

**Address of Welcome
by
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President
Pakistan Engineering Congress
on
World Water Day 16th April, 2011
at
“Mashhadi Hall” of Pakistan Engineering Congress**

Honourable

Executive Council Members

Fellow Engineers

Ladies & Gentlemen!

It is the importance of water in the life of individuals and nations that the United Nations Conference on Environment Development (UNCED) held in Rio de Janeiro in 1992 declared 22nd March as “World Water Day”. Since then, it is being celebrated the world over. At the occasion of World Water Day, experts on “Water Resources” speak on the theme and related issues specified for that particular year.

The theme for this year is:

“Water for Cities – Urban Challenges”

Ladies & Gentlemen!

The Allah Tabarak wa Ta’ala, Himself through numerous verses in the Holy Quran signifies about the crucial role played by “Water” in the socio-economic life of mankind.

“And He is Who created the Heavens and the Earth in six days and His Throne was on water” (Sura Hud).

“He showeth you the lightening for a fear and for a Honour sendeth down water from the sky and thereby quencheth the earth after death” (Sura Rome).

“And have sent down from the raining clouds abounded water thereby to produce gram and gardens of thick foliage” (Sura An Naba i.e. Tidings).

“It is He Who sends down (rain) drinking water and from which (grow) trees among which you graze your cattle” (S. 16 Al-Nahl i.e. The Ant).

“He grows thereby crops, olives, palms, grapes and every kind of fruit for you; surely in this is a sign for people who ponder” (S. 16 Al-Nahl i.e. The Ant).

“And if you ask them: “Who sends down (rain) water from the heaven, and gives life therewith to the earth after its death?” They will surely say: “Allah”. Say: “All the praises and thanks are to Allah;” but most of them do not understand. (S. 29 Ankaboot i.e. The Spider).

Ladies and Gentlemen!

As we all know, water is one of the most precious commodity for human sustenance. Flowing rivers and gushing springs are signs of life and prosperity all around the globe. Most of the civilizations prospered around the banks of big rivers. We also know that only 2.5% of all available water can be used by humans or animals. All the rest is either brackish or inaccessible. With rapid rise in world population, importance of safe and fresh water resources has increased manifold. Changes in climate pattern and accelerated rate of glacial melt are making the availability of fresh water scarce and insecure day by day. Should this continue for few more decades without human intervention, wars of future would stem from our rivers and springs?

Population growth in urban centers is far higher than rural areas. Major cause of this rise is population migration from rural to urban areas for economic prosperity and education. The number of mega cities around the world supporting a population of 1-million or more has increased from 26 in 1990 to over 200 in 2011. This has added pressure of water supply and waste water disposal agencies in cities to 2-4 times their original plans. Despite all out efforts to supply safe drinking water by WASA and other sister organizations, number of patients suffering from water related diseases is increasing. Demand for safe water supplies is multiplied during summer than in winter. There is a dire need that governments provide the basic health, education and economic facilities in the rural areas to stop population migration and reduce pressure from the already compressed water supply and sanitation agencies.

Let us delve in the matter deeper and in a bit of details.

The total population of the world is 6898.5 million out of which 2857.8 million people (a staggering 41-42 % live in 4 – countries alone.)

<u>Sr. No</u>	<u>Country</u>	<u>Population (in million)</u>	<u>Percentage of world population</u>
1	China	1342.210	19.5%
2	India	1193.800	17.3%
3	Pakistan	171.782	2.5%
4	Bangladesh	150.012	2.2%
		<u>2857.804</u>	

The population of our country Pakistan is 172 million and is increasing at a rate 2.77% per annum, the fastest in the world. It has been visualized by experts that by 2030, it will swell to an un-manageable level of 237 millions. Obviously, it would need bringing more and more land under cultivation, industrial expansion, and mass migration of rural population to towns, cities and mega cities. Karachi alone will be surpassing 20 – million's mark soon and will be amongst the top mega cities of the world. This will need huge and fast track steps/ plans for storage, conservation and above all to substantially maximize the availability of water as well as plugging wasteful use of water.

Construction of Large Water Reservoirs - Need for Storages:

Large Dams serve multi-purposes. They store priceless bounty of water that is becoming rare with the passage of time due to surging populations, expanding human settlements, increasing agriculture. They also provide cheap supply of electricity and above all managing fall-out from floods. Resultantly, Countries create Water Reservoirs in increasing numbers as would be seen from the following Table.

