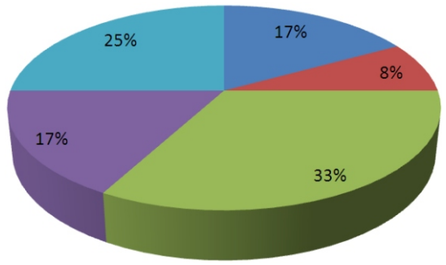

- It takes place every time
- It takes place about half the time
- It is quite common
- It occurs occassionaly
- It occurs infrequently/never

WATER AGRICULTURE & ECO SYSTEM

By 2050 , amount of food needed is expected to roughly double. As there is increase in population , incomes & change in market & preferences of people for foods. Increase in water use in agriculture certainly put pressure on other usage .In last few decades, crop production was seen separately from land management. Landscapes are interlinked with biophysical system. Tinkering with one element can cause vast changes in connected system. Landscape change lead increased eutrophication & potential loss of marine diversity and fish stock. Irrigation, drainage & clearance of natural vegetation and construction of water storage facilities have changed natural water flow , damaging groundwater recharge and waterscapes like wetlands. On other side, fertilizer & chemicals has increased concentration of nutrients and agrochemicals in environment. too many nutrients in freshwater and coastal system boosted up algal blooms(shortage of oxygen in water)causing death of other organism Irrigation through river water lowered the amount of water discharged in ocean. A recent study of 145 worldwide river showed that amount of water discharged had decline in 20 % of cases. According to International Water management Institute show that, at todays' level of water productivity, some 13000 km3 of water per year will require to feed the world by 2050. It is 6000 km3 more than is being consumed by agriculture today .To stop such aberrant changes we need involvement of local actors , central administration & policy makers. Also to ensure for sustainable agriculture systems, we need safe inhabitation of other creatures. We need ecosystem to be resilient so it can cope with abrupt changes without collapsing.

FACT: 9 % of agricultural lands is already so badly degraded that it can not reclaimed for productive farm level measure and 40 % of agricultural land is degraded to the point that crop yields are reduced. (Wood .sebstian, & scherr 2000)

WATER VS WATER

As globalization opens up opportunities for private players, in last one decade, corporate control over water and water distribution in India has grown rapidly. Currently, the packaged water business is of Rs 1500 crore, and it's growing at rate of 15-20% annually. There are 150 brands are battling for bottled water market. While industry is making money by paying nominal price .A bottling companies pay a minute amount to the government for the use of groundwater. For example: In drought-prone Kala Dera, near Jaipur, Coca-Cola gets its water free except for a tiny cess it pays the government -- a little over Rs 5,000 a year in the three years 2000-2002, and Rs 24,246 in 2003. The privatization and bottling of water for profit denies the majority of people a fundamental right that should be guaranteed by the state. In the absence of an effective nationwide policy and norms for groundwater use, it appears that the bottled water industry is getting away with making profits out of a resource that rightfully belongs to all citizens. In the process, It is also destroying the environment and people's livelihoods. Bottled water is looks indispensable these days. Private industry is fulfilling demand of drinking water that public utilities don't meet . People are paying prices that they cannot afford because they have no alternative. Absolutely, there is message in bottle which must bring into notice of our policymakers.

FACTS: *India is said to be the 10th largest bottled water consumer in the world. The demand has increased from two million cases in 1990 to an estimated 68 million cases by 2006.*
Source: Bottled Water India, Infochange

ECHO SES Team

Head Office:
9,Prem kunj, Adarsh Colony,
Shohratgarh-272205
Siddharthnagar
Uttar Pradesh, India

Contact
(05544) - 263271
(0522) - 4025846

Send Your Feedback At :
feedback@sesindia.org
(plz write "ECHO SES " as subject)

Layout & Design:
www.aksindia.com

Dr.B.C.Srivastava, Sandeep Srivastava, Dharmendra Kumar, K.K.Upadhayay, Rakesh Pandey

ECHO SES TEAM : DR. B. C. SRIVASTAVA ,DR. AJAY SRIVASTAVA & PRABHAKAR PRATAP SINGH REGIONAL OFFICE :D-41, SECTOR-K, ALIGANJ, LUCKNOW,CONTACT US:(0522)- 4025846 Web: http:// sesindia.org , Data source: SIWI, Stockholm

Volume 1, Issue 2

ECHO SES

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MESSAGE FROM SECRETARY

Dear Reader,

Greetings from SES! In our Second issue, we are focusing on water related issues. Generally, water should be treated as a social and cultural good, and not primarily as an economic good .Water is most fundamental conditions for survival and necessary for standard of living. The need of hour is to create a clear land and water rights system, plan imports of water-demanding goods, especially foods (i.e. by considering virtual water),adopt measures that will encourage people to eat foods that require less water to produce, plan for future bio-energy-generated water demands, Improve energy efficiency to curb climate change and decrease the amount of green water used to produce bio-energy.

