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SCARCITY OF WATER: Reduce, Reuse, Recycle and Rethink

by Ir. Elias bin Saidin,

Deputy Chairman, Water Resource Technical Division, IEM

“Water, water, everywhere nor any drop to drink “

- Ancient Mariner

THE world's freshwater resource amounts to 2.5% of the total amount of water on Earth. With almost all of this freshwater frozen in glaciers, permafrost and stored deep below ground, only 0.4% of the total amount of water on this Earth, in the form of surface and atmospheric water, is readily available for consumption. In Asia, 80% of the freshwater is used for agriculture while the balance is being used for industries and human consumption.

The world's population is increasing exponentially from an estimated one billion in the 1800's, to an estimated seven billion in October 2011 and has been projected to be as high as nine billion by 2050. However, the total amount of freshwater resource available in the world has remained unchanged. This means the amount of water available for mankind will be placed under tremendous pressure. Urban migration of the population has further aggravated the capacity of water supply authorities in towns and cities to meet the increasing demand for freshwater.

Presently, greater awareness on the scarcity of water resources has led to strong campaigns and practices towards a more sustainable utilisation of water. Within the home, fixtures and appliances are being manufactured and installed to restrict flowrates and reduce the domestic consumption of water.

There has also been a rethinking, or a paradigm shift, in seeking alternative sources of water apart from solely relying on treated piped-water by the local municipality. The age-old practice of harvesting rainwater is currently making a comeback in many developed cities. On 23 May 2011, a bylaw in the Malaysian UBBL was approved which makes it mandatory for the installation of RWH systems in semi-Ds, bungalows and government buildings.

In the MUDA irrigation schemes in Kedah, irrigation water for paddy fields is being successfully recycled back into the paddy fields. In addition, responsible manufacturers are beginning to discover ingenious ways to reuse their processed water, including cascading its use at each stage of the production as well as reusing water for cleaning and gardening before discharging it safely into the watercourses.

The former UN General Secretary, Kofi Annan, in 2001 was quoted as saying, *"Fierce competition for fresh water may well become a source of conflict and wars in the future"*. Engineers in their daily practices shall now take the lead in the global challenge to conserve water and maintain the sustainability of water resources. ■

THE INSTITUTION OF ENGINEERS, MALAYSIA

Bangunan Ingenieur, Lots 60 & 62, Jalan 52/4, P.O.Box 223, (Jalan Sultan),

46720 Petaling Jaya, Selangor Darul Ehsan.

Tel: 603-7968 4001/4002 Fax: 603-7957 7678

E-mail: sec@iem.org.my Homepage: http://www.MylIEM.org.my