

Southwest Asia Regional Workshop on Droughts

7-8 October 2004, Colombo, Sri Lanka

Welcome and Address

by

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Mr. Chairman, Distinguished Delegates, Ladies & Gentlemen

It is a great privilege and honour for me to be here with you at the Southwest Asia Regional Workshop on Droughts. I feel extremely delighted to visit Sri Lanka which on account of its fragrant spices, priceless gems and pearls, legendary beauty, sublime culture and friendly people has truly earned for itself titles like “Treasure Island” and “Isle of Delight”. Its beaches of paradise, heritage of glory, sublime scenery and wild wealth have always attracted tourists from all over the world providing them a perfect escape. I am sure that the distinguished delegates, researchers and scientists attending this workshop would fully enjoy the island’s beauty and the unique Sri Lankan hospitality – a beautiful blend of the East and the West.

Mr. Chairman !

Drought is believed to be the most dangerous environmental hazard because of three reasons. Firstly, it is a “creeping hazard”, so-called because it develops slowly and has a prolonged existence, sometimes over a period of many years. Secondly, it is not constrained to a particular tectonic or topographic setting and its impact can extend over very large regions. Thirdly, the impact of drought varies greatly between developed and developing / lesser-developed countries. Famine is the most serious outcome of drought in the less developed countries.

Dear Delegates !

It is very difficult to define drought because different definitions abound depending on the type of drought. Nevertheless, it is important that those involved in drought preparedness and mitigation activities share a common understanding of the ways in which drought may be defined.

A generally accepted definition of drought is a temporary reduction in water or moisture availability significantly below the normal or expected amount for a

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specific period. Depending upon its characteristics, it is classified into the following types:-

- ***Meteorological Drought*** is a measure of the departure of precipitation from the normal and occurs when precipitation is below 40% of the normal in a large area for an extended period of time.
- ***Agricultural Drought*** refers to a situation when the amount of moisture in the soil no longer meets the needs of a particular crop. It occurs when soil moisture and rainfall are inadequate to support healthy crop growth to maturity causing extreme crop stress and wilt.
- ***Hydrological Drought*** refers to a situation when surface and sub-surface water supplies are below the water requirements of a crop. It occurs when there is sustained deficit in surface runoff below normal conditions, leading to depletion of surface water level. Thus prolonged meteorological drought often results in hydrological drought.
- ***Socio-economic Drought*** refers to a situation that occurs when physical water shortage begins to affect people.

Ladies & Gentlemen!

Pakistan is an arid to semi-arid country, with a humid belt along the sub-mountainous region of the Northwestern Himalayas in the North and a large hyper-arid area in the Southwestern Balochistan province. Precipitation ranges as low as 50 mm in Balochistan to as high as 1800 mm in the North.

History's worst drought conditions prevailed in most parts of the Balochistan province, Thar and Cholistan deserts of Pakistan during winter of 1999 extending to early summer 2000 because of largely below normal rainfall during the last few years. Surface and ground water reservoirs were depleted which resulted into destruction of vegetation and orchards. Animals and human beings suffered from severe food shortage. Large scale migration took place in search of food and water putting over due pressure on land and water resources of the neighbouring areas. Pakistan Meteorological Department (PMD) continuously monitored the changes in drought situation and drought advisories were simultaneously issued for decision makers.

This drought was initiated because the El-Nino 1997-98 and the subsequent La-Nina since mid 1998 seriously affected Pakistan's weather cycle like other parts of

the world. Light to moderate drought impact had started appearing since 1997 summer which persisted with variable intensity till early 1999. The situation was further aggravated due to well below normal rains in Balochistan, Southern parts of Sindh and rainfed plains of the Punjab and NWFP during 2000 summer and winter. In order to tackle this severe drought crisis, PMD immediately responded by initiating ***Cloud Seeding Experiments in the Worst Affected Areas***, aiming to develop the technology indigenously and to determine the feasibility of cloud seeding so as to make it a basis for regular programmes in the future. During the first part covering seeding of warm clouds, 48 air borne operations with solid and liquid dispensers were conducted from mid-June to mid-September 2000, out of which 30 yielded significant success. As the outlook for winter 2000 rains was some what bleak, PMD, therefore, conducted Cold Cloud Seeding Experiments from mid-December 2000 to mid-March 2001 in areas where the conditions were conducive but these did not bring appreciable relief in the worst affected areas.

Ladies & Gentlemen !

According to the Social Policy and Development Centre, Pakistan lost Rs.21.423 billion in the agriculture sector due to drought in the fiscal Year 2000-2001. Had the drought not occurred, GDP would have increased by 4.6% instead of 2.6% and the agriculture sector would have grown by 4% instead of 2.4% (Rs.185.9 billion instead of Rs.177.03 billion). For those who are interested in statistics, separate information regarding crop losses, projection of immediate effects of the drought, short term immediate requirements, inputs by public and private sectors and financial assistance received by Balochistan and Sindh provinces can be supplied.

Consequently, a project document titled ***“National Centre for Drought / Environment Monitoring and Early Warning in Pakistan”*** was prepared which has very recently been approved by the government at a total cost of Rs.164.844 million. Under this project, besides a National Centre and its Research Units at Islamabad, 04 operational centers – one in each province would be established.

This centre would

- i) Serve as a hub for the collection, consolidation and analysis of drought related data from all the possible sources in the country.
- ii) Prepare and issue weekly drought monitors and moisture stresses in different regions of the country particularly in the drought vulnerable areas.

- iii) Also be responsible for extending the rainfall measuring network in the country. The existing network of about 100 stations would be extended to 500 stations or even more. Some agencies needing rainfall data would be involved to operate the stations on voluntary basis.
- iv) Be responsible for advising the Government on drought related matters including drought declarations.

