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# Measures to promote safe water and sanitation in Sweden

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## Introduction

Almost the entire Swedish population has access to safe drinking water and good sanitary conditions. Drinking water is usually good quality and, in most places, not in short supply.

The Swedish legal drinking water framework is based on the responsibility for municipalities to provide public water services in settled areas when there is a need from a health and/or environmental perspective for collective water services. This responsibility includes:

- purifying raw water into drinking water;
- distributing and collecting water;
- diverting and purifying wastewater before it is released back to nature; and
- diverting stormwater.

Property owners are obliged to pay water service fees to the municipalities for these services.

In areas where the municipality is not responsible, property owners are obliged to adhere to environmental legislation, which means that they must provide clean and safe drinking water to their households (which can be subject to supervision from the environmental supervision authority in the municipality) and have a permit for handling wastewater from the property.

Sweden has made efforts to promote knowledge and investment in advanced purification of pharmaceutical residues and other persistent pollutants, as well as the most polluted sediments. According to the Swedish Public Health Agency, in exceptional cases drinking water is contaminated by disease-causing microorganisms. In 2020, 95% of household and industrial wastewater was managed safely. However, the challenges continue regarding individual wells, sewers and securing water supply.

## Drinking water regulation

The former drinking-water directive<sup>(1)</sup> has been implemented in Swedish law through the regulations concerning drinking water passed by the Swedish National Food Agency. Due to the vastly wider scope of the new drinking water directive<sup>(2)</sup> the implementation requires adjustments in several fields of law:

- The Swedish National Board of Housing, Building and Planning will be tasked with coordinating the implementation.
- It is foreseen that the Swedish National Food Agency will be responsible for informing the European agencies in case of leakage.
- The Swedish Agency for Marine and Water Management has been tasked with producing a contingency plan for the handling of eventual leakages.
- The County Boards will be given additional tasks and responsibilities for carrying out risk assessments and adaptations.

All water utilities producing municipal water follow high quality standards for drinking water. Several limit values have been set and, based on these, drinking water is regularly examined during production to ensure that it does not contain any unwanted microorganisms or chemical substances. The water producer is obliged to make regular water sampling tests, which should be analysed by accredited laboratories. These samples measure the microbiological and chemical quality, as well as the radon content.

To ensure good drinking water quality, all drinking water producers must follow the Swedish National Food Agency's regulations. The regulations:

- set requirements for how drinking water is to be prepared and how quality is to be controlled;
- determine the handling of drinking water and the limitation of various substances in it; and
- regulate the production and distribution of drinking water at public facilities.

The drinking water regulations are based on the EU Drinking Water Directive.

## Wastewater regulation

The Council Directive 91/271/EEC of 21 May 1991 concerning urban wastewater treatment is one of the most important political instruments in the European water-protection framework concerning the protection of the environment and human health. In Sweden,

the directive has been implemented through the Environmental Code, the Act on Public Water Services and through regulations passed by the Swedish Environmental Protection Agency. Sweden does, however, still lack rules on how to designate sensitive areas.

In addition, there are several laws and regulations that control wastewater management, including the Environmental Code, the Planning and Building Act and the Act on Public Water Services. Furthermore, there is a variety of general advice and regulations relating to sewage management and individual sewers. There are also provisions stating that construction works must be designed and executed in such a way that they do not pose an unacceptable risk to the hygiene or health of users or neighbours. The legislation requires buildings and their installations to be designed in such a way that water quality and hygiene conditions satisfy general health requirements.

To manage the wastewater collected in all municipalities, Sweden has between 1,200 and 1,300 treatment plants and a total of 101,000 kilometres of sewage pipes. About 90% of Sweden's population are connected to municipal wastewater treatment plants.

In addition to the municipal treatment plants, there are also properties in the countryside with individual sewage treatment systems. A permit is required to build an individual sewage treatment system. When deciding on a permit, the relevant authority will consider the localisation, the methods for treatment and how sensitive the recipient is. Furthermore, the sewage must not pose a risk to the environment or human health.

There is no specific ordinance regulating emission levels or grade of purification for individual sewage. Instead, there are general rules of consideration that mean that the person responsible for an activity with emissions is also responsible for:

- minimising the damage caused by a spill; and
- reducing the risk of so-called inconvenience to human health and the environment.

The so-called precautionary principle is one of several rules of consideration. It means that protective measures and precautions must be taken when there is a risk of negative impacts on human health or the environment. The basic requirement is to use the best possible technology to achieve this.

### **Water protection areas**

To protect drinking water resources that are of importance for the water supply, there is an obligation for the municipalities to form water protection areas. Water protection areas have a geographical delimitation and may be divided into different zones. Linked to the water protection areas are various regulations for the protection of the water, which may restrict how land can be used or in what way chemical products and waste may be handled. An activity or measure may be subject to a prohibition, permit or notification obligation. Water protection areas can be formed to protect both groundwater and surface water.

### **Challenges**

Sweden is a country with good access to water and, therefore, the risk of a serious water shortage is not as prominent as in many other countries. However, there are exceptions and in south-eastern Sweden, including the islands of Öland and Gotland, issues of water scarcity have been in focus for a long time. In recent years, and especially since the hot and dry year of 2018, the risk of water shortages has also become apparent in many other parts of the country. It is not only a lack of water in water sources that affects access to drinking water. A lack of capacity for high consumption can also lead to a temporarily water shortage for households.

Although water quality in Sweden is generally good, there are some challenges, especially when it comes to individual sewage treatment systems. In Sweden, about 1.2 million permanent residents, (close to 15% of the population) and roughly the same number of holiday homes, depend on individual water supply. Therefore, it is essential that individual water supply maintains good quality. Several studies show problems with water quality in individual water supply (eg, in individual wells), which may be due to the presence of:

- bacteria;
- high radon levels;
- high levels of nitrogen compounds;
- fluoride;
- groundwater;
- road salt;
- heavy metals; and
- pesticides.

### **Measures to improve water quality and wastewater treatment**

From 2017 to 2021, the Swedish government has increased the appropriation for measures to the marine and aquatic environment by 78%, to almost 1.4 billion Swedish krona. Several studies have also been carried out with the aim of improving water quality and reducing eutrophication, such as the governmental eutrophication investigation and investigations carried out by the Environmental Objectives Committee. Further, since 2018 there has been a focus on developing sustainable water services. As part of that work, the government submitted a bill in the spring of 2022<sup>(3)</sup> which, among other things, stipulates that the municipalities must adopt water services plans.

The government has also made major investments to reduce emissions of pharmaceutical residues into the environment. From 2018 to 2020, the government has allocated approximately 250 million Swedish krona for the expansion of advanced treatment technology in wastewater treatment plants. The initiative has been extended to 2021 and 2022 to further reduce emissions of pharmaceutical residues and increase the possibilities for reuse of wastewater.

### **Comment**

To summarise, the Swedish regulations on drinking water, waste-water management and water quality exist in a European context where EU regulations heavily influence the rules governing the field. Generally, Swedish water meets the highly set criteria that follow from

union law and builds on a continuous legacy of good access to safe drinking water and good sanitary conditions.

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#### **Endnotes**

- (1) 98/83/EG.
- (2) 2020/2184.
- (3) Prop 2021/22:208.