Environmental Studies Program

Issues Update: GLOBAL WATER SHORTAGE

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Climate change, Agriculture, Water Shortages, Health Concerns, Adaptations

Overview

According to the World Health Organization, one out of six people on this planet do not have access to fresh water. Limited access to water, especially sanitized water, affects health through the means of water borne diseases. Research and current events have shown a trend in water shortages occurring worldwide related to climate change, over-population, and human activities such as agriculture. For example, major rivers, such as the Colorado, Rio Grande, Indus, Murray-Darling, and Yellow, no longer reach the sea (The Economist 2009). The International Panel on Climate Change report on Climate Change and Water states that weather patterns will change in a way that increases aridity in dry locations and rainfall will increase in ecosystems that are moister. Global temperatures increase and permafrost and ice are melting which alters the hydrological cycle. As the population continues to increase and weather patterns change, solutions to water shortages and new water management plans need to be implemented.

Technology Responses

Planning for the effects of climate change on water availability is beneficial and adaptation techniques are necessary. Cooperation among communities, governments, NGO's, and research teams will result in the best adaptation strategies. Changing practices can reduce the amount of water being used, an example being the agricultural industry. It takes 1,000 liters of water to grow a kilogram of wheat while it takes up to 15,000 liters of water to produce a kilogram of beef. Altering the agricultural system in means of using permaculture or using crops that need less water could also reduce water use. Lifestyle changes can be made, recycling water, reducing water use, etc. Political changes can be made, like rationing water or implementing water storage systems. Desalinating water is an expensive option, but is a new technology that is being practiced. The options to change our habits are limitless as well as the different adaptation schemes.

WHAT'S NEW…

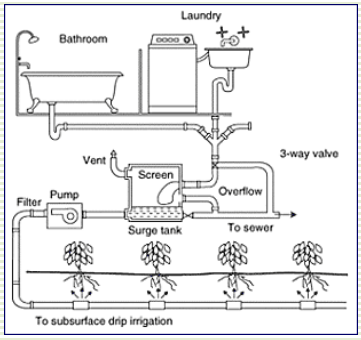
Some ways to adapt to water shortages…

Rain water storage

Desalination Plants

Permaculture

Greywater



CASE STUDY: Moroccan Coastal Management: *Building capacity to adapt to climate change through sustainable policies and planning*

Introduction

The coastal provinces of Nador and Berkane in Morocco are rural areas dependent on fishing and farming and are feeling the effects of climate change and human development. Poverty levels in this area are high and increase the challenge of the situation. Tourism and destroying wetlands is harming the water supply for the people as well as changing the ecosystem. The wetlands and the water table have more salt from the sea water and the farmers are dealing with a lack of precipitation. Storms and rising sea levels are affecting the communities as well.

Approach

There are many partners involved in creating an adaptation plan for the coastal area of Morocco including research institutes, community based organizations, and national and regional officials in environment, agriculture, health, tourism, forestry, water and land planning departments. Through talking to community members and studying the effects of climate change education efforts to explain the problems are carried out. Understanding the problem is important in trying to adapt to it. Efforts that the community is currently working on include rainwater storage, a more effective water management plan, creating a system to inform community members on large storms, switching to salt tolerant cereals, reducing the tourism impacts by creating small scale tourism.

Results

This project is still a work in progress but the changes being made are helping the community members.
More projects can be followed at adaptationlearning.net

Resources

IPCC Report on Climate Change and Water
http://www.ipcc.ch/ipccreports/tp-climate-change-water.htm

WHO and UNICEF Joint Water Monitoring Program
http://www.wssinfo.org/en/welcome.html

WHO Global Water Supply and Sanitation Assessment 2000
http://www.who.int/docstore/water_sanitation_health/Globassessment/GlobalTOC.htm

References

IPCC Report on Climate Change and Water. http://www.ipcc.ch/ipccreports/tp-climate-change-water.htm

"Water shortages are a growing problem, but not for the reasons most think." The Economist Apr. 2009.

Global Water Supply and Sanitation Assessment 2000. World Health Organization. 12 Apr. 2009 <http://www.who.int/docstore/water_sanitation_health/ Globassessment/GlobalTOC.htm>.