<u>Sr. No</u>	<u>Country</u>	<u>Number of Dams</u>
1	China	22,000
2	U.S.A	6,675
3	India	4,291
4	Japan	2,675
5	Spain	1,200
6	Canada	793
7	France	569
8	South Africa	539
9	Mexico	540
10	Italy	524
11	U.K.	517
12	Argentina	101
13	Brazil	594
14	Zimbabwe	213
15	Australia	486
16	New Zealand	86
17	Turkey	500
18	Pakistan	71

It is reflective of utter mindlessness bordering on insanity that we have failed to construct any dam worth mentioning in the last 30 years particularly when almost 35-MAF of Water flows into the Sea un-tapped and un-utilized every year and when the country is endowed with innumerable locations for building large reservoirs as would be seen from the following Table.

HYDROPOWER POTENTIAL

Sr. No.	Projects	River	Location	Capacity (MW)	Storage (MAF)	Estimated Cost (US\$ Million)
1	Diamer Basha	Indus	GB	4500	8.1	11178
2	Kurram Tangi	Kurram	FATA / KPK	84	1.2	700
3	Golen Gol	Chitral	KPK	106	RoR	130
4	Tarbela 4th Ext.	Indus	KPK	1350	-	826
5	Dasu	Indus	KPK	4320	1.15	6000
6	Kohala	Jhelum	AJK	1100	RoR	2212
7	Bunji	Indus	GB	7100	RoR	6800
8	Others (Bara, Tank Zam Matiltan & pales Valley etc.)		KPK / GB / AJK	1500	RoR	
9	Munda	Swat	FATA / KPK	740	1.3	1401
10	Patan, Shyok, Akhori	Indus	KPK / Punjab	3920	12.0	
Total				~ 24,720	23.75	

RoR – Run of River

FALKEN MARK Water Scarcity Indicators

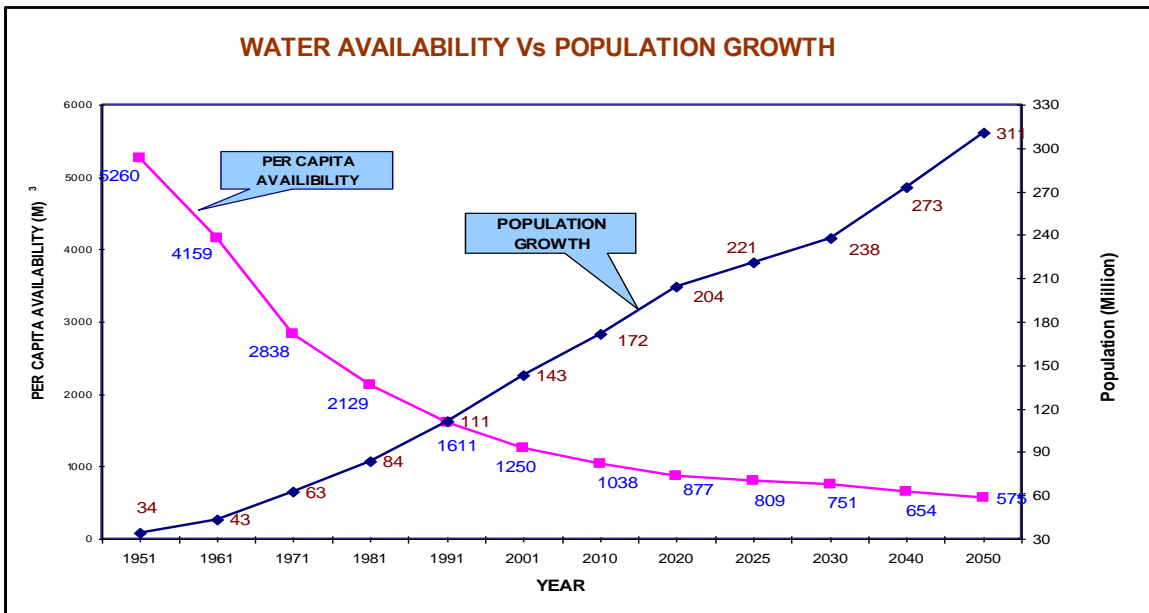
To judge the per capita water availability, the indicators are as under:

- > 1700 M³/Capita Water Scarcity Rare
- < 1700 M³/Capita Country Faces Seasonal or Regular Water-Stressed Conditions
- = 1000 M³/Capita Thresh-Hold Value for Water Stress

- < 1000 M³/Capita Water Shortages Hamper the Health and Well Being of the Human Beings
- > 500 M³/Capita Shortages Are Severe Constraints to Human Life

In keeping with these bench marks, most of the countries are faced with water storages.

