponge and feeds groundwater resources and important rivers of the subcontinent. Over 50% of the Cerrado savanna, which once made up 2 million km², has been cleared. Increasingly, large-scale farms are using water from the Urucuia aquifer and surrounding rivers beneath the Cerrado to irrigate their fields in order to grow crops all year round and thus increase yields. As a result, the water table and the water level in rivers have been declining for years.

The Catholic Pastoral Council (CPT), a partner of Brot für die Welt, warns of disastrous consequences for humans in the region. The sources and canals that traditional small farms use to irrigate their land during the dry season are drying up. Fishers can no longer catch enough to make a living because fish stocks are dwindling. Cities such as Sao Paulo are also affected by the impact on the water cycle.

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⁶ – German Federal Environmental Agency (2021).