

# **Thematic Training for Drought Monitoring and Early Warning**

## **Training Programme & Outline**

05-09 February, 2018

Nay Pyi Taw, Myanmar



**National Remote Sensing Centre**  
**Indian Space Research Organisation**  
*ISO 9001:2015*

## Background

Countries in Southeast Asia such as Myanmar continues to experience frequent drought events. These disasters have led to severe economic and livelihood loss, which in turn greatly influences food insecurity. It is of high importance to understand and continuously monitor these hazards to devise mitigation and adaptation plans. Geographic information systems (GIS) combined with the powers of Remote Sensing (RS) has proved to be a very useful tool for the whole drought risk management workflow, starting from the monitoring to mitigation and response.

ESCAP is providing technical support to the Government of Myanmar as part of its capacity building initiative under the Regional Drought Mechanism to build the capacity of government stakeholders to understand the use of GIS technology and earth observation data for drought monitoring. A number of tools are being customized to support evidence-based decision making in Myanmar, including Drought Analysis Software, which is a drought monitoring system developed by the National Remote Sensing Center of Indian Space Research Organization.

## Learning Objectives

The aim of this training is to provide participants with the in-depth understanding of the Drought Analysis Software Package that has been customized for Myanmar with expert support from the National Remote Sensing Center of Indian Space Research Organization and to leverage the usage of this software for drought monitoring, analysis and decision making.

**At the end of the course participants should be able to:**

- Define the basic concepts and terminologies related to drought and its management;
- Understand the different approaches of data collection and organization;
- Understand the technical knowhow of automatic weather stations;
- Compute and interpret different drought indicators such as meteorological, hydrological and agricultural;
- Use mobile apps for drought impact and vulnerability assessment and;
- Use Drought Analysis Software for drought risk monitoring/management.

## Training Content

The training is focused on providing insight into various concepts and methods available for drought risk monitoring and management. The first two days of the training will familiarize the participants with concepts of drought, understanding drought and its management, drought related data collection and organization, automatic weather stations, computation and interpretation of different drought indicators whether meteorological, hydrological and agricultural, use of mobile apps for field data collection and different approaches and methods for drought analysis, impact assessment and drought vulnerability assessment.



The third, fourth and the first half of the fifth day will familiarize the participants with the Drought Analysis Software Package that is currently being customized for Myanmar by the National Remote Sensing Center (NRSC) of Indian Space Research Organization and its specifications and applications for drought monitoring and assessment towards improved decision making. The participants will be provided with case studies for hands-on exercises using the Drought Analysis System so that they get an in-depth understanding of the software functions and its applications.

The training course will be closed with a short competency quiz to measure outcomes of the learning event.

## Duration and Instructional Methodology

**5 Days: 05<sup>th</sup> – 09<sup>th</sup> February 2018**

This is one-week training for DMH staff will include lectures from NRSC experts followed by hands-on exercises using local datasets and case studies/scenarios as well as discussions.

The whole training is designed in a way to have a balanced approach between theoretical and practical methodologies that will enable the participants to gain maximum knowledge on the subject. There will be Power Point presentations, live demos, maps, diagrams and interactive sessions.

## Expected Participants and Prerequisites:

The participating team from Myanmar will be comprised of selected staff of DMH with the aim to improve their learning and knowledge on the Drought Analysis System. It is recommended that participants taking the training have a working knowledge of English including basic awareness about GIS and Remote Sensing applications.

### Language:

English

### Software:

Drought Analysis System Software (Standalone).

### Class Size:

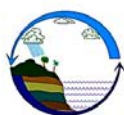
The number of participants is limited to 15 to ensure quality support is provided.

### UN Certificate:

Participants will be given a UN certificate on successful completion of the training.

### Training Venue

Hotel Royal Ace



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## Institutions Involved:

The training will be conducted jointly by resource persons from ESCAP and the National Remote Sensing Center (NRSC) of Indian Space Research Organization (ISRO).

**United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)**, located in the United Nations Building in Rajadamnern Nok Avenue in Bangkok, Thailand, is one of the five regional commissions of the United Nations Economic and Social Council under the administrative direction of the United Nations headquarters. ESCAP's regional focus is managing globalization through programs in environmentally sustainable development, trade, and human rights. ESCAP works to overcome some of the region's greatest challenges by providing results oriented projects, technical assistance and capacity building to member States in areas such as Macroeconomic Policy and Development; Trade and Investment; Transport; Social Development; Environment and Sustainable Development; Information and Communications Technology and Disaster Risk Reduction; Statistics; and Sub-regional activities for development.

**National Remote Sensing Center (NRSC)** is located at Hyderabad and is one of the centers of the Indian Space Research Organization (ISRO), striving to realize the Indian Space Vision, as a key player in Earth Observation Programme and Disaster Management Support programme. NRSC is responsible for acquisition, processing, supply of aerial and satellite remote sensing data and continuously exploring the practical uses of remote sensing technology for multilevel (global to local) applications. It provides the necessary trained manpower through capacity building in remote sensing applications.

## Training Coordination

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## Course Schedule: 05-09 February, 2018

Week 1	05 February Monday	06 February Tuesday	07 February Wednesday	08 February Thursday	09 February Friday
<b>S1</b> 9:00-10:15	<i>OPENING: Introduction to the Training Programme (DMH &amp; ESCAP)</i>	<i>Drought Monitoring, Early Warning and Impacts (NRSC-ISRO) [PPT]</i>	<i>Agricultural drought vulnerability assessment [PPT]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Hands-on Exercises (NRSC-ISRO) [LAB_EX + DISS]</i>
<b>S2</b> 10:30-12:00	<i>Droughts and its conceptual definitions; Types of Droughts (Agricultural/Mete orological/Hydrol ogical) (NRSC-ISRO) [PPT]</i>	<i>Gathering Field Data and Earth Observation Data for Drought Monitoring (NRSC-ISRO) [PPT]</i>	<i>Field Data Collection Using Mobile Appps (NRSC-ISRO) [Field-EX]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Discussion Session on the Drought Analysis System [DISS]</i>
12:00-13:30	<b>LUNCH</b>	<b>LUNCH</b>	<b>LUNCH</b>	<b>LUNCH</b>	
<b>S3</b> 13:30-15:00	<i>Introduction to Drought Indices and its use for Drought Monitoring (NRSC) [PPT]</i>	<i>Introduction to the Drought Analysis System (NRSC-ISRO) [PPT+ID]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Quiz (30 minutes) (13.30-14.00)</i>
<b>S4</b> 15:15-16:30	<i>Computation and interpretation of Different Drought Indicators (NRSC-ISRO) [PPT]</i>	<i>Demonstration of the Drought Analysis System (NRSC-ISRO) [PPT+ID]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Hands-on Exercises (NRSC- ISRO) [LAB_EX + DISS]</i>	<i>Evaluation, Certificate Distribution &amp; Closing (14.00- 15.00 hrs.)</i>
16:30-17:00	<b>Wrap-up &amp; Self-Study</b>	<b>Wrap-up &amp; Self-Study</b>	<b>Wrap-up &amp; Self-Study</b>	<b>Wrap-up &amp; Self-Study</b>	<b>Close</b>

**[PPT]:**

**[Stakeholder EX]:**

**[LAB\_EX]:**

**[ID]:**

**[DISS]:**

**Power Point Presentation**

**Stakeholder Exercise**

**GIS Lab Exercise**

**Interactive Demonstration**

**Discussion**



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