



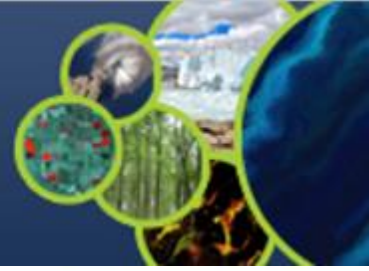
Committee on Earth Observation Satellites

# ISRO Capacity Building Activities in Asia

Session 5: Regional Highlights ASIA-OCEANA  
Indian Space Research Organization  
Dr. S.P. Aggarwal, IIRS (ISRO)

CEOS WGCapD-9 Annual Meeting  
Sunnyvale, California  
10-12 March 2020

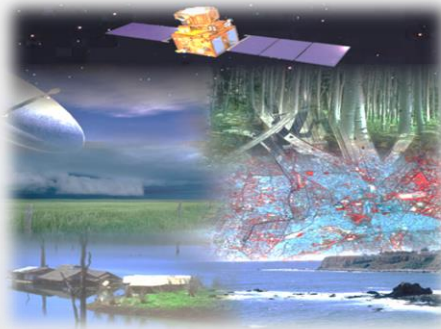




**Vision:** Harness space technology for national development, while pursuing space science research and planetary exploration

## Space Infrastructure

- Earth Observation
- Communication
- Navigation
- Space Science & Planetary Missions



## Space Transportation

- PSLV and GSLV
- Reusable LV
- Modular LV

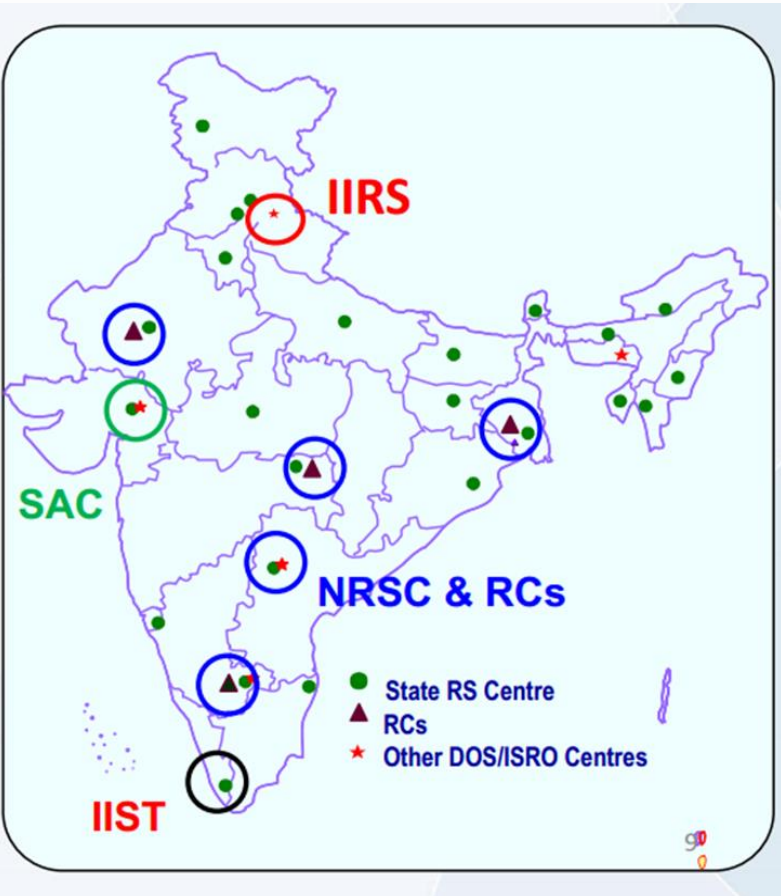
## Capacity building

- Human Resource Development
- Indigenization
- Technical Infrastructure
- International Cooperation
- Industry, Academia, Outreach