Dr. B.C.Srivastava
Secretary

WATER SCARCITY

Remember Ex-Prime Minister Chandrashekhar and his Bharat Yatra. The most important thing on his development agenda after he completed his marathon was water. Read Atal Behari Vajpayee's address to the parliament on NDA's action plan for the nation. Vajpayee says that if there is one thing he is going to do in five years of his tenure is to ensure that all villages will get drinking water. Rajiv Gandhi went beyond rhetoric to actually set up a drinking water mission. After So many worries over water & promises, Water supplies are still under severe stress. As a result of poor water resource management, high population growth, rapid urbanization and increasing demand from competing uses for drinking, agriculture, industry and energy, the pressure on this finite resource is mounting every day. Climate change is also affecting the hydrological cycle, significantly affecting freshwater production and its distribution.

According to World bank report, Most major Indian cities will run dry by 2020.. In Indian Scenario, 85 % percent of water is used for agriculture, 10 percent for industry and 5% for domestic use. Most of Indian population lives in rural area and most of them on negative side of poverty, economic scarcity and food insecurity is very high. There are parts of India where farmers do not get water for irrigation while state like Bihar, west Bengal facing problem of arsenic , Gujrat and Andhra facing high fluoride in water while salinity hazard in the east and west coast of india.

Last year a 30-year-old man Viral Dholakia, who was part of a 1,000-strong group protesting against the stringent water cut outside the Bombay Municipal Corporation headquarters recently, died of apparent cardiac failure during a police lathicharge. Such Incidents looks strange but bound to get repeated unless we sit up and take some drastic steps to counter water crisis, which is sure to assume alarming proportions in coming years.

FROM EDITOR`S DESK

Dear Reader,

Water, water everywhere and not a drop to drink.... While thinking for this issue of newsletter, recent two major scientific discoveries were craving in my mind. There are vast quantities of water on the Moon, and water ice exists at mid-latitudes on Mars. While on Earth, 1.1 billion people have no access to safe drinking water and two million children die every year for want of clean water and sanitation facilities. If depletion of fresh water continues at the current pace, It is believed that the next world war would not be for land, nor for oil, but for water. Water crisis is now a day's one of the most glaring problems that has been staring at us and is becoming more and more piercing day by day. The gloomy arithmetic of water at first instant looks intimidating but there are possible sustainable solutions. Wise water management not only reduces poverty but also health risks and multiple vulnerabilities that poor face. There are a number of ways to save water, and they all start with you. For Example: Turning off the water while you shave or wash your hair can save up to 1135 liters & 567.5 litres a month respectively. Let be water wise and it can result as healthier, wealthier and more secure people whose choices in life would increase greatly.

With Regards,

Sandeep Srivastava

water day is celebrated on 22nd march every year. UN Theme for this year is " Water Quality, reflecting its importance alongside quantity of resource in water management."

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2.4 billion people lack access to sanitation.

India has 16 per cent of the world's population and four per cent of its fresh water resources.

Estimates indicate that surface and ground water availability is around 1,869 billion cubicmetres (BCM). Of this, 40 per cent is not available for use due to geological and topographical reasons.

FACTS: 2.4 billion People lack access to sanitation. India has 16 per cent of the world's population and4 % of its fresh water resources. Estimates indicate that surface and ground water availability is around 1,869 billion cubicmetres (BCM). Of this, 40 per cent is not available for use due to geological and topographical reasons. Around 4,000 BCM of fresh water is available due to precipitation in the form of rain and snow, most of which returns to the seas via rivers.

WATER BLUES

Researchers recently calculated the amount of water that crops will require by 2030 and 2050 in order to alleviate hunger in 92 developing countries They concluded that blue water resources will only be able to supply around 15 percent of the amount needed (Rockström et al. 2007). Most will have to be met by rainfed agriculture which means reducing the huge water losses currently occurring. So in coming time, Water supply to different sectors will become more challenging Scarcity of green water (e.g. water in the soil) will limit food and biomass production. Overstretched blue water scarcity can lead to water supply collapses, crop failure in irrigated fields, the closure of river basins, and increased infrastructure costs (to make more water accessible for economic use). Other symptoms include stakeholder disputes and higher levels of water pollution (because less water is available to dilute contaminants). Decrease water losses and increase productivity by changing water use patterns. This can be achieved by stricter demand-management techniques (effectively reduce agricultural, industrial and domestic water losses), improving green water management (like increasing rainwater harvesting), increasing pollution abatement measures and water reuse. Increasing the use of modern agricultural techniques (Example : drip-irrigation and greenhouses, which minimize evaporation losses).

LINKING POVERTY WITH WATER

"IF A FREE SOCIETY CAN NOT HELP THE MANY WHO ARE POOR, IT CAN NOT SAVE THE FEW WHO ARE RICH".

People who are suffering from extreme poverty and able to earn little amount of money, a single disease or disaster can throw them on door of death. Water can play an important role in reducing poverty. A range of vulnerabilities can be identified in relation to water management: Water-related disasters, threatened ecosystems, water pollution, and Poor access to many forms of infrastructure and technologies, Soil erosion, Poor resource management. Factors that need to be addressed in any poverty reduction strategy: Enhanced livelihoods security, reduced health risks, Reduced environmental, economic and political vulnerability Pro-poor economic growth.