Pakistan enjoyed per capita water availability of 5260 cubic meters in 1951 when population was 34 million. It stands reduced to 1038 cubic meters and fast nearing water scarce country category.



The following report field by Razi Syed should be an eye-opener:

“A report by the Washington DC based Woodrow Wilson Center described Pakistan’s water shortage as “deeply troubling”. It quotes South Asia scholar Anatol Lieven as saying that water shortages pose the greatest future threat to the viability of Pakistan as a state and a society. Most independent analysts including experts said all Pakistanis agree that Pakistan is facing a severe water shortage and that some form of water management should be implemented soon.

The underground water level went down from about 70-100 feet to up to 1000 feet and termed it worsen situation. The main crops of the country

required 94 million acres feet (MAF) water but usually 76 MAF water available in the country”.

Goals and Objectives

The National Drinking Water Policy has laid down extremely pious goals and objectives.

- i) Provide access to safe and sustainable drinking water supply to the people by 2025.
- ii) Ensure protection and conservation of water resources.
- iii) Promote measures for treatment and safety of drinking water.
- iv) Increase public awareness about a water safety, safe hygiene Practices and Water Conservation especially in the Women, Children who are the major users of water.
- v) Promote Public – Private partnership for enhancing access to safe drinking of Water supply system etc.
- vi) To protect and conserve surface and groundwater resources.
- vii) At least 45 to 120 liter per day of water is available in rural and urban population respectively.

The objectives are very pleasing to learn. However, the actual ground realities are extremely disturbing.

- 80 million people have no access to safe drinking water
- 70% diseases are Water borne involving financial loss 112 billion per year (Rs. 300 million a day).
- Costs associated with diseases alone cause loss of Rs. 55 – 80 billion.
- Only 65% of the people at the maximum have access to safe drinking water.
- Water samples of 21 towns/cities have been found contaminated which is cause for serious concern.

- In a suit filed in the Lahore High Court, it has been alleged that 253 tube wells out of a total of 392 were found supplying arsenic contaminated water which is causing hepatitis and other diseases.
- 1.5 million “Tharis” (people of Thar Desert) face chronic shortage of water due to scant rainfall (harvested rain water is not of much relief) and have to move with their cattle / belongings from place to place in search of greener pastures. This situation is detrimental for the “livestock” industry at Thar and the consequent financial losses.
- In the mega city of Karachi, the supply of water is 650 mgd which is 150 mgd less than the demand. Additional 100 mgd water is needed every year to cater to the rising population of the city.
- In Sindh purification plants (19 in Hyderabad, 16 in Latifabad and 11 in Qasimabad etc.) installed at the cost of millions of rupees are lying un-functional. People are consuming contaminated water.

Recommendations

1. For ensuring water-supply to urban areas 100% metering is un-avoidable. It should at least be accomplished in towns, cities and big cities.
2. Revision of Water – Tariff to cover cost of capital works (including 100% metering) and operational cost.
3. Construction of Mega – Dams on Fast Track.
4. Construction of Kalabagh Dam a purely technically feasible option lying in the back burner due to appeasement policy
5. Construction of small Dams all over the country to ensure safe water supply to rural population.
6. Installation of Household Water Treatment (HWT’S) appliances
7. 300,000 lac meters need to be installed in Punjab alone to boost the revenues and provide funding for capital works
8. Hudiyara drain flowing from India contains a lot of polluted water from rivers and streams. It needs to be stopped by Indian Government.

9. Glaciers melt will result in extra quantity of water in the short term with possibility of flooding and less in long-term. Needs proper water resources planning and management.
10. New water - supply pipes need to be installed to contain water borne diseases. This would need revision of Water Tariff. People will be ready to pay more if safe/ assured water supply is made available to them.
11. More than 40% of the population in Karachi i.e. 32-million is residing in Katchi Abadies. Moreover, only 25 % of registered 10,5,0000 consumers pay the bills. These freebooters need to be brought under registered consumers net and made to pay water charges.

Ladies and Gentlemen !

I would like to conclude by once again thanking you all for being with us

May God bless you !

Pakistan Zindabad