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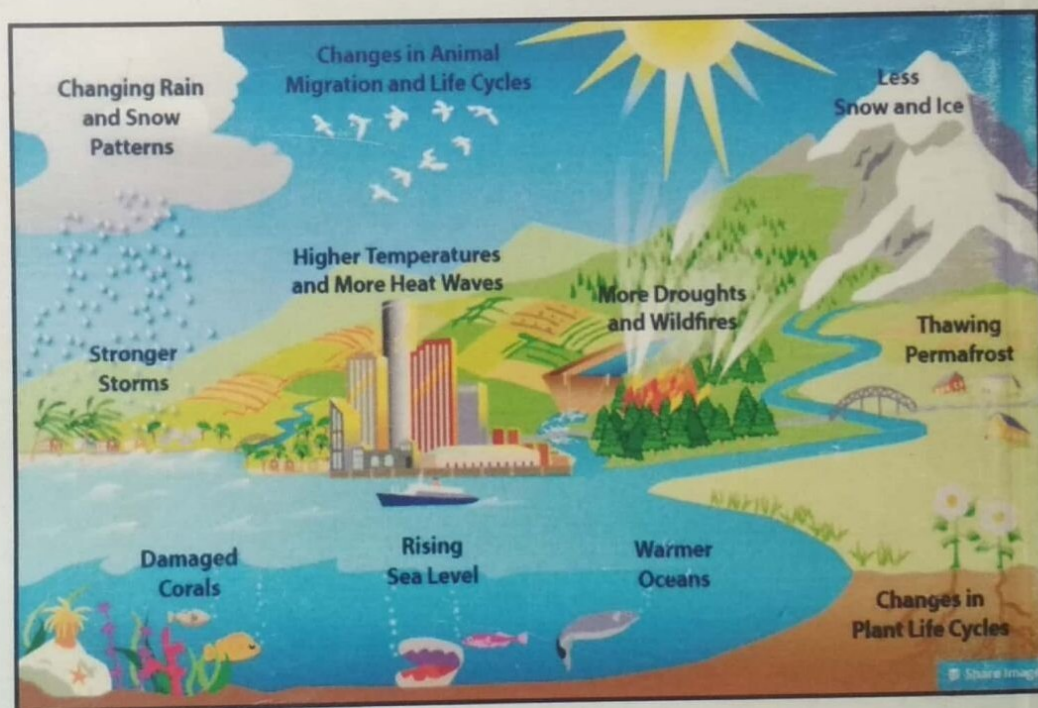
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- Dr. Mangu Ram**
International Financial Reporting Standards:
An Analysis of Benefits and Risks 114-126
- Dr. Arjun Lal Meena**
Priyanka Bisht
Analytical Study of Monthly and Annual Rainfall
Pattern in Bassi Tehsil, Jaipur 127-134
- Dr. Jai Bharat Singh**
Dr. Jai Singh Rathore
Dr. Sultan Singh
Expansion of Mining and Industrial Activities and their
Impact on Enviromental Degradation: A Geographical
Study of Land and Soil Pollution in Bikaner District (Raj.) 135-146
- Gaurav Kumar Jain**
Demographic Pattern and Population Density Zone:
A Geographical Analysis of Jodhpur City in Western Rajasthan 147-161
- Dr. Nimba Ram**
The Water Scarcity in An Ecological Crises:
Geographical Analysis 162-168
- Ramesh Kumar**
Comparative Study of Geographical and Cultural
Aspect of Ecotourism Centres in Western Rajasthan 169-175
- Bhagwat Prakash Dayma**
Dr. Rajesh Yadav
The Atmosphere of Earth 176-200
- Gaurav Kumar Jain**
Global Environmental Law and their Response in India 201-207
- Bharat Ratnu**
Water Scarcity and Pattern of Migration: A case Study of
Makrana Tehsil, Nagaur District, Rajasthan 208-221
- Gajendra Shekhawat**
Soci-Economic Upliftment in the Command Area of
Indira Gandhi Canal 222-228

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JAI NARAIN VYAS UNIVERSITY, JODHPUR**

***“THE WATER SCARCITY IS
AN ECOLOGICAL CRISES:
GEOGRAPHICAL ANALYSIS***

Dr. Nimba Ram

Abstract

The water crises is an ecological crises with commercial causes but no market solutions. Market solutions destroy the earth and aggravate inequality. The solution lies in rejuvenating ecological democracy. Water as common because it is the ecological basis of all life and because its sustainability and equitable allocation depend on the cooperation between members of community. Although water has been managed as a commons throughout human history, across diverse cultures, and although most communities manage water resources as commonly shared public good even today, privatization is gaining momentum.

Full Paper

Towards a way to improve the situation

"There is a water crisis today. But the crisis is not about having too little water to satisfy our needs. It is a crisis of managing water so badly that billions of people - and the environment - suffer badly." World Water Vision Report

With the current state of affairs, correcting measures still can be taken to avoid the crisis to be worsening. There is a increasing awareness that our freshwater resources are limited

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and need to be protected both in terms of quantity and quality. This water challenge affects not only the water community, but also decision-makers and every human being. "Water is everybody's business" was one of the key messages of the 2nd World Water Forum.

Saving water resources

Whatever the use of freshwater (agriculture, industry, domestic use), huge saving of water and improving of water management is possible. Almost everywhere, water is wasted, and as long as people are not facing water scarcity, they believe access to water is an obvious and natural thing. With urbanization and changes in lifestyle, water consumption is bound to increase. However, changes in food habits, for example, may reduce the problem, knowing that growing 1kg of potatoes requires only 100 litres of water, whereas 1 kg of beef requires 13 000 litres.

