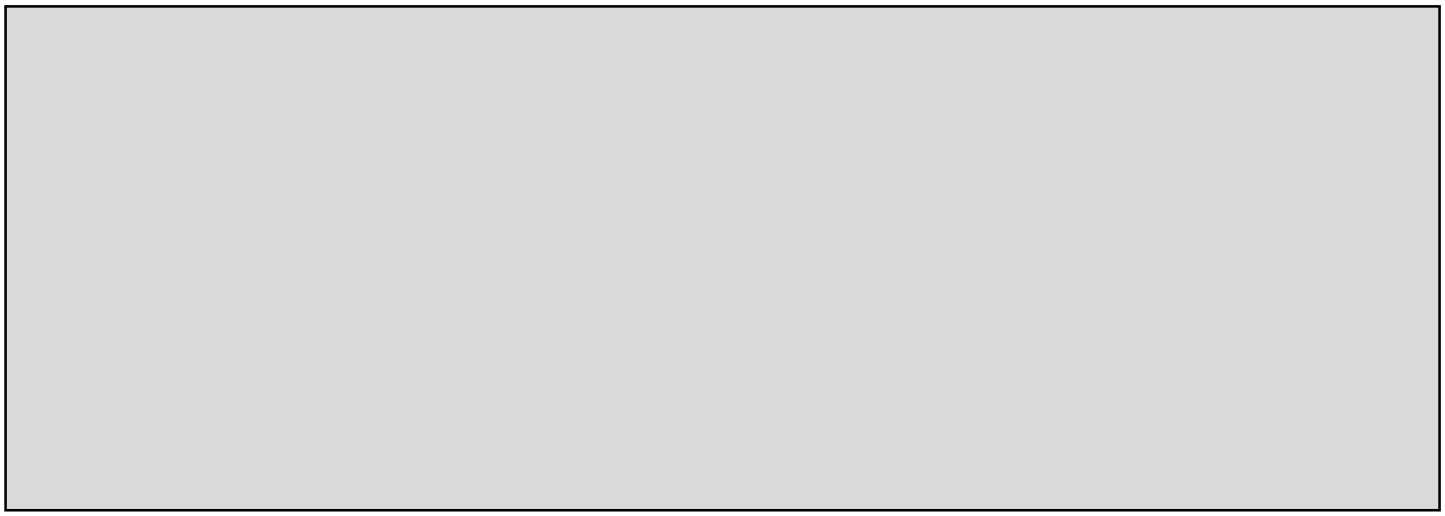

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BOOK-POST

News letter of

Bangalore Environment Trust **(Regd.)**

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SEPTEMBER 2006

WATER, the perennial subject

In our previous issue we spoke about the need to save every drop of water in view of its scarcity, and we discussed how we could do so as individuals by a little change in our domestic habits. Now, we explain how much better our overall situation would be if our administrators followed certain time honoured conservation practices.

P. S. APPU, the author, joined the IAS in 1951 and during his tenure he occupied many significant positions giving him a deep knowledge both of our human problems, as well as of the ecological stresses on our land. Our Planners should pay heed to his remarks. He voluntarily retired from the IAS in 1982 while serving as the Director of the Lalbahadur Shastri National Institute of Administration, Mussourie.

Some Steps for Restoring Ecological Balance

For centuries man lived in harmony with nature causing only minor damage to the environment until the Industrial Revolution. Its onset and the exponential economic growth that followed upset the ecological balance threatening the future of life on the planet. In this short article I shall deal with the tragic mismanagement of our precious water resources and make a few practical suggestions to avert the impending calamity.

We need water for drinking and other domestic uses, growing crops and industrial purposes. The South West Monsoon that brings rain to the whole country is highly variable in its spread, spacing and intensity. The North East Monsoon benefits only the extreme south of the Indian peninsula. A third of the districts in the country are chronically prone to drought. All over the country we have inadequate arrangements for storing the rain water. Often areas seriously affected by floods experience severe drought a few months later. Though we have over 120 large and small rivers, most of the water flows into the sea. We have built many large and small dams since independence. But the total storage capacity is low by international standards. Our dams can store only 200 cubic metres of water per person. The figure is 1000 cubic metres in China and 5000 in U.S.A. But dams as is well known have serious side effects.