FACTS:4 billion cases of diarrhoea each year, causing 2.2 million deaths, mostly of children.

NOT A DROP TO DRINK...

In Summers ,cities in India complain about water shortage not to mention many villages which lack safe drinking water. In the list of 122 countries rated on quality of portable water, India ranks a lowly 120.Although India has 4% of the world's water, studies show average availability is shrinking steadily. It is estimated that by 2020, India will become a water-stressed nation. Nearly 50% of villages still don't have any source of protected drinking water.

According to 2001 census 68.2% households have access to safe drinking water. The department of drinking water supply estimates that 94% of rural habitations and 91% urban households have access to drinking water. The ground reality is that of the 1.42 million villages in India, 1, 95,813 are affected by chemical contamination of water. The quality of ground water which accounts of more than 85% of domestic supply is a major problem in many areas as none of the rivers have water fit to drink. Till the 10th plan the government had spent Rs 1,105 billion on drinking water schemes. Yet it is the poor who pay a heavier price spending around Rs 6700 crore annually on treatment of waterborne diseases.

There is an urgent need to look for alternative sources of portable water in places where water quality has deteriorated sharply. Community based water quality

FACT: Statics reveal that 97% of the total amount of the water in the earth is salt water and is thus of no use to support human or animal life (excluding marine animals). Only 3% of the available fresh water on earth, more than half of it is locked in glaciers and less than 0.01% is accessible fresh water in lakes and rivers. So that leaves us with little

React

Respected Sir, First I want to congratulate you ,for Ist editon of News letter " ECHO SES" . I got it very colorful, informative and eye catching. Wishing you all the best for ECHO SES .

Dr.Hasan Fahim. Health Coordinator, PGSS, Gorakhpur. Send Your feedback at feedback@sesindia.org (Mention Subject: ECHO SES)

IMPERMISSIBLE WASTAGE

In 2008, Minister of State for Food Processing Industries (FPI) Subodh Kant Sahai informed Rajya Sabha that wastage of harvested food items is estimated to be around Rs 58,000 Crore at various stages. The losses of food between fields to our dinner table is equivalent to loss in water. One reasons for losses in food chain is an increasing distance between places where it is produced & consumed .In past, many people produced their own food but now it comes from different parts of the world. Other reasons are : Change in Consumers ,shift in consumption pattern among cereals crops and away from cereals towards animal products. Apart from food, expansion of bio-energy is a significant increase in pressure on water resources.

	FOOD PRODUCTION		PROCESSING & DISTRIBUTION		FOOD SUPPLY	CONSUMPTION UNIT
Activities	Crop Cultivation	Harvest	Vegetal foods Feed animal foods	Vegetal foods Feed animal foods Storage, transport, processing, packing,	Access: Food exposure, Food purchase; Food outlets and super-markets	Storage, Cooking, Consumption, Throwing food away
Kind Of losses	Water Losses	Crop Losses	Conversion losses	Distribution losses and spoilage during storage and processing	Spoilage and Wastage	Wastage, Overeating
Policy issues	Water and land management practices	Technical and management issues	Choice of production of animal foods or vegetarian foods	Technical Infrastructure	Business marketing, Food regulation, Consumer behaviour	Individual and collective consumer behavior

Fig: Overview of losses and wastage in the main stages of the food chain), and factors contributing to these losses and wastage

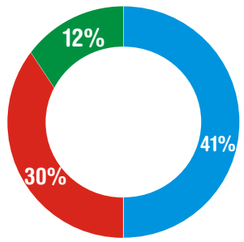
On farmers front, there is needs of improved seeds, harvesting technologies, rainwater harvesting with innovative way and financial & institutional arrangement. On other hand business community should take action to reduce water loss in their processing & transport system. At the same time, raising awareness among consumers about water implications of their diet, overeating & food wastage. We need to understand what is a tru e loss and what may appear to be losses.

According to FCI, around 23 million tones of food grains, 12 of fruits and 21 of vegetables are lost each year , with a total estimated value of 240 billion rupees.

CORRUPTION IN WATER SECTOR

Scarcity is not the lack of a natural supply of water, nor is it primarily an engineering problem, i.e. the lack of technical solutions. Instead, this global water crisis major a crisis of governance. The value of kickbacks to public officials normally ranged from 6 % to 11 % of the contract value. The study also suggests that side payments for transfers of staff occur frequently. Interestingly, side payments for promotions were less common. A more systematic effort to map petty corruption and its modus operandi in India's water sector has been done recently. Results show that:

- Customer respondents had made more than one small payment (median payment USD 0.45) in the past 6 months to falsify meter reading to lower bills.
- Customer respondents had made more than one small payment (median payment USD 1.90) in the past 6 months to expedite repair work.
- Customer respondents had made payment (median payment USD 22) to expedite new water and to expedite new water and sanitation connections



According to public official respondents, side payments occur on as pie chart given below: