

## WATER SUPPLYING AND EFFICTIVE USE OF WASTE WATER

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### ABSTRACT:

The article discusses viable approaches to address existing and anticipated water scarcity, water reuse, indirect drinking water reuse, direct drinking water reuse, water resource planning and what the future holds for potable water reuse.

**Keywords.** Water, water supply, Indirect reuse of drinking water (NIP), Direct reuse of drinking water (DIP), water resources, water pollution, reuse.

### Аннотация:

В статье рассмотрена жизнеспособных подходов к решению существующей и ожидаемой нехватки воды, повторное использование воды, Непрямое повторное использование питьевой воды, Прямое повторное использование питьевой воды, Планирование водных ресурсов и какое будущее ждет повторное использование питьевой воды.

**Ключевые слова.** Вода, водоснабжение, Непрямое повторное использование питьевой воды (НПИ), Прямое повторное использование питьевой воды (ППИ), водные ресурсы, загрязнения воды, повторное использование.

### INTRODUCTION:

Population expansion, urbanization, protracted and severe droughts, and climate change are all affecting the quality and quantity of conventional water supplies. As a result,

identifying chances to develop new groundwater or surface water sources is becoming increasingly difficult. To address future water, health, economic, and environmental sustainability needs, a broad portfolio of water sources is required. Many communities are working to increase their water conservation efforts and develop new strategies for developing long-term water supplies.

The efficient use of our local water resources to produce and provide reliable and high-quality water is obvious. Water reuse, in which waste water from households and businesses is extensively cleansed and used to refill communal water supplies, is one possible strategy to tackling current and anticipated water scarcity.

### What is Water Reuse?

Water reuse is repurposing water to increase a community's accessible water supply. The practice of reusing water is practiced in a variety of ways all around the world.

Communities can now reuse water for a variety of reasons, including drinking, agriculture, and manufacturing operations, thanks to recent improvements in water technology.

to describe the many types of water reuse and their purposes:

- Reused or recycled water indicates that the water has been used more than once.
- Actual reuse occurs when downstream communities use surface water as a source of drinking water.

Advanced treatment techniques are tried-and-true solutions for converting treated wastewater into high-quality trash.

water - or cleaned water - for re-use as a source of drinking water. The treated water meets or exceeds state and federal standards for drinking water as well as additional water quality objectives.

In general, reuse in non-drinking water does not imply compliance with drinking water standards, and water quality targets may vary depending on end use and human exposure risk.

Reuse of both potable and oversized

Direct and indirect reuse of drinking water

In general, there are two forms of potable water reuse:

- Indirect Potable Water Reuse (IPR ) injects treated water into an environmental buffer (such as a groundwater aquifer or surface water reservoir, lake, or river) before mixed water is added to the water

- Direct Potable Water Reuse (DPR) injects treated water directly into the existing water system

### **Water resource planning:**

To maximize resources, water managers often look at a diverse portfolio of water sources in their long-term outlook.

Public water supply in Uzbekistan comes from a variety of sources, including surface water and reused water. Water planning and management are becoming increasingly complex as surface water and groundwater supplies in many regions are stressed.

As a result, many communities are including potable water reuse in their integrated water plan as a practical solution to ensure reliable water sources in the future. There are many benefits to reusing drinking water.

In addition to playing an integral role in the water portfolio.

The constraints on clean water and sanitation for all are complex and depend on the decisions of actors at all levels of government, the private sector, nongovernmental organizations and the public. They are also defined by broad development policies that may or may not prioritize the provision of these services over long-term, national and local action plans, which, even when properly formulated, are often not properly implemented due to short-term planning, lack of managerial, financial and/or human capacity, and the water needs of other sectors, such as energy or agriculture, over which the water sector has limited voice or control. The most pernicious limitation is often the political will, which is unsupported and dependent on political interests and electoral cycles.<sup>3</sup>.

In most developing countries, the provision of clean water and, to some extent, also sanitation services is a priority over other services. However, this prioritization is not always accompanied by sustained support, resources or interest. As for wastewater management, that's just forgotten. There seems to be a lack of understanding of the many negative impacts of wastewater and related pollution on the provision of clean water, and the extent to which they negatively impact human health and the environment.

It is a fact that water resources around the world are under pressure from economic development, population growth, urbanization, and, more recently, climate variability and change; but it is also largely pollution that limits the availability of water to all people for all purposes in quantity and quality. It is difficult to find a solution because, as discussed earlier, it depends on many technical and non-technical decisions that are made without analyzing their impact on water

availability. Situations are further exacerbated by the inability to implement regulatory frameworks, lack of long-term planning, inadequate governance and leadership, government capacity, neglect of demand-side practices (price and non-price measures), ignoring awareness raising, including attitudes and behaviors and weak intersectoral cooperation.

The deterioration of water pollution affects both developed and developing countries. In developing countries this is mainly due to rapid population growth and urbanization, increase in industrial and other economic activities, as well as intensification and expansion of agriculture combined with lack of local and national legal and institutional capacity (managerial, technical, financial, enforcement, etc.), as well as political and public apathy to improve and maintain water and wastewater management processes in the long term. Much attention is being paid to sanitation, especially the construction of toilets and sewage treatment plants, but their construction itself will not improve water quality in the medium and long term unless commensurate attention is given to significantly increasing institutional capacity for planning, management, and implementation.<sup>4</sup>

The safe reuse of water resources (using them more than once) is a radical contribution to the old water management paradigm, which rarely considered the value of recycled wastewater and its reuse for drinking. Large populations requiring more water and producing more wastewater that is not always treated properly, current and projected water scarcity and degradation, and water-related health and environmental problems have led more and more cities to treat urban wastewater to a higher quality and either reuse it for drinking and non-drinking purposes or discharge it (it's now cleaner) into the

environment. Appropriate regulations, improved technology, more reliable monitoring and control systems.

### **What does the future hold for potable water reuse?**

Water is a valuable and finite resource that we must use more efficiently because it is critical that materials remain available and preserved for future generations. The reuse of drinking water is viable and environmentally friendly.

A friendly strategy to improve efficiency, and in addition will undoubtedly play a significant role in the overall portfolio of water utilities in the future. To the implementation and expansion of drinking water reuse projects, management standards should be continuously improved, treatment control should be improved as treatment technologies and strategies evolve, individual operator training and certification should be developed. In addition, as more municipalities and water agencies take advantage of drinking reuse, it has become increasingly important to alleviate concerns and promote public confidence in drinking water reuse. Working together to solve these problems, reusing drinking water can help us better manage and expand vital water resources at the local level.

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