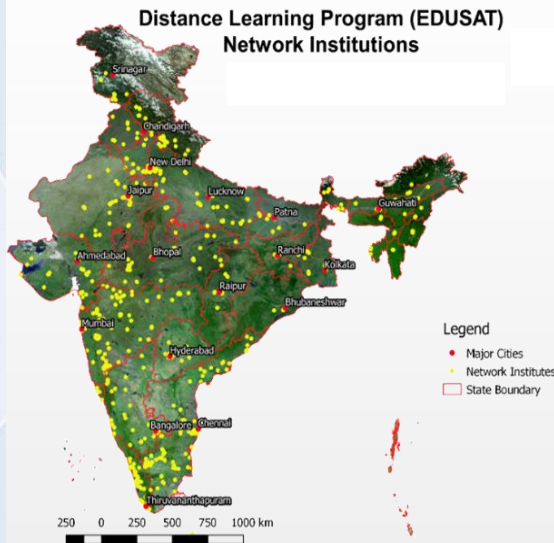
## Space Applications

- Socio economic Security, Sustainable Development, DRR & Governance
- Synergistic Applications (EO, SatCom & Navigation)





## IIRS



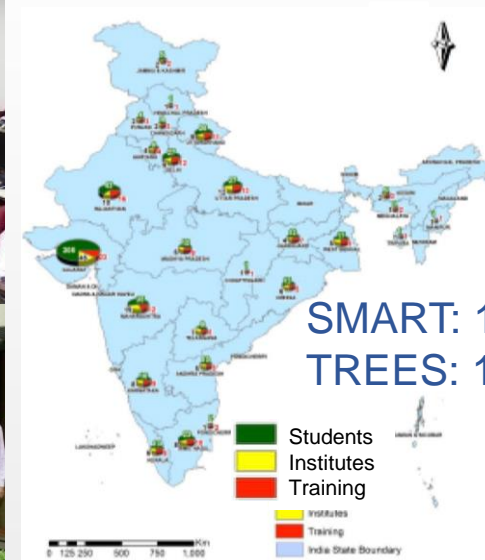
Interac. Live Classes: ~1.1 L  
 E-Learning: ~5200  
 Network Inst.: 1000+

## NRSC



Focus on User Depts.

## SAC



SMART: 1128  
 TREES: 1725

SMART: Sat. Met. & Ocean. Res. & Training  
 TREES: Training & Res. in Earth Eco-System

## NESAC

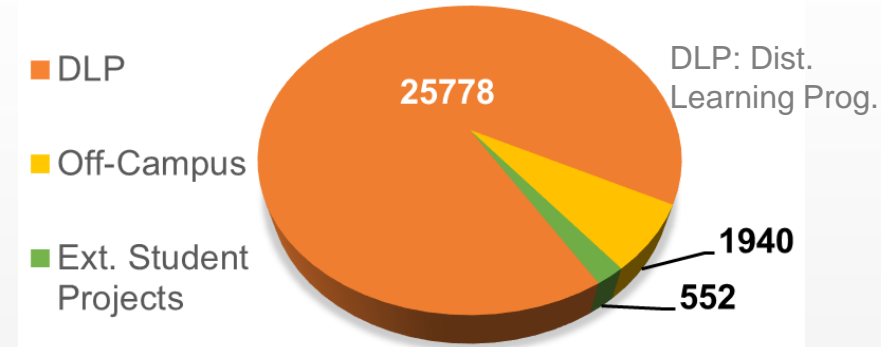
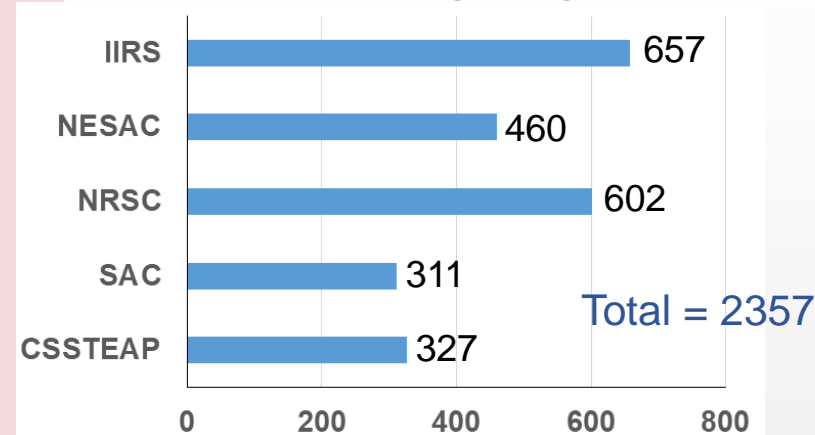




## Training

- ISRO's Products & Services
- Customised Courses for User Dept.
- Thematic Applications
- Future EO Data Utilisation
- STP
- **Education**
  - M.Tech. / M.Sc. / P.G.Diploma
- **Distance Learning**
- **Student projects & Outreach**

