Legal Framework

Since 2000 the Water Framework Directive (WFD) has been the central instrument for water resource management. Its broad-based approach includes the protection of inland surface waters, transitional waters, coastal waters and groundwater.

Its principal aim is to ensure a good status of all waterbodies within the EU. This implies improving aquatic ecosystems while any further deterioration is prohibited. The WFD is supplemented by its "daughter" directives (Groundwater Directive, Environmental Quality Standards Directive). Other water related key directives include among others the Marine Strategy Framework Directive, the Flood Risk Management Directive, the Industrial Emissions Directive and the Urban Waste Water Treatment Directive. Germany has fully transposed the requirements of these directives to national legislation through its Federal Water Act and corresponding ordinances.

Principal legal provisions of water resource management

Level	Regulations					
EU	Water Framework Directive (WFD) Groundwater Directive (GWD) Environmental Quality Standards Directive (EQSD)	Urban Wastewater Treatment Directive Industrial Emissions Directive (IED)	Drinking Water Directive	Nitrates Directive	Flood Risk Management Directive (FRMD)	Marine Strategy Framework Directive (MSFD)
National	Federal Water Act (WHG) Groundwater Ordinance (GrwV) Surface Waters Ordinance (OGewV) Ordinance on Installations for the Handling of Substances Hazardous to Water	WHG Waste Water Charges Act (AbwAG) Waste Water Ordinance (AbwV)	Drinking Water Ordinance (TrinkwV)	Fertilizer Act (DüngG) Fertilizer Ordinance (DüV)	WHG	WHG
Länder	Federal states' legislation (laws/ordinances, licences, notices, monitoring)					

Source: German Environment Agency

UBA- Brochures

The data presented here provides a first insight into Germany's water resource management. Its framework conditions, pressures as well as the measures protecting water resources are elaborated on in further detail in the UBA brochure "Water Resource Management in Germany. Fundamentals, pressures, measures" (2017).
www.uba.de/water-resource-management

Detailed information regarding water quality and its assessment can be found in the UBA brochure "Waters in Germany – Status and assessment" (2017).
https://www.umweltbundesamt.de/publikationen/waters-in-germany

Extensive insights into the water management planning within the Water Framework Directive is provided by the UBA brochure "Water Framework Directive - The status of German waters 2015" (2016).
https://www.umweltbundesamt.de/publikationen/water-framework-directive

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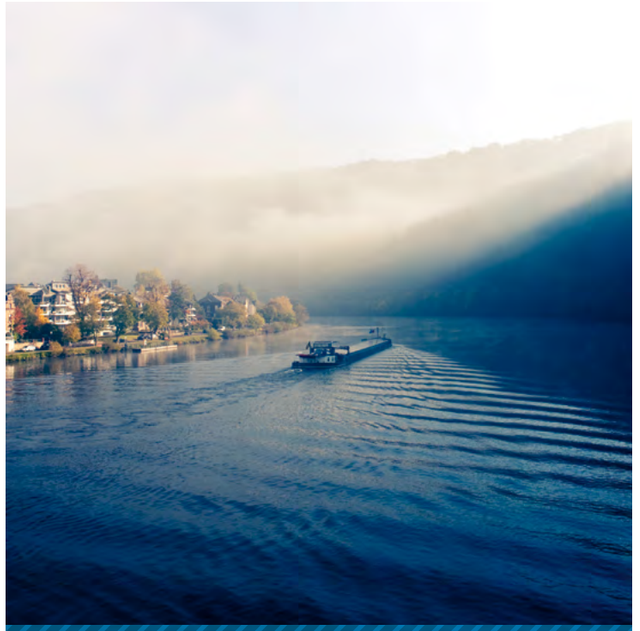


Water Resource Management in Germany

Fundamental data and facts

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Umwelt Bundesamt

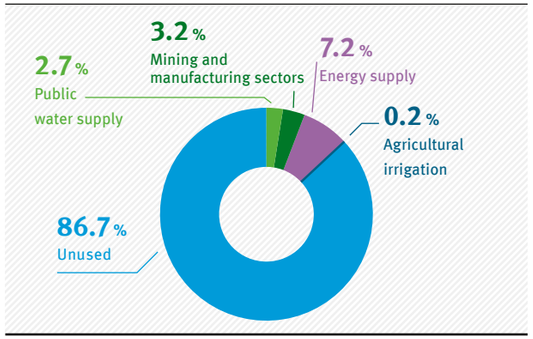
Available water resources and water usage

With potential available water resources of 188 billion cubic metres, Germany is a country rich in water resources. A volume of 6,279 litres water is potentially available for every German inhabitant per day. In 2013, a total volume of 25.1 billion m³ water was abstracted in Germany.