In addition to the National Centre for drought as mentioned above and keeping in view the prolonged drought that prevailed In the country, the Government of Pakistan with the assistance of the Asian Development Bank and World Bank launched the *Drought Emergency Relief Assistance Programme* to mitigate its effects. The total outlay of the programme was to the tune of US\$ 379.59 million including US\$ 200 million for drought-induced fuel, oil and other imports like fertilizers, seeds, pesticides, farm machinery/equipment and veterinary medicines etc. The remaining funds of US\$ 179.59 millions were provided for execution of short-term development schemes in drought-affected districts in all the four provinces. The objectives of the programme were to revive the agrarian economy and promote sustainable use of water resources for improving productive capacity and livelihood and income of the drought affected people. Consequently 2,210 projects costing Rs. 9.26 billion for drinking water, rehabilitation and management of irrigation water, roads, agriculture and livestock development, health care and community support were designed and implemented. More than 70% of the physical work has been completed and the rest is on-going.

Mr. Chairman !

Here I would also like to inform you all, that on account of below normal rains during 2003 and largely below normal rainfall during monsoon 2004, Pakistan Meteorological Department has issued an advisory regarding emerging drought conditions in the country on 27th July 2004 with an update on 30th August 2004 stating that the country has entered into another drought phase. This would facilitate the planners and water management authorities in planning judicious use of available water resources. An analysis of statistical data made available to Planning Commission by Indus River System Authority (IRSA) shows that water supply remained 12% below normal in the Kharif season upto September 30, 2004 (59.116 MAF against system average of 67.111 MAF) as compared to 1.7 percent below normal in the last year. The situation is likely to get much worse in the

coming Rabi season when the canal withdrawals are expected to be short by around 56 percent as compared to 13 percent last year. It may surpass the historic shortage of 49% which happened in 2001. The total canal withdrawals are expected to be 17.16 MAF against system average of 36.387 MAF in the coming Rabi season.

The availability of water is once again emerging as a serious constraint. There can be three kinds of adverse effects, failure of agricultural crops, urban water shortage and environmental hazards.

Since this is a crisis situation, we can-not be content with recommending only long term measures such as increasing storage capacity, making greater investments in the irrigation infrastructure for efficiency improvement through rehabilitation, remodeling and lining of water-courses and minor canals, rational pricing of water, laser leveling and new cultural practices etc. A few short term measures (contingent plan) may have to be taken instantly. Short term measures are listed below.

- i) Federal Govt. should continue issuing advisories to the provinces about the likely water availability well ahead of time so that they can plan their irrigation accordingly.
- ii) The operation of the storage dams should be adjusted and provinces should stop withdrawal of water from canals to save about 4 MAF of water for use in the Rabi season.
- iii) Provinces should undertake rotation of canals and shut fresh water canals so that water can be supplied through tube-wells in fresh water areas.

- iv) Give three to four watering to the wheat crop at sowing, growing and maturing instead of 4 to 5 watering for optimum utilization of water. Agricultural experts will give their professional advice.
- v) Federal and provincial governments may consider a reduction (30% to 50%) in electricity tariff for tube-wells for agricultural purposes and a one time subsidy for installation of tube-wells in fresh water areas (Govt. of Punjab had paid subsidy of Rs. 178 million in 2002 and Rs. 348 million in 2003). The total tube-well bill was around Rs. 2 billion.
- vi) The use of rain-gun for raising wheat crop may also be considered as it will save about 40% of water. This will involve co-operative farming as the area irrigated by one rain gun is about 640 acres whereas the land holdings in general are very small.

Drought has devastating consequences for farmers. For the very poor, who often live from harvest to harvest, it can mean loss of their livelihood. Surface water quality deteriorates with the increased concentration of effluents since waste waters are discharged into fresh water lines without any treatment. Lowered fresh water supplies in delta will intensify intrusion of brackish water into aquifers, further deteriorating quality of under-ground water. In some situations drought can also serve as a catalyst for positive change such as:

- i) In upland, land sliding and water erosion may significantly reduce.
- ii) In water-logged areas, decreased irrigation water supplies would lower the water-table reducing affected lands. However in areas of high salinity, inadequate irrigation would result in salt accumulation.
- iii) The drought would compel farmers to adopt water-efficient practices.

According to UNDP report on Pakistan National Disaster Management Programme, there is no comprehensive, integrated drought management policy at the national level, and the country also lacks a proper system for drought

prevention and preparedness. The existing institutional structures responsible for drought and disaster management come into action only in case of emergencies, whereas the situation strongly advocates the need for a disaster management structure, a comprehensive preparedness and mitigation strategy, as well as a mitigation policy in order to better manage and coordinate activities of the various line ministries and departments and civil society.

There is also a need to carry out research for the causes of widespread destructions, that hazards bring every year, and how can we minimize losses. There is also a need to train the staff who are working in these organizations. Universities and colleges in Pakistan should start drought management courses.

The participants from Pakistan include agricultural and meteorological experts, policy and decision makers and practitioners to share experience and knowledge with the aim of defining actions and follow-up activities which are essential not only to improve drought management but also to reformulate the policies and long term strategies which are based on the outcomes of short term action plan for drought relief, the status of drought preparedness and regional cooperation to combat droughts.

I am confident that during the course of proceedings of this workshop, participating delegates and scientists would be engaged in fruitful deliberations on the theme of the workshop. I am also thankful to all of you for giving a patient ear to me. In the end, I wish you all a pleasant and enjoyable stay in Sri Lanka.

Thank you.