



WATER POLLUTION IN BULGARIA, ITALY, GREECE, PORTUGAL, SERBIA AND TURKIYE.

There is no denying that the rich natural environment of all our countries is a major and valuable asset and provides many ecosystem services such as drinking water and water for irrigation and industry, food, habitat for biodiversity, tourism and recreation to name a few. However, despite its huge significance, the natural environment is increasingly threatened by pressures mainly from industrial and agricultural intensification, rapid urbanization and tourism expansion. These threats create a host of problems for the quality of water and their severity leads to the conclusion that measures to mitigate or even completely prevent the environmental impact of human activity should be both legislated and applied vigorously.

SOURCES OF POLLUTION

The World Health Organization (WHO) defines contaminated water as water that undergoes changes in its composition until it becomes unusable. In other words, it is toxic water that cannot be drunk or used in essential activities such as agriculture. The main pollutants in water include bacteria, viruses, parasites, fertilizers, pesticides, medicines, nitrates, phosphates, plastics, faecal waste and even radioactive substances. These elements do not always taint the water, so that water pollution is often invisible. For this reason, chemical analyses of small samples are used to assess the state of water quality.

A major threat to our countries' water quality is increased and insufficiently regulated industrial activity. Industrial facilities account for a significant part of global water consumption and the environmental impact of their waste can have devastating results. Liquid wastes of industrial establishments (factories, mines, quarries, landfills) discharged without treatment, lead to severe water pollution. Chemicals and organic compounds in wastewater can decrease the

amount of dissolved oxygen in the water harming aquatic life, or even directly poison it.

Similarly, water pollution is also a result of intensive agriculture. Pesticides and herbicides used in farming are compounds difficult to decompose in water and can be harmful to animal's and humans' health alike. Some of them can cause accumulation and toxic effects in living bodies and/or have mutagenic and carcinogenic effects.

Furthermore, another source of serious water pollution is the rapid unplanned expansion of residential areas due to urbanization and/or tourism with little attention to its effect on the environment. This means huge quantities of sewage and municipal wastewater are often discharged untreated and without control into local watercourses. As a consequence, the water becomes extremely polluted, contaminated with water soluble acids, water-insoluble liquids, suspension, emulsion, as well as a wide variety of bacteria, many of which harmful.

Other – lesser but still damaging – sources of pollution, according to the individual countries' reports are discharges of ship fuel and plastics from maritime traffic (fishing boats, tankers and freight transport), modification of the coastline due to construction of industrial and harbor facilities, uncontrolled household water consumption, poor hygiene practices resulting in contamination of water sources, acid rain, inefficient energy generation, and microplastics, chemicals, medicines, heavy metals and other harmful substances resulting from human activity.

CAUSES

All the above raise the issue of how we arrived at this difficult situation. It appears that the culprit is lack of true commitment to the protection of the environment which results in little or no consideration of the impact of human activity other than that of profit, convenience and speedy "growth". There is an absence of environmental policies (and funds) while deficiencies can be found in legal and institutional frameworks. This is combined with limitations in the enforcement of environmental laws due to organized local interests restricting policy implementation, as well as irregularities and malpractices by local authorities, private citizens and state institutions. Water protection measures are often not applied, and the penalties for perpetrators are too light to act as a deterrent.

SOLUTIONS - CONCLUSION

The obvious conclusion to be drawn is that what is absolutely necessary at this point is a change of attitude towards environmental issues. On a personal level, the people need to modify their habits to reduce plastic consumption, properly dispose of medical waste, chemical cleaners, oils and non-biodegradable items, eat more organic food and cut down on meat consumption. On a state level, the protection of our natural environment should be in the forefront during legislative and decision-making processes rather than an afterthought. To this end, effective measures are needed: There is a necessity to reinforce wastewater disposal and treatment systems while protecting both water and soil. In addition, better water management in agriculture must be implemented and the efficiency of electricity generation should be improved. Apart from that, chemical contamination should be prevented and existing illegal pollution sources need to be rehabilitated. Nonetheless, measures and laws are naturally useless if they remain theoretical. Our countries' aim should be to find environmentally appropriate solutions for each problem and then commit to their constant and vigorous implementation with incentives for environmentally friendly practices and zero tolerance for violations. Only then can we hope to reverse some of the damage and maybe restore our natural wealth for future generations to enjoy too.