## On-Campus Training Programs (2019) Off-Campus Training, DLP & Outreach (2019)



Visiting Students, Exhibition etc.: ~2 lakhs

## International Programs

- ITEC / MEA: 719 participants from 81 countries
- UN-CSSTEAP: 2394 participants from 36 Asia-Pacific Countries
- ASEAN Countries
- BIMSTAC Countries
- SAARC Countries



# UN-CSSTEAP: Educational Programs

## Postgraduate Courses on

**Remote Sensing & GIS  
(RS & GIS) Every Year**

**Satellite Communication (SATCOM) &  
Global Navigation Satellite Systems  
(GNSS)  
Alternate Odd Year (OY)**

**Satellite Meteorology & Global  
Climate (SATMET)  
Alternate Even Year (EY)**

**Space and Atmospheric Sciences  
(SAS)  
Alternate Even Year (EY)**

**Short Courses** on DRR and Small  
Satellite Missions (every year) and  
user demand based courses



Class Room activity

### Overall Course Organization



Dr K Sivan with RS/GIS course participants 2018





# Achievements of 25 years



Joint Valedictory of SATCOM & GNSS, 2016

## 61 PG courses

- 24 RS & GIS
- 12 SATCOM
- 11 SATMET
- 11 SAS
- 3 GNSS



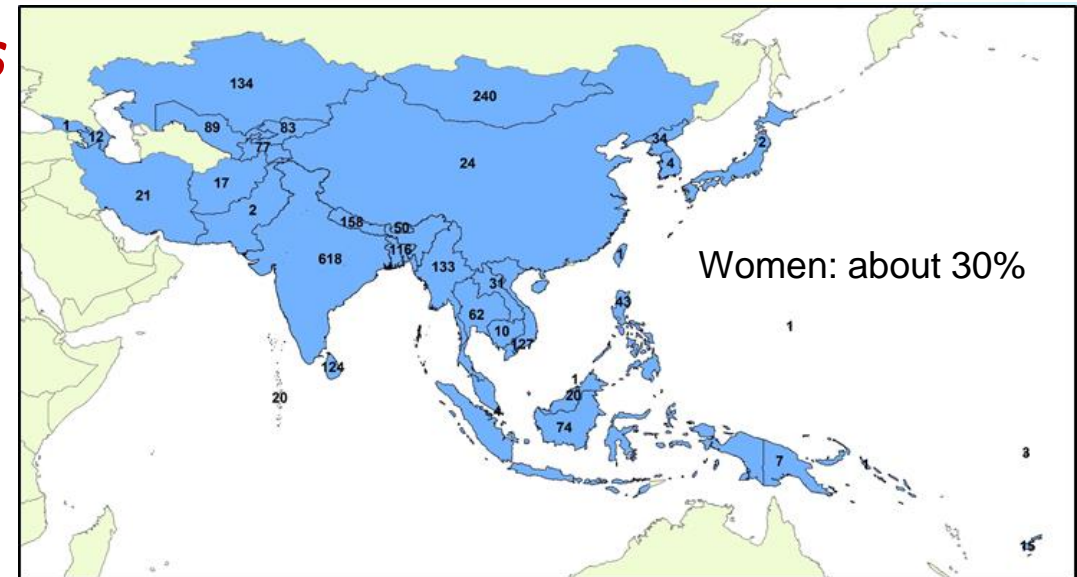
Governing Board Meeting, 2019



R&GIS Valedictory Function, 2019

## 60 short courses

- 37 RS & GIS
- 8 SATCOM
- 4 SATMET
- 3 SAS
- 8 SSM

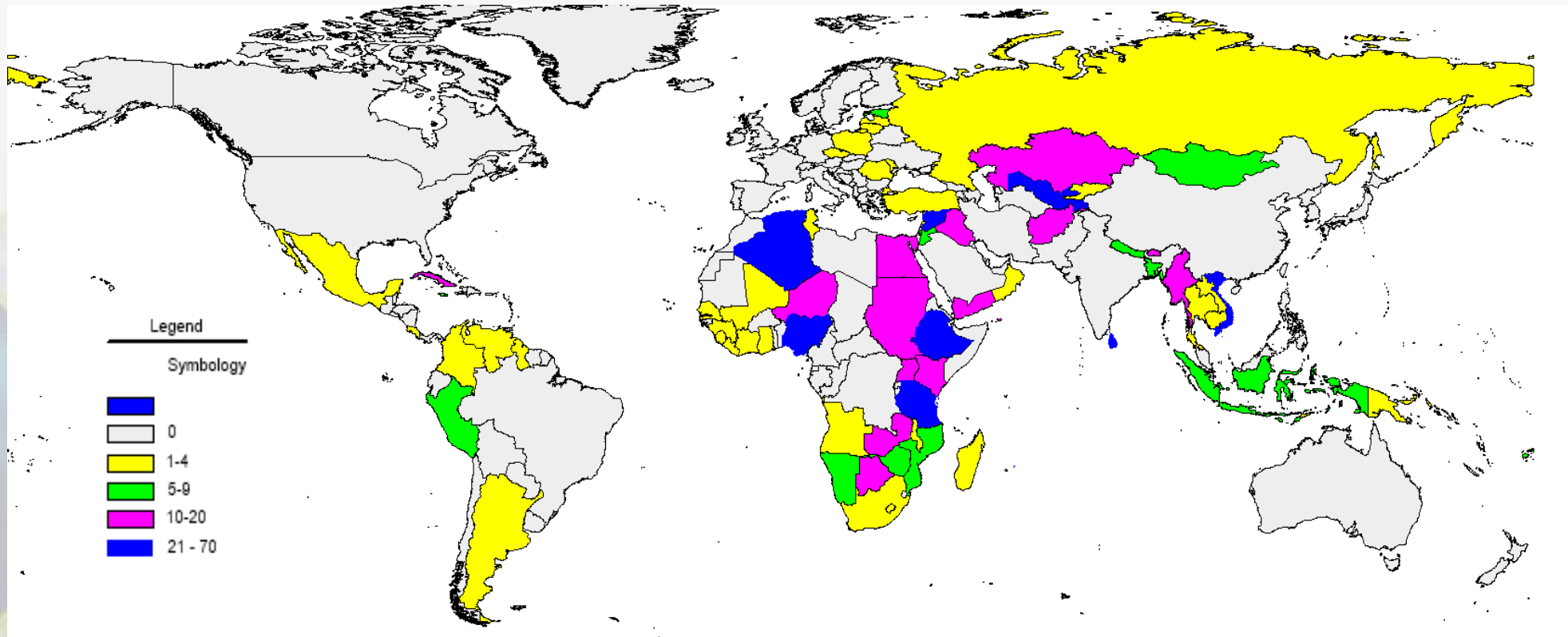


2394 participants from 36 countries

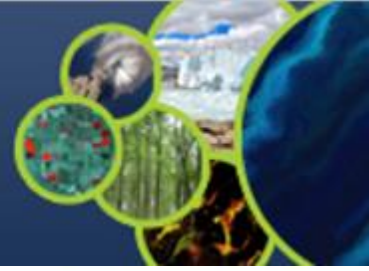


