



**CSSTEAP**  
*A Journey of*  
**25**  
Years

*Souvenir*

**CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC (CSSTEAP)  
AFFILIATED TO THE UNITED NATIONS**

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**CSSTEAP**

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**25**  
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**Dr. K. Kasturirangan**

Honorary Distinguished Advisor, ISRO &  
Former Chairman, ISRO/CSSTEAP GB & Secy. Dept. of Space



I am delighted to know that CSSTEAP is commemorating the 25 years of achievements through a variety of events including bringing out a souvenir with messages from different individuals who had associations with this institution.


I recall vividly the several steps that ISRO took to bring into fruition this centre against other competitors, dealing with United Nations Office of Outer Space Affairs (UN-OOSA), Government of India's agencies including Ministry of Foreign Affairs and coordinating with countries of the Asia-Pacific motivating them to become active members of this centre of management and utilisation were some of the key challenges that we had to confront in the early stage. Thanks to the support of UN-OOSA and in particular, Dr Nandasiri Jasentuliyana, Director of the Office Outer Space Affairs and Mr Adigun Ade Abiodun, the Special Officer dealing with activity of CSSTEAP from the UN side, in addition to the support from the concerned Indian agencies, we could get all the approvals at both national and international levels in the shortest possible time. Thus, CSSTEAP became a reality on November 1, 1995.

The mission of the Regional Centres is to establish national capabilities in developing countries to design and implement education, research and application programmes in space science and technology, in particular, in the areas of (1) Remote Sensing & Geographic Information Systems, (2) Satellite Communications & Global Positioning Systems, (3) Satellite Meteorology & Global Climate, (4) Space & Atmospheric Sciences and (5) Global Navigation Satellite Systems.

The Centre has conducted 61 PG courses (24 in Remote Sensing & Geographic Information System (RS & GIS), 12 in Satellite Communications (SATCOM), 03 in Global Navigation Satellite Systems, 11 each in Satellite Meteorology & Global Climate (SATMET) and Space & Atmospheric Science (SAS). From 2015 a new PG course on Global Navigation Satellite Systems has been introduced at SAC, Ahmedabad.

CSSTEAP programmes have benefitted around 2394 participants from a total of 36 countries in the Asia-Pacific region. This also includes 35 participants from 20 countries outside Asia-Pacific region. PG Courses have benefitted 1018 participants while Short Courses have benefitted 1228 participants and 148 participants have been benefitted from webinar. 176 participants from 17 countries have been awarded M.Tech. Degree in the 5 disciplines (82 participants in RS & GIS; 48 in SATCOM; 21 in SATMET, 23 participants in SAS and 02 participants in GNSS).

I am happy to note that the centre had the benefit of leadership from some of the very highly accomplished scientist such as Prof B.L. Deekshatulu from India, Prof



Karl Harmsen from Netherlands and Prof George Joseph from India and many such thought leaders. Government of India and ISRO in particular, have provided enormous support in making this institution beneficial to the countries of the Asia Pacific region and thus, enabling such countries build their capabilities and capacities in many areas of space technology, science and applications.

According to the Centres vision for the future, it plans to establish collaborative projects in education and research in space science and technology with regional UN affiliated institutions in the Asia-Pacific Region and to stimulate regional collaboration. These activities may also include the establishment of formal CSSTEAP campuses in the AP Region. CSSTEAP plans to increase its educational and training capacities in broad fields of climate and atmospheric studies, to address space for UN SDGs etc. This will increase the number of students from the region and establish collaborative ventures outside of India and encourage more countries to become signatories to the CSSTEAP Agreement.

On this august occasion, let me extend my warm greetings to one and all who have been associated with this institution since its inspection including the present dynamic Director, Dr Prakash Chauhan and thus, giving it a pride of place among several international institutions that provide support in capability and capacity building in the area of Space research. I am sure, the next 25 years are going to be even more eventful for this centre, gaining more visibility and recognition. I wish CSSTEAP the very best in the coming years.



**(K Kasturirangan)**

## Centre for Space Science and Technology Education in Asia and the Pacific (Affiliated to the United Nations)

**Dr. K. Sivan**  
Chairman, CSSTEAP GB/  
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I am extremely happy to note that The Centre for Space Science & Technology Education in Asia and the Pacific (CSSTEAP) has completed its 25 years on November 01, 2020. All through these eventful years, CSSTEAP, an initiative of United Nations, has fruitfully served its objective of establishing national capabilities in developing countries of Asia Pacific region to design and implement education, research and application programmes in space science and technology. The completion of twenty-five years is indeed a major milestone in the evolution of the Centre and its commendable service.

