

Address of Mrs. Radha Singh, Secretary, Department of Agriculture & Cooperation, Government of India, at the Inauguration of "International Workshop on Drought Assessment and Mitigation in South - West Asia"

7 - 8 October, 2004

**Venue : Hotel Taj Samudra
Colombo**

Mr. Gerard O'Donoghue, DDG, International Water Management Institute;
Prof. Mohsini, Kabul University, Afghanistan;
Mr. Hafeez Qaizer, Chief, Planning Division, Islamabad;
Mr. A.K. Pandey, Principal Secretary, Government of Rajasthan, India;
Dr. Vladimir Smakhtin,
Member of the delegations from India, Pakistan and Afghanistan,
Researchers from IWMI and other International Organizations,
Members of media, ladies and gentlemen:

It gives me great pleasure to be here with you and share some thoughts on drought assessment and its mitigation in the context of South West Asia. In these regions, any area can be affected by drought as the average annual precipitation in these parts of the region are generally less than 750 mm. with more than 200 million people affected in varying degrees by drought once every three years. The Indian sub-continent is predominantly characterized by a tropical monsoon climate where climate regimes are governed by varying rainfall, variability being determined in time and space causing drought like conditions leading to water stress, lowering of water tables, depletion of reservoirs, social and economic stress and generally extreme adverse effects on dry lands, rainfed and irrigated agriculture leading to fall in agriculture production and productivity. In arid and semi-arid regions rainfall affects the livelihood system of farmers. Due to the harsh terrain and successive years of deficit rainfall, farm households in these have evolved coping strategies to deal with uncertainties arising from irregular seasonal rainfall and drought induced calamities. The challenge before us is, therefore, to stabilize, expand and fortify these adapted responses through greater research on crops and farming systems suitable for such fragile and vulnerable eco-zones. The National Commission on Agriculture has categorized drought in three broad segments - meteorological, hydrological and agricultural. While meteorological drought refers to significant decrease (more than 25%) of rainfall over a year, hydrological drought results in depletion of surface water, drying up of reservoirs, lakes, streams, rivers with fall in groundwater level. The occurrence of agricultural drought is when soil moisture and rainfall are inadequate during the sowing season to support crop growth up to maturity. The impact of drought obviously is more apparent in rainfed areas wherein production and productivity of land and water are severely affected. In these unfavorable areas, research needs to become more locally specific with greater participation and interaction with farmers and the rural community. Products, produces and technologies needs to be adapted which are land and water conserving and alongside capable of generating a secondary line of income - such as animal husbandry, dairying and fodder production.

Diversification of cropping systems with reliance on secondary and tertiary production systems is an obvious pathway. Development of grasslands, creation of fodder depots and fodder banks are initiatives that need to be vigorously pursued, in these areas - it being made clear that crop dependent agriculture systems would invariably lead to stress and destitute due to recurring droughts.

Over time, farming communities have devised ways of conserving rain water, and *in situ* moisture. Tankas, Khadins, Kuntas and Ahar Pynes to name a few are water conserving systems that have proved effective over time and could go a long way in building resilience and bio-mass for livestock production systems.

The history of drought management in India in the last 130 years or so is the history of progressively more proactive relief by Government. This trend which started in the late 19th and 20th century has accelerated manifold. This proactive, mitigative role of the State, while easing distress has tended to make the drought affected population more and more reliant on externalities for prevention and mitigation. It is clear that we need to step back and see if it would be more useful to enhance the capabilities of the communities in coping with frequent risk rather than early government intervention. Considering that large tracts of South West region receive low to medium rainfall and are often susceptible to significant deficit rainfall, perhaps we need to re-draw the relief paradigm and generate an environment that would enable the inhabitants in these regions to enhance their adaptive capabilities. A very large and obvious research gap is the absence of holistic studies pertaining to the phenomenon of drought.

Engineers, hydrologists, agricultural scientists, economists and administrators have all made valuable studies on different facets of the problem. But the insights obtained are highly segmented, arguably on account of an absence of multi-disciplinary talent in the agricultural and social sciences universities, and the prevalent engineering and agricultural dichotomy, in most parts of the world.