The largest volume of water was abstracted by energy suppliers at 13.6 billion m³ (7.2 % of potential available water resources). The public water supply which supplies households and small businesses with drinking water only utilised around 5 billion m³, i.e. less than 3 % of the potential available water resources. The mining and manufacturing industries abstracted 6.1 billion m³ (3.2 %). Only 0.3 billion m³ (0.2 %) was attributable to agricultural irrigation.

Over the past 20 years, there has been a clear reduction in the volume of water abstraction across all sectors. While in 1991 around 25 % of Germany's potential available water resources were used, in 2013 it was only 13.3 %.

Potential available water resources and water use in Germany, 2013
Potential available water resources: 188 billion m³ = 100 %

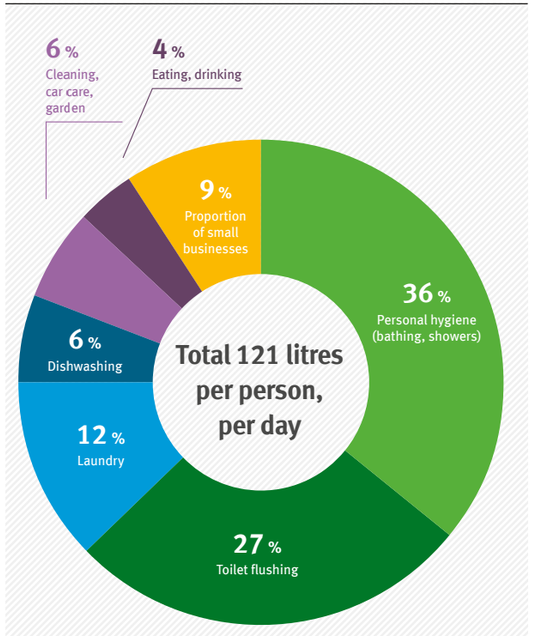


Source: German Environment Agency; data by the Federal Statistical Office (2015/2016) and Federal Institute of Hydrology (2015)

Individual water use

Almost all households and public institutions as schools or hospitals in Germany are connected to the public water supply; i.e. all citizens have access to perfect drinking water all times. Between 1991 and 2013 the drinking water use declined by about 15 % to 121 litre per person per day. This is due to water saving household- and sanitation technologies, information and awareness raising among citizens as well as due to a water tariff that is largely consumption dependent.

Average water use in households and small businesses

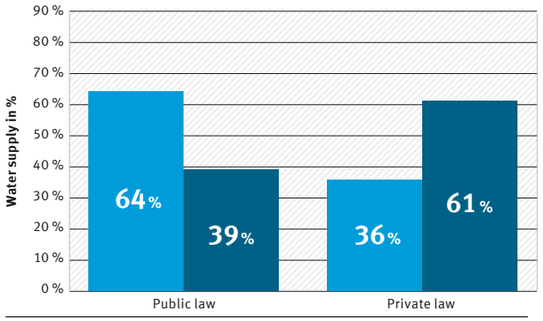


Sources: Federal Statistical Office: Fachserie 19 Reihe 2.1.1 „Öffentliche Wasserversorgung und öffentliche Abwasserbeseitigung – Öffentliche Wasserversorgung“ 2013; BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. 2013

Public water supply

In Germany, ensuring water supply is a mandatory duty of the state. Responsibility lies with the municipalities, which can make use of a range of organisational and legal forms to comply with this duty. They can supply water themselves, can establish water and special-purpose associations within the framework of municipal cooperation or can commission a third party with the task while retaining municipal supervision. This means that public and private types of companies are working side by side. However, the number of privately organized companies has increased in recent years, now comprising around 40 % of water companies and supplying more than 60 % of the water volume. In 2013, some 5,948 companies and operations were responsible for water supply in Germany.

Forms of organisation under public and private law in public water supply.