Since the establishment of CSSTEAP in 1995, Department of Space, has extended infrastructure and faculty support to the Centre through the Indian Institute of Remote Sensing (IIRS), Space Application Centre (SAC), Physical Research Laboratory (PRL) and UR Rao Satellite Centre (URSC).

It is highly satisfying to note that CSSTEAP has evolved as a Centre of Excellence and become a role model for space education in the Asia and the Pacific Region. The UNOOSA, Governing Board members, Advisory Committee members, Government of India through Department of Space, Directors of Host Institutions, faculty and Programme Coordinators deserve special appreciation for their committed support.

CSSTEAP has trained over 2300 participants in the fields of Remote Sensing & GIS, Satellite Communications, Global Navigation Satellite System, Satellite Meteorology & Global Climate and Space & Atmospheric Sciences. I am sure respective countries would have gained from the expertise of their participants.

I convey my best wishes to all CSSTEAP colleagues, present and former, faculty, scientists, engineers, students, staff members and alumni, on completion of 25 years of service to the Asia Pacific region and wishing them successful years ahead.

Dated : October 20<sup>th</sup>, 2020

  
(कै. शिवन/K. Sivan)

# MESSAGE



## UNITED NATIONS Office for Outer Space Affairs



On behalf of the United Nations Office for Outer Space Affairs, I am delighted to take part in the Silver Jubilee commemoration of the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP). Over its 25 years of existence, the Centre has provided excellent services in education, training and knowledge-sharing that helped alleviate human suffering and increase the resilience of our planet.

Specifically, over 25 years, the Centre offered 61 postgraduate diploma courses and 60 short courses in the areas of satellite remote sensing, satellite communication, satellite meteorology, space science, global navigation satellite systems and small satellite mission. Over 2400 participants from 56 countries have benefitted from these efforts.

Since a few years, CSSTEAP is also contributing to off-campus programmes and technical advisory missions organised by the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), the programme of the Office for Outer Space Affairs dedicated to mitigating disaster risk. The Centre's contribution to the work of UN-SPIDER helps amplify its resources and ensure more people worldwide benefit from the opportunities offered by space technology.

The current global pandemic has not slowed the work of the Centre and of UNOOSA, quite the opposite. Just a few weeks ago, we jointly launched the Massive Open Online Course (MOOC) on Geospatial Applications for Disaster Risk Management. This is a free and open to all online course that provides hands-on learning on using space applications to reduce disaster risk at one's own pace. In less than a week from its launch, over 29,000 people from 136 countries enrolled for it, which shows we are providing an important resource.

Through these services, we are creating opportunities to promote inclusiveness and equality, helping developing countries in particular access the knowledge and skills they need to leverage space. These services directly contribute to SDG 4, "Quality Education" and SDG 11, "Sustainable cities and communities".

I wish to congratulate the current and former directors and team members of CSSTEAP who have contributed to this 25 years of excellence. In particular, I would like to express my gratitude to Dr. K Sivan, Chairman of ISRO and Chair of this Governing Board, as well as the former Chairmans of the Centre, for supporting its activities.

By keeping abreast of fast-evolving technology, I am confident the Centre will continue to make a unique positive impact in space education in Asia and the Pacific.

I wish all of you a joyful celebration!

A handwritten signature in black ink, appearing to read 'S. Di Pippo'.

**Simonetta Di Pippo**

Director

United Nations Office for Outer Space Affairs

### **Bringing the benefits of space to humanity**

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**H.E. Mr Yerlan Alimbayev**

Kazakhstan (GB Member of CSSTEAP)



Nowadays, effective use of satellite capabilities is very crucial. It becomes important to pay attention to the sustainable management of natural resources and environmental protection, creation of communication infrastructure, including for remote and inaccessible areas, and the development of positioning and navigation tools.

Since its foundation in 1995, the Center for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) has made a significant contribution to the development of the region in this area, providing countries with the opportunity to train their specialists in advanced sciences using space technologies.

