

**WATER SUPPLY, USE OF WATER RECOURS AND THEIR PROTECTION**

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**Annotation:** This article discusses Water supply, use of water recourses and their protection. Water, the elixir of life, is the foundation of our existence. Its availability, usage, and protection are pivotal in sustaining life and ensuring the prosperity of our planet. From nourishing our bodies to driving industrial growth, water plays an indispensable role. However, the equilibrium of water supply and demand, coupled with the protection of this invaluable resource, presents an ever-evolving challenge.

**Keywords:** water supply, pollution, lakes, rivers, natural sources, urbanization, eco-friendly technologies, water recourses

**WATER SUPPLY:**

Access to clean water is a fundamental human right. Despite this, millions around the world lack reliable access to safe drinking water. While efforts have been made to improve global access to clean water sources, significant disparities persist, especially in developing regions.

Water supply relies heavily on natural sources like rivers, lakes, and underground aquifers. Climate change, rapid urbanization, pollution, and unsustainable consumption patterns strain these sources. Disruptions in the water cycle due to climate variability also exacerbate challenges in maintaining consistent water availability.

Water supply is the provision of water by public utilities, commercial organisations, community endeavors or by individuals, usually via a system of pumps and pipes. Public water supply systems are crucial to properly functioning societies. These systems are what supply drinking water to populations around the globe.[1] Aspects of service quality include continuity of supply, water quality and water pressure. The institutional responsibility for water supply is arranged differently in different countries and regions (urban versus rural). It usually includes issues surrounding policy and regulation, service provision and standardization.

**Technical overview**

Water supply systems get water from a variety of locations after appropriate treatment, including groundwater (aquifers), surface water (lakes and rivers), and the sea through desalination. The water treatment steps include, in most cases, purification, disinfection through chlorination and sometimes fluoridation. Treated water then either flows by gravity or is pumped to reservoirs, which can be elevated such as water towers or on the ground (for indicators related to the efficiency of drinking water distribution see non-revenue water). Once water is used, wastewater is typically discharged in a sewer system and treated in a sewage treatment plant before being discharged into a river, lake, or the sea or reused for landscaping or irrigation.

### **USE OF WATER RESOURCES:**

The way we utilize water directly impacts its availability and quality. Agriculture, a major consumer of water, accounts for a significant portion of global water usage. Efforts to adopt more sustainable irrigation practices, such as drip irrigation and precision agriculture, can help conserve water in farming.

Industrial processes also heavily rely on water. Recycling and reusing water in industries, along with the implementation of eco-friendly technologies, are crucial steps in reducing water consumption and pollution.

On an individual level, conscious efforts to conserve water through simple practices like fixing leaks, using water-efficient appliances, and reducing unnecessary consumption contribute significantly to overall water conservation.

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### **PROTECTION OF WATER RESOURCES:**

Protecting water resources is vital to ensure their sustainability for future generations. Pollution from industrial waste, agricultural runoff, and improper disposal of chemicals pose severe threats to water quality. Efforts to mitigate these issues involve implementing strict regulations, adopting eco-friendly practices, and investing in water treatment technologies.

Conservation of natural habitats like wetlands, which act as natural filters and reservoirs, plays a pivotal role in maintaining water quality and regulating the water cycle.

Furthermore, education and awareness campaigns about the importance of water conservation and sustainable usage are crucial in fostering a culture of responsibility towards water resources.

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### **CONCLUSION:**

The challenges surrounding water supply, utilization, and protection are multifaceted and require a holistic approach. Collaboration between governments, industries, communities, and individuals is imperative to ensure a sustainable future where water remains abundant and clean.

By promoting responsible water usage, implementing innovative technologies, and prioritizing environmental preservation, we can safeguard this precious resource for generations to come. Let us all take steps, both big and small, to cherish and protect every drop of water, for it is the essence of life itself.

### **REFERENCES**

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