Improving drinking water supply

Water should be recognized as a great priority. One of the main objectives of the World Water Council is to increase awareness of the water issue. Decision-makers at all levels must be implicated. One of the Millennium Development Goals is to halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation. To that aim, several measures should be taken:

- guarantee the right to water;
- decentralise the responsibility for water;
- develop know-how at the local level;
- increase and improve financing;
- evaluate and monitor water resources.

Improving transboundary cooperation

As far as transboundary conflicts are concerned, regional economic development and cultural preservation can all be strengthened by states cooperating of water. Instead of a trend

towards war, water management can be viewed as a trend towards cooperation and peace. Many initiatives are launched to avoid crises. Institutional commitments like in the Senegal River are created. In 2001, Unesco and Grenn Cross International have joined forces in response to the growing threat of conflicts linked to water. They launched the joint From Potential Conflicts to Co-Operation Potential programme to promote peace in the use of transboundary watercourses by addressing conflicts and fostering co-operation among states and stakeholders.

More about this program www.gci.ch/en/programs/natural_02.htm

www.unesco.org/water/wwap/pccp

Water resources are becoming scarce

Agricultural crisis

Although food security has been significantly increased in the past thirty years, water withdrawals for irrigation represent 66 % of the total withdrawals and up to 90 % in arid regions, the other 34 % being used by domestic households (10 %), industry (20 %), or evaporated from reservoirs (4 %). (Source: Shiklomanov, 1999)

As the per capita use increases due to changes in lifestyle and as population increases as well, the proportion of water for human use is increasing. This, coupled with spatial and temporal variations in water availability, means that the water to produce food for human consumption, industrial processes and all the other uses is becoming scarce.

Environmental crisis

It is all the more critical that increased water use by humans does not only reduce the amount of water available for industrial and agricultural development but has a profound effect on aquatic ecosystems and their dependent species. Environmental balances are disturbed and cannot play their

regulating role anymore. (See Water and Nature)

Facts and Figures

1.1 billion people live without clean drinking water

2.6 billion people lack adequate sanitation (2002, UNICEF/WHO JMP 2004)

1.8 million people die every year from diarrhoeal diseases.

3 900 children die every day from water borne diseases (WHO 2004)

Daily per capita use of water in residential areas:

- 350 litres in North America and Japan
- 200 litres in Europe
- 10-20 litres in sub-Saharan Africa

Over 260 river basins are shared by two or more countries mostly without adequate legal or institutional arrangements.

Quantity of water needed to produce 1 kg of:

- wheat: 1 000 L
- rice: 1 400 L
- beef: 13 000 L

(D.Zimmer, and D.Renault, 2003)

Resources / Supply

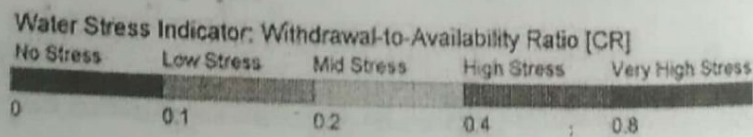
By water resources, we mean all the water available for human use, namely domestic use, agriculture, industry.

By water supply, we mean water that has been treated and has become drinking water.

The poorer the country; the smaller the difference, as people often drink water without treatment. As long as the country develops, the management of water resources in general differs from the one of drinking water.

An increase in tensions

As the resource is becoming scarce, tensions among different users may intensify, both at the national and international level. Over 260 river basins are shared by two or more countries. In the absence of strong institutions and agreements, changes within a basin can lead to transboundary tensions. When major projects proceed without regional collaboration, they can become a point of conflicts, heightening regional instability. The Parana La Plata, the Aral Sea, the Jordan and the Danube may serve as examples. Due to the pressure on the Aral Sea, half of its superficiality has disappeared, representing 2/3 of its volume. 36 000 km² of marine grounds are now recovered by salt.



Source: WaterGAP 2.0 - December 1999

Water stress results from an imbalance between water use and water resources. The water stress indicator in this map measures the proportion of water withdrawal with respect to total renewable resources. It is a criticality ratio, which implies that water stress depends on the variability of resources. Water stress causes deterioration of fresh water

resources in terms of quantity (aquifer over-exploitation, dry rivers, etc.) and quality (eutrophication, organic matter pollution, saline intrusion, etc.) The value of this criticality ratio that indicates high water stress is based on expert judgment and experience (Alcamo and others, 1999). It ranges between 20 % for basins with highly variable runoff and 60 % for temperate zone basins. In this map, we take an overall value of 40 % to indicate high water stress. We see that the situation is heterogeneous over the world.

The concept of Water Stress



Photo by ADMVB bokidiawe@yahoogroupes.fr

Already there is more waste water generated and dispersed today than at any other time in the history of our planet: more than one out of six people lack access to safe drinking water, namely 1.1 billion people, and more than two out of six lack adequate sanitation, namely 2.6 billion people (Estimation for 2002, by the WHO/UNICEF JMP, 2004). 3900 children die every day from water borne diseases (WHO 2004). One must know that these figures represent only people with very poor conditions. In reality, these figures should be much higher.

Water Crisis

While the world's population tripled in the 20th century, the use of renewable water resources has grown six-fold. Within the next fifty years, the world population will increase by another 40 to 50 %. This population growth - coupled with industrialization and urbanization - will result in an increasing demand for water and will have serious consequences on the environment.