During this period CSSTEAP has improved its educational programs, as well as expanded the platform for research work, equipped with modern high-performance computing tools and research laboratories.

Kazakhstan, being a full-fledged space power, has a great interest in enhancing the potential of scientists and researchers by referring its citizens to advanced training courses organized on the basis of CSSTEAP. So, since 1999, more than 100 specialists have been trained under this program. The knowledge they gained made it possible to expand their understanding of space technologies and subsequently implement them in our national programs, including involving them into the preparation of students at prestigious universities in Kazakhstan.

In this regard, the Kazakh side expresses its appreciation for the worthy contribution of the CSSTEAP to the education of the future generation of young specialists. For 25 years, CSSTEAP has affirmed its importance with a quality approach to work and the perspective of educational programs being organized.

Expressing my heartfelt congratulations on this occasion, I wish the CSSTEAP further progress, to always be at the forefront of rapidly developing space technologies, and I hope for more strengthening our mutually beneficial cooperation.

**(H.E. Mr Yerlan Alimbayev)**

## MESSAGE

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### Akymbek Abdykalykov

GB Member of CSSTEAP,  
President of the International university of innovative technologies,  
Kyrgyz Republic, Bishkek



I would like to congratulate the entire team of CSSTEAP with 25th anniversary of the Centre for Space Science and Technology Education in Asia and the Pacific (Affiliated to the United Nations). 25 years ago – on November 1, 1995, was signed an Agreement on creation of the center, and with this moment the Center makes an important contribution to expanding the capabilities of the countries of the Asia-Pacific region in the border areas of space science and technology and their applications. Today, there are large number of alumni from about 60 countries across the globe. The center officially has strong support from United Nations (UN).

Thanks to the activities of the Center, it has become possible to strengthen regional and international cooperation in the field of space science, technology and applications, the use of space technology for the environment preserving and sustainable development of the countries of the Asia-Pacific region.

Great attention is paid to the Center for proliferation to the public the values of space science and technology in improving the quality of their daily lives. University teachers, researchers and scientists from Kyrgyzstan became listeners of the Center's programs, and thereby gained the opportunity to expand their skills and knowledge in the design, development and application of space science and technology in national and regional development and environmental management. Many participants of CSSTEAP training and educational programs related to GIS technology, remote sensing, monitoring global climate change, satellite meteorology, returning to Kyrgyzstan successfully apply in the educational process and their scientific and practical activities.

We are looking forward for support of UNOOSA, updating of programs and disciplines. We wish that new researches and developments of CSSTEAP will lead to successful development of member-countries and their safe coordination!

We wish directors and employees of institutions and programs of CSSTEAP, good health, new projects and success in their work!

(Akymbek Abdykalykov)

## **Joon Lee**

GB Member of CSSTEAP,  
Principal Researcher  
Policy and Cooperation Division  
Korea Aerospace Research Institute (KARI)  
The Republic of Korea (South Korea)



Congratulations the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) on the achievements and success in the work for 25 years!

The Center has benefitted a lot of participants from various countries including South Korea giving them not only good knowledge on space technology and applications but also inspiration for people's better life.

It is obvious that most of participants are now in the position of research, practical work or decision-making in each country.

In this regard, I would like to thank you for the work done so far and also hope that your efforts will go on actively and enthusiastically for the next generation.

**(Joon Lee)**

## MESSAGE



### EMBASSY OF THE REPUBLIC OF THE PHILIPPINES फिलीपीन्स गणराज्य का दूतावास NEW DELHI



I am delighted to extend my warmest congratulations to the centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) as it celebrates a remarkable twenty-five years of its establishment.

Since CSSTEAP's founding in 1995, the Centre has opened its doors to collaboration with member countries, contributing to regional development in various aspects of space science and technology.

The Philippines is one of the countries which has been benefitting from the educational programmes and trainings offered by the Center. Since its inception, the Philippines has sent about 41 participants to both post graduate (PG) and short courses conducted by CSSTEAP. These kinds of programmes help enhance and develop the skills and expertise of its participants from the Asia-Pacific region in space science, environmental and atmospheric satellite communication, Remote Sensing and Geographic Information System (RS&GIS), among others.

The Philippines looks forward to further collaborate with CSSTEAP in its future trainings and programmes.

I wish the CSSTEAP continued success in all its undertakings.

16 January 2020

A handwritten signature in black ink, appearing to read 'R. Bagatsing, Jr.'.