The steady growth of population in recent decades has inevitably led to marginal land and hill slopes being brought under cultivation. This has been accompanied by the wanton destruction of forests. As a direct consequence of the loss of forest and grass cover the rain water flows down rapidly taking with it precious top soil. The land loses its ability to retain moisture.

We have been equally improvident in exploiting ground water. In large parts of the country outside the Indo-Gangetic valley and the deltas of the great rivers, ground water is scarce. We have been drawing out ground water all over the country far in excess of the annual recharge. As a result tube wells are drying up in areas where aquifers are scanty. Even in the Gangetic valley which sits on a vast underground lake, the ground water is getting depleted dangerously. In the Punjab, the heartland of our Green Revolution, the level of ground water is going down every year 50 centimetres. These alarming developments imperil our future.

Wisdom of our ancestors

Long before the spread of knowledge about soil and water conservation and sustainable agriculture, our ancestors had adopted sensible practices. I shall briefly describe some simple methods adopted in the past by illiterate farmers of Bihar and South India for making optimum use of the rain water and preserving moisture in the soil. In the districts of South Bihar all the small rivers drain into the Ganga and the land has a gentle slope from the south to the north. In most villages there used to be reservoirs with embankments on the east, north and west, the one on the north being the highest. With the southern side being left open water would accumulate in the reservoir as soon as it rained. Normally, there would be enough water for irrigating the paddy crop in a limited area. The reservoir would dry up by the time for harvesting the paddy came, in November-December. Still there would be enough moisture in the bed of the reservoir for sowing wheat. This excellent system of irrigation was in ruins by the time of independence as not enough attention had been paid to the maintenance of the embankments.

The North Bidar plain lying between the Nepal Terai and the Ganga is ravaged by severe floods every year. The land being saucer shaped the flood water would stagnate until December. In the District of Darbhanga, of which I was Collector in the late nineteen fifties, there used to be numerous tanks, some very large ones spread over fifty to sixty acres. Flood water would be stored in those tanks and they provided enough water for domestic use and irrigating crops. As the desilting of the tanks had been neglected many had ceased to be useful. Furthermore, with the construction of levees on either side of the Kosi and other rivers, adequate water would not flow into the tanks. Thus the tanks ceased to be of much use.

In the Deccan, a large tract with undulating landscape and scanty rainfall, the farming community displayed great ingenuity in evolving a system of irrigation admirably suited to the region. In the micro-watersheds the best land would be at the bottom of the valley, moisture content and soil fertility decreasing with the escalation of the gradient. Rain water would be collected in a few strategically located small ponds in the higher reaches. The overflow from the ponds and the run off from the slopes would accumulate in a large tank at the bottom of the valley. Water in the ponds would be used up in the rainy season. When the ponds dried up there would still be enough water in the large tank for domestic purposes and irrigating a small area. In the past the ponds and tanks were maintained through community efforts. In course of time the maintenance of the water bodies came to be neglected resulting in perpetual droughts.

Restoring Ecological Balance

Obviously, it is a matter of the utmost urgency to arrest the damage done to the environment and restore ecological balance. The need of the hour is to draw up and implement a well designed programme of afforestation, soil and water conservation, integrated watershed development and rain water harvesting. Money is not the limiting factor. Adequate funds are available under the National Rural Employment Guarantee Scheme. The difficulty will lie in the effective execution of such a mammoth

programme. With the Indian administration having been rendered dysfunctional and the Panchayati Raj institutions being plagued by teething troubles, there is little hope of efficient implementation.

Bangalore's Woes

Bangalore, the famed Garden City of a bygone era is no longer the paradise it used to be located on a plateau about one thousand metres above sea level, with an average annual rainfall of about 35 inches spread over eight months from April to December, Bangalore used to have a mild climate except for a short period in March-April. The damage done to the eco-system had caused Bangalore's climate to change for the worse.