## Beneficiaries: 719 (81 Countries)

- Short Course on Remote Sensing : 402
- Short Course on Geoinformatics: 246
- P.G. Diploma (2009): 11
- Special Short Course (2017) : 60







- **New specializations/ streams in existing courses:**
  - ‘Natural Hazards & Disaster Risk Management’ in M.Tech. (2020-21 onwards)
  - ‘Spatial Data Science’ in P.G. Diploma (2020-21 onwards)
  - ‘Geocomputation & Visualisation in Web Platforms’ & ‘Natural Hazards & Disaster Risk Management’ in NNRMS course for Univ. faculty (2019-20, 2020-21)
- **Outreach Activities:**
  - Extending to International Users (approved by Chairman, ISRO; to start in 2020)
  - Webinar Series for CEOS-WGCapD & CSSTEAP
  - Offer e-Learning course on SWAYAM Portal of AICTE (proposal submitted to AICTE)
  - Developed & Implemented Online Learning Platform: E-CLASS (Electronic Collaborative Learning and knowledge Sharing System)
  - UN-SDGs through online platform (2020)
- CEOS-WGCapD course on ‘Biomass estimation’ for BIMSTEC countries (March, 2020)
- Industry collaboration in capacity building (proposed)



Future CB demand from Ministries/ departments of Govt. of India: few examples

- Urban: 2500 professionals
- Forest and environment: 900 officers and 30,000 staff per year
- Disaster management: 700 professionals per year
- Water Resources: 200 officers per year

## International Programme: ASIA-Pacific Region

- BIMSTEC
- ASEAN
- ITEC

# Thank You