India has, over the years developed a fairly effective and elaborate management system of institutionalized drought monitoring system, declaration and mitigation at different levels. The India Meteorological Department carries out drought monitoring and the forecasting function. It has over time evolved complex parametric models to forecast the probable arrival and intensity of the monsoon on broad regional scales. To internalize this mechanism there is an Inter-Ministerial Crop Weather Watch Group within the Ministry of Agriculture, which for India is the nodal agency in all matters pertaining to drought. Whereas drought declaration is the primary responsibility of the concerned State, post-declaration the Central Government assists and facilitates finance and institutional assistance and processes. Financing Relief Expenditure is in accordance with the awards of the Finance Commission appointed every five years. Under the award, two Funds have been set up - constituting the Calamity Relief Fund (CRF) and Natural Calamity Contingency Fund (NCCF). The CRF has been in operation for each State with an amount prescribed by the Commission and is maintained outside the government account, receiving contributions from Central and State Government in the ratio of 3 : 1 in two half yearly installments. The declaration of drought sets into motion several

response mechanisms at various levels of management, including constitution of several Special Task Force, High Level Committee and Control Rooms. In almost all cases, the drought situation is moderated by commencement of employment generation through relief works, cattle conservation camps, medical and health arrangements and creation of new water sources. For a long term solution and mitigation of drought relief problems, Government of India has put in place several innovative and people centric programmes like the National Watershed Development Programme, Drought Prone Area Programme, Desert Development Programme and very recently the Dryland Farming Programme. I believe the presentations from Indian research and development organizations during the course of the Workshop will provide an opportunity to discuss these efforts in greater detail. Very briefly, evaluation studies done on the effectiveness of these measures for drought proofing indicate that the implementation of watershed development projects under the Desert Development Programme has increased the overall productivity of land and that of the water table, with a positive impact on overall economic development within the project areas. Green vegetation cover has also improved in the desert areas.

Watershed development in many areas of the country is the key for improvement of productivity of rainfed areas and their ecological restoration. Technologies selected for watershed development are based on the engineered land use patterns through adaptive technologies for arable and non-arable land and drainage line treatment. The ridge to valley concept are the accompanying requirement for the success of watershed programmes. The Drought Prone Area Programme is the earliest area development programme started by the Central Government. Over this period of time guidelines have evolved for watershed development, providing uniform strategy in the development of all drought prone areas covering around 627 blocks in 96 districts of 13 States.

My assessment is that the broad objectives of the Workshop include: - identification of the existing gaps in research and specific needs of individual countries in the region for drought management. Both these aspects would perhaps be covered in the presentation of the Regional Drought Research Project. Issues of relevance therein would be: -

- (i) A more reliable system of weather forecast, particularly for the month of July (the main sowing season for a large chunk of Indian rainfed agriculture);
- (ii) reliable farmer-specific water budget in highly vulnerable areas, i.e. village level water holding - management plans during periods of drought;
- (iii) district specific standard operating procedures for contingent crop planning;
- (iv) Preparation of multi-disciplinary Manuals (localized) to deal with all aspects of drought including peace time initiatives;
- (v) 'Quick' concurrent studies of the impact of relief initiatives;

- (vi) Comprehensive documentation of acute episodes of drought (most of the existing documentations concentrate on detailed rainfall statistics and the nitty-gritty of 'relief') laying greater emphasis on the impact of the problem on various aspects of life viz. the economy, social relationships, animal health, local customs and so on;
- (vii) studies on continuing basis of sectors affected by drought to see how these 'sectors' operate in normal times (parameters may differ from normal times of sowing and harvesting to, income streams, fodder prices and household expenditure on health-care and education);
- (viii) Migrations from drought prone areas of Southern and Western parts of the country. Much of the migration is a well regulated annual feature which has, over the years, endowed the communities with resilience to deal with adversity. At the same time, these areas also experience sporadic distress, which is migration related - accentuated by loss of employment. There is an imperative for documenting such "good" and "not so good" migrations; and
- (ix) lastly, area specific long-term strategies - not in broad terms of "recharging ground water through rain water harvesting" and "watershed approach" but in the form of a step-by-step blue print approach for specific works and initiatives in other words "AREA SPECIFIC SHELF OF PREVENTIVE ACTIVITIES".

I would like to end by mentioning some points on the potential way forward for drought mitigation in the region:-

- (i) Critical overall impact assessment of long-term initiatives to see whether the methodologies adopted are adequate and sound;
- (ii) Concrete, quantifiable and verifiable milestones for drought mitigation on an area-wise system approach; and
- (iii) a comprehensive identification of areas where "drought moderation with constant preparedness for recurrent aberrations" tend to occur within the South West Asia region.

The International Water Management Institute has made notable efforts in taking up the Regional Project on Drought Assessment and Mitigation in South West Asia. I am happy that stakeholders from India, Pakistan and Afghanistan have joined hands to share information and experiences pertaining to monitoring, assessment and management of the drought problem in the region. Besides generating impact studies of drought at family - community level, the project has also been able to develop a remote sensing based Regional Drought Monitoring System which would enable extremely useful data to be disseminated as forewarning and real-time drought management.

On behalf of the Government of India I would like to assure you that we will be more than willing to share our expertise, information and experiences to effectively tackle the problem in all countries including South West Asia. Dr. Vladimir Smakhtin and Mr. Bharat Sharma of IWMI need to be congratulated for their pioneering efforts in implementing the research project, developing regional network, sensitizing stakeholders and putting up an interesting agenda for the Workshop.