

DISASTER MANAGEMENT IN WATER CRISES

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ABSTRACT :- Water crises, including scarcity and pollution, are a global problem that endangers human health, the environment, and economies. Disaster management approaches play a crucial role in minimizing the aftereffects of these crises. This paper investigates the water crisis and its origins, and effects, and proposes disaster management solutions. It consists of strategies for preparedness, response, recovery, and mitigation, specifically around sustainable practices and community engagement.

KEYWORDS:- Water crises, Pollution, Global Problem and Human Health.

INTRODUCTION :-

Though water is one of the basic things essential for our life, major part of the world is on the verge of water crisis. Such crisis can be because of natural cause like a drought, or man-made exploitation and mismanagement of water. The results of water crises stretched over agriculture, industry and daily use in homes. Understand the mechanisms of water crises and proposed the relevant disaster management framework for them are main goal of this paper.

Nature and Causes of Water Crisis:

Water crises usually take one of two progressive forms: water scarcity and water contamination.

1. Water Scarcity:

Physical Scarcity: This is where demand for water exceeds the country's water resource availability, often worsened by climatic conditions such as changing weather and population increases.

Economics: This context speaks to the lack of infrastructure or capacity to access water from existing supplies due to economic factors.

Contributors: Over-extraction of groundwater, inefficient water use in agriculture, and urbanization.

2. Water Contamination:

Chemical Contaminants: Industrial pollutants, pesticides, and pharmaceuticals.

Biological Contaminants: Pathogens from sewage, livestock, and wildlife.

Contributors: Poor waste management, agricultural runoff, and inadequate sanitation facilities.

Effects of Water Crises:

Health Impacts: Spread of waterborne diseases, malnutrition due to food shortages.

Economic Impacts: Reduced agricultural yields, increased costs for water treatment and procurement, loss of productivity.

Environmental Impacts: Degradation of ecosystems, loss of biodiversity, soil erosion.

Disaster Management Approaches:

Effective disaster management in water crises involves a multi-faceted approach, integrating preparedness, response, recovery, and mitigation.

1. Preparedness:

Risk Assessment: Identifying vulnerable areas and populations, evaluating water resources, and forecasting potential crises.

Early Warning Systems: Implementing technologies for real-time monitoring of water levels and quality.

Capacity Building: Training local communities and authorities in water management and emergency response.

2. Response:

Emergency Water Supply: Deploying alternative water sources, such as bottled water and mobile water treatment units.

Health Interventions: Providing medical care for waterborne diseases, ensuring sanitation and hygiene in affected areas.

Coordination: Establishing communication networks among government agencies, NGOs, and local communities.

3. Recovery:

Rehabilitation of Water Systems: Repairing infrastructure, restoring natural water bodies.

Economic Support: Financial assistance for affected industries, compensation for lost income.

Community Engagement: Involving local populations in decision-making processes, promoting public awareness.

4. Mitigation:

Sustainable Water Management: Implementing practices like rainwater harvesting, efficient irrigation, and wastewater recycling.

Policy and Regulation: Enforcing laws to protect water resources, encouraging responsible consumption.

Technological Innovation: Investing in research and development of new technologies for water purification and conservation.

Case Studies:

1. Cape Town Water Crisis (2017-2018):-

Background: Severe drought led to the depletion of reservoirs.

Management: Implementation of strict water usage regulations, public awareness campaigns, and infrastructure investments to diversify water sources.

Outcome: Avoidance of "Day Zero" through combined efforts of government, businesses, and residents.

2. Flint Water Crisis (2014-2019):

Background: Lead contamination due to corrosion in old pipes after switching water sources.

Management: Distribution of bottled water, pipe replacement programs, legal actions, and community advocacy.

Outcome: Ongoing recovery with significant public health and trust repercussions.

CONCLUSION :-

Water crises present complex challenges requiring coordinated and sustained efforts in disaster management. By integrating preparedness, response, recovery, and mitigation, societies can enhance their resilience to water-related disasters. Sustainable water management practices, community engagement, and technological advancements are vital components of effective disaster management strategies. Continued research and investment in these areas will be crucial to addressing the growing global water crisis.

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