Drought Working Group Report

Co-chairs: Dr. Ailikun (China), Dr. Azzaya (Mongolia),
Rapporteur: Prof. Y. Krishna Murthy (India)

East Asia capacity building workshop

26-28 Sep, 2006, Bangkok

In drought group, there are 22 participants from 13 countries.

The discussion of drought group is mainly focus on the following issues:

1, the current situations of drought monitoring and researching by using satellite products in Asian countries

2, the gaps amongst data producer, data user and policy-decision maker, on the using of satellite products into drought monitoring and studying

3, capacity buildings in Asia

General Agreement of Drought Group

Types of Drought

- Agricultural
- Meteorological
- Hydrological
- etc

To understand the drought in different countries well, standardization of definition of drought is necessary in context of meteorological, agricultural and hydrological drought.

Main Conclusions from Drought Group

1. The meteorological department/agencies in the respective countries are responsible for the announcement of drought conditions in given regions. Drought information is released weekly in some countries.
2. Today, the satellite based information on precipitation and soil moisture is mainly being used on experimental basis. Here, integration of in-situ measurements (automatic) is needed.
3. However, in some regions the NDVI based vegetation monitoring and deriving the impacts of precipitation is used as a methods for advisory for the local decision makers.

Main Conclusions from Drought Group

4. Even in irrigated areas sometimes drought occurs because of improper irrigation scheduling. Optimized irrigation scheduling requires proper understanding of crop water requirement based on the type of crop and stage of growth using remote sensing and meteorological data. Furthermore, remote sensing provides operational methods for crop identification and area delineation .

5. To understand the variability of the terrain in different countries, in-situ measurements (automatic) integrated with spatial data is also necessary.

Conclusions: Preparation for Drought Mitigation

a) The main goal of drought mitigation is planning for conservation of soil and water.Watershed planning is a globally accepted method for drought mitigation.

b) Watershed developmental planning, monitoring and evaluation of program implementation needs to be taken up concurrently .

c) Space based remote sensing is useful, for mapping the existing natural resources like soil, ground water potential, slope, land capability and land use, which are essential for watershed planning and implementation.

d) Space based imaging and in-situ measurements needs to be integrated.

Conclusions: Preparation for Drought Mitigation

e) Remote sensing and SATCOM methods are useful, and are being used operationally in different countries.

f) DEMS generated by space based remote sensing are very useful for soil and water conservation which is primary goal of watershed management programs specifically in drought prone areas.

g) The experiences gained to be documented and circulated amongst member countries.

h) Urgent need for capacity building by organizing interactive workshops, undertaking pilot projects in member countries involving both space and user organizations.

Drought Assessment and Capacity Building

parameters	Data source	Capacity building status
NDVI	Optical RS data	Sharing of experiences with member countries
Moisture stress index(MSI)	Optical RS data (NIR, SWIR)	Sharing of experiences with member countries
Soil moisture index(SMI)	Optical RS data	Sharing of experiences with member countries
Soil moisture estimation	microwave	a topic for research and development.
Snow cover estimation	Optical RS data	Sharing of experiences with member countries
relative evapotranspiration	Optical RS and meteorological data	experts needs to be invited for training and identifying pilot projects for validations in respective regions.

Recommendations on Capacity Building

1. The state of art tools and techniques are not available operationally in most of the developing countries for inferring drought conditions. Need for sharing the successful experiences.
2. Needs to document experiences and methods in using RS data in inferring agricultural drought, training on this aspects either by interactions, e-learning etc.
3. Successful programs in the region on drought management needs to be documented and circulated, highlighting the gaps and need for improving the tools and methods .These gap areas are to be taken up as collaborative research projects as part of capacity building.

Recommendations: Capacity Building at Different Levels

a) Awareness program for the policy-decision makers.

b) Interactive workshops amongst user organizations and space agencies.

c) Identify priority areas and take up pilot projects in respective regions.

d) Technology promotions in the respective regions on new developments.

General statement

Technology development in space segment is moving rapidly, however technology assimilation in the ground system needs certain lead time .
Hence continuous capacity building at various level is essential.

THANK YOU!