Source: BDEW-Wasserstatistik 2015 (based on: 1,631 companies)
(Water volume includes water abstraction plus water procurement).

Public wastewater diposal

Wastewater disposal in Germany is predominantly carried out by public-law companies. Almost all of Germany’s households (96.9 %) are connected to the public sewerage system and public wastewater treatment plants. In 2013 around 10 billion cubic metre of wastewater were treated in more than 9,300 public treatment plants. The expansion of wastewater treatment plants carried out in recent decades, the high level of connection to the sewerage system and to municipal mechanical-biological plants and plants with selective nitrogen and phosphate removal have brought about a significant improvement in the biological water quality.

Volume of wastewater treated in public wastewater treatment plants, in million cubic metres

	1991	2004	2013
Total annual volume of wastewater to be treated	8.512	9.410	9.825
Of which sewage	5.158	5.204	5.021
Of which sewage infiltration and precipitation water	3.354	4.206	4.804
Volume of biologically treated wastewater	7.911	9.404	9.824
Volume of biologically treated water with additional process steps*	4.617	9.083	9.653
Of which in mechanical wastewater treatment plants	582	–	1

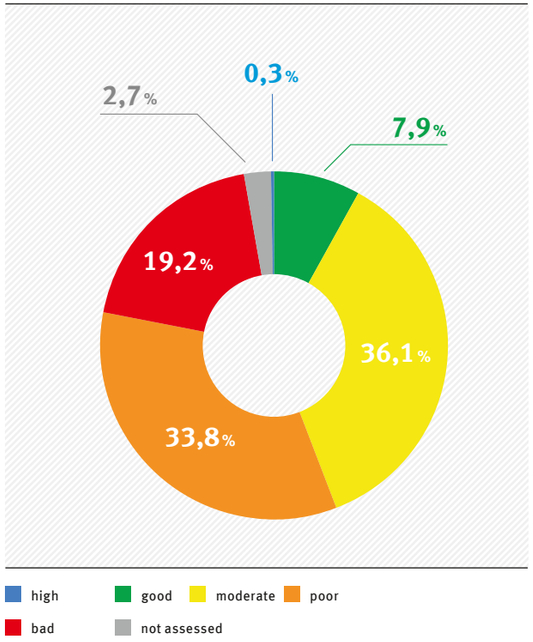
Sewage: water altered by its use; sewage infiltration: unwanted discharge in a drainage system
* Multiple entry possible

Source: Federal Statistical Office (2016), Fachserie 19, Reihe 2.1.2, Public Water supply and wastewater disposal

Water status assessment

The Water Framework Directive requires from all Member States to assess the ecological and chemical status of its surface waters as well as the quantitative and chemical status of groundwater bodies.
The assessment is based on different quality elements. Environmental quality standards have been set up for relevant pollutants in surface water and groundwater.

Ecological status of surface waters in Germany



Source: Berichtsportal WasserBLIcK/BfG; last updated 23 March 2016. Adaptation/editing: Umweltbundesamt, based on Bund/Länder-Arbeitsgemeinschaft Wasser (LAWA) data.

Surface waters

Many of Germany’s surface waterbodies have not yet reached good ecological status. The result reflects the high intensity of use of Germany’s waterbodies and their catchments, e.g. by agriculture, industry, shipping or power generation. Only 8.2 % of around 9,800 waterbodies are currently in “high” or “good ecological status”.

The German Länder (federal states) assessed all surface waters to be failing to achieve good chemical status. This is mainly due to the fact that the Environmental Quality Standard (EQS) for mercury is not met. The EQS is set to appropriately protect all aquatic species from algae up to animals that are feeding on fish.

Groundwater

95.7 % of around 1,180 assessed groundwater bodies are in a good quantitative status, and 63.7 % are in a good chemical status. The main reason for a poor chemical status (36 %) is non-point pollution with nitrate (27.1 % of groundwater bodies exceed the EQS of 50 mg/l) and with pesticides (2.8 % of groundwater bodies exceed the EQS of 0.1 µg/l) from agriculture.

Quantitative and chemical status of Germany’s groundwater bodies

Source: Berichtsportal WasserBLIcK/BfG; last updated 23 March 2016. Adaptation/editing: Umweltbundesamt, based on Bund/Länder-Arbeitsgemeinschaft Wasser (LAWA) data.