A matter of immediate concern is that Bangalore, like many other Indian cities, is facing an acute shortage of drinking water. With no river flowing by its side, before the establishment of water works for bringing the Kaveri water to the City, Bangalore was heavily dependent on the numerous lakes and tanks for its water supply. Kempe Gowda, the founder of Bangalore, is credited with having built a large number of lakes and tanks to supply water to the city. Over a period of time many of these water bodies fell into disuse. Many were encroached upon for locating habitations. The number of lakes which had shrunk to 379 in 1973 came down to 246 in 1996 and to 81 in 2002. In living memory the Games Village and the Kanteerva Stadium were built on land reclaimed by filling large lakes. If the water bodies had been preserved the city's water supply would have been in better shape.

In recent years the mad rush for drilling tube wells has led to the depletion of the scanty aquifers. In several instances the tube wells have gone dry forcing inhabitants of up market apartments to depend on water tankers for their daily requirement of water.

Apart from augmenting the supply of water from the Kaveri some other immediate steps are needed to tackle the difficult problem. Some of these are listed below.

Suggestions

The population of Bangalore is touching ten million. Effective steps should be taken to stop further expansion of the city.

Sinking of private tube wells should be prohibited. Ground water is a precious social asset. Just as a land owner has no rights in the minerals under his land, he should not have any rights in the ground water. His rights should be confined to the water in the surface soil. Only the State and Municipal Corporation should have the right to sink tube wells.

The State Government, the Municipal Corporation and the Lake Development Authority should act in concert to preserve the existing lakes and develop them. It is important to ensure that sewerage does not flow into the lakes. It will be necessary to launch a campaign enlisting public support and the active co-operation of bodies like the Bangalore Environment Trust.

The existing building by-laws should be amended to require all land owners to provide for rain water harvesting in new buildings. Even in the case of existing buildings, owners should be required to provide for rain water harvesting.

These measures will not provide a complete solution to the problem. However, if efficiently implemented, they will lead to a substantial improvement in the situation.

- P. S. Appu

Did you know?

'**Water and Culture**' was the guiding theme for World Water Day 2006 on 22 March under the leadership of UNESCO.

2005-2015 is the International Decade for Action 'Water for Life'

2005-2014 is the Decade of Education for Sustainable Development

The Stockholm Water Prize

The Stockholm Water Prize is a global award presented annually to an individual, organisation or institution for outstanding water-related activities. The activities can be within the fields of aid, awareness building and education, technology, management or science.

The Stockholm Water Prize was first presented in 1991 and includes a USD 150,000 award and a crystal sculpture. The Stockholm Water Prize Laureate is announced each March in connection with the UN World Water Day and honoured each August at a Royal Prize Ceremony and Banquet in the Stockholm City Hall during the World Water Week in Stockholm. Founders of the Stockholm Water Prize are Swedish and international companies in co-operation with the City of Stockholm.

Stockholm Water Prize Laureates have over the years represented many water-related activities, professions and scientific disciplines and have come from around the world. Any activity or actor which contributes broadly to the conservation and protection of the world's water resources, and to improved water conditions which contribute to the health of the planet's inhabitants and our ecosystems, is eligible to be nominated for the Stockholm Water Prize.

An international nominating committee appointed by the Royal Swedish Academy of Sciences is responsible to review the nominations and propose a candidate.

HM King Carl XVI Gustaf of Sweden is the Patron of the Stockholm Water Prize.

Indian Winners of The Prize

Professor Asit K. Biswas - 2006 **The Third World Center for Water Management** *for his outstanding and multi-faceted contributions to global water resource issues, including research, education and awareness, water management, human and international relations in both developed and developing countries.*

2005 Centre for Science and Environment (CSE) New Delhi, India under the directorship of **Ms. Sunita Narain** for a successful recovery of old and generation of new knowledge on water management, a community-based sustainable integrated resource management under gender equity, a courageous stand against undemocratic, top-down bureaucratic resource control, an efficient use of a free press, and an independent judiciary to meet these goals.

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