**Ramons. Bagatsing, Jr.**  
Ambassador

## Eng. Sanath Panawennage

GB Member of CSSTEAP,  
Director General & CEO,

The Arthur C Clarke Institute for Modern Technologies (ACCIMT), Sri Lanka,  
CSSTEAP Governing Board Member of Sri Lanka.



It is with great pleasure that I share this message on the occasion of the 25th Anniversary of the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP).

Space technology and its applications are ubiquitous; they transcend nearly all conceivable spheres of activity in socio-economic development, industry and commerce, and governance the reason why it has been recognized as a vital technology tool in enabling realization of the sustainable development goals (SDGs2030) and all other globally adopted development agenda.

CSSTEAP is the first UN-affiliated regional centre for capacity building in space science and technologies. The Centre has emerged as a role-model international organization for capacity building in space science and technologies within a short period of its establishment—a position the Centre has managed to maintain throughout. The rich resource base of the Centre comprising, on the one hand, the experts drawn from specialized technology centres of the Indian Space Research Organization (ISRO) with high standards of theoretical and practical competence to constitute the faculty of the Centre, and, on the other hand, its access to state-of-the-art technology facilities of ISRO centres, which are designed to serve the technology-needs of one of the most comprehensive space programmes in the world, have indeed been a distinctive competence of CSSTEAP—arguably the cornerstone of its high standards and success.

As the Governing Board Member representing Sri Lanka, I wish to extend my sincere thanks on this momentous occasion to the host Government of India, the Governments of the other member countries, UNOOSA, ISRO, the faculty and the staff of CSSTEAP, and the recipients of training, for their contribution in making what CSSTEAP is today a role model international training centre on space.

**(Eng. Sanath Panawennage)**

# MESSAGE



## **Dr. B.L. Deekshatulu**

*FNA, FIEEE (USA), FTWAS (Italy), Padmasri  
Distinguished Fellow, IDRBT, Hyd.*

*Former:*

*Professor, I.I.Sc., Bangalore*

*Distinguished Scientist*

*(Secy. Grade) & Director NRSA,*

*Hyderabad, Govt. of India*

*Director CSSTEAP (UN)*

*Visiting Professor, Univ. of Hyderabad.*

*Chairman NIT Warangal*

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*President, AP Academy of Sciences*

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25 years of accomplishments signifies the youth of CSSTEAP. With rapid development of technologies all round, the curriculum has been changing to suit the needs of the member countries, by imparting the most useful and recent technology and applications. Very glad to note that, under the leadership of the Directors of the 3 centers of ISRO (the Host Institution), the participation for education and training has reached 2300 in 25 years. Each participant, after returning from CSSTEAP to his / her home country, has to disseminate / contribute the knowledge acquired at CSSTEAP, through whatever means available (project execution or teaching).

I congratulate ISRO, all the Member State Governments and the UN-OOSA for nurturing CSSTEAP to this stage. Wishing all success to the silver Jubilee function of CSSTEAP and also in the future.

Date : Octoebr 18, 2020

**B. L. Deekshatulu**

### **Dr. George Joseph**

Former Director,  
SAC, (ISRO), Ahmadabad &  
CSSTEAP, affiliated to the UN, Dehradun.



I am happy to note that the Centre for Space Science & Technology Education in Asia and the Pacific (CSSTEAP) is planning to commemorate its 25 years of achievement. To enhance the capabilities of the developing countries in different areas of space science and technology, United Nations Office for Outer Space Affairs (UN-OOSA) took the initiative to establish regional centers in developing countries. CSSTEAP is the first regional center established by UN-OOSA in November 1995. It is gratifying to note that the Center starting with 10 member countries now has 17 member countries in the region. It is a matter of great satisfaction that more than 2300 officials from total 36 countries of Asia Pacific region benefitted from the various programmes of CSSTEAP. I sincerely hope that other member countries in this region would soon join the CSSTEAP so that the fruits of the space technology could benefit their countries also. I am happy to note that starting with nine-month diploma courses the Center has expanded its activities to conduct several theme-specific short courses. The participants are taught by professionals who have long practical experience in the field which makes better assimilation of the subjects. I hope the knowledge and skills acquired by the participants during the stay at CSSTEAP is profitably used for their respective national development.

I wish the Center continued success in its future endeavours.



**(Dr. George Joseph)**

# MESSAGE



## INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

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### डॉ. वी.के. डडवाल/Dr. V.K. Dadhwal

निदेशक/Director



It gives me immense pleasure to extend warm greetings to the alumni and faculty of CSSTEAP on the occasion of its silver jubilee celebrations. These 25 years have been testimony of great value of international cooperation, keen desire to learn the various facets of space technology displayed by a large number of staff, researchers and nominees from various countries, and not the least, the extensive knowledge and willingness to share by faculty at three host institutions of CSSTEAP (IIRS, PRL, SAC).

Special acknowledgement also needs to be made to the Department of Space/ISRO who have provided resources and technical support to CSSTEAP on behalf of India, the host nation. The support to CSSTEAP from Government of India is a continuation of its extensive engagement with UNOOSA, initially to establish Thumba Equatorial Rocket Launch Station (TERLS) which had its first launch in 1963 and was dedicated for use of international community in 1968. CSSTEAP was the first of regional center to be established under UNOOSA. It has made pioneering contribution in drawing up modern syllabus for all the streams of CSSTEAP training using the expertise of International Advisory Committee.

I had the privilege of being associated with CSSTEAP in various capacities including member of technical/advisory committees, head of host institution, Deputy Director and Director-in-charge as well as the opportunity to celebrate completion of 10 years of CSSTEAP in a grand function at New Delhi. CSSTEAP has awarded diplomas and certificates to 2394 students which have come from 36 Asia Pacific countries as well as additional 20 countries outside this region. In order to maximally convert CSSTEAP training to education an opportunity has been provided to students to continue their research project on return to their country or with extended stay in India and submit for award of MTech to Andhra University. It is a matter of great satisfaction to all associated with CSSTEAP that more than 170 students have been able to earn a PG degree.

I look forward to continued growth in stature of CSSTEAP in fulfilling all its original objectives as well as keeping in pace with emerging opportunities in development and use of space technologies for national development and meeting sustainability development goals to which the entire global community is committed.

October 20, 2020

  
(VK Dadhwal)



**Dr. Parth Sarathi Roy****Senior Fellow, WRI**

Former:

Senior Advisor, ICRISAT,

NASI Senior Scientist- ICRISAT &amp; UOH,

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The United Nations Office of Outer Space Affairs (UN-OOSA) established regional training and educational centers for building capacity in the field of Space Technology and Applications for the developing countries. The first such regional center, Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), was established on 1st November, 1995, at Dehra Dun, India, with the support of Indian Space Research Organisation (ISRO)/ Department of Space (DOS) institutions.

It is heartening to observe that the Center is celebrating 25 years of its existence. The center has made immense contribution towards the development and growth of capacities that enable the member countries to enhance its knowledge, understanding, and practical experience the areas of space science and technology. The center has made great impact in the region, on its economic and social development, including the preservation of its environment. The center is contributing towards the sustainable development Goals of United Nations.

My association with CSSTEAP has been since the time of inception, in different capacities. It has been very satisfying and great learning experience. I congratulate the members of Governing Members, International Advisory Board, Directors of CSSTEAP and the faculty members for their most valuable contributions.

My best wishes for the future endeavors.

  
**(Parth Sarathi Roy)**

World Resources Institute India

# MESSAGE



## INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

(A Deemed to be University u/s 3 of the UGC Act, 1956)

Government of India, Department of Space

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### Dr. Y.V.N. Krishna Murthy

Senior Professor & Registrar



It is indeed gratifying that the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) has successfully completed twenty-five years. Over the last twenty-five years, CSSTEAP has developed into a 'Centre of Excellence' in capacity building of education and training activities. The Centre has helped more than 2300 personnel from Asia-Pacific countries to gain expertise and experience in the application of space technology for various developmental activities in their countries and also take up space science studies. Many of the Alumni are heading the institutes of their specialisation in their respective countries.

The contribution that CSSTEAP has been making towards capacity building in Space Science and Technology and their applications in the region is certainly encouraging, and it is aptly evident from the status that CSSTEAP has achieved as a role model centre amongst UN-affiliated regional centres for Space Science and Technology Education.

I had the privilege to work with CSSTEAP as its Director for three years. I am happy that a new PG course on Global Navigation Satellite System (GNSS) and short course on small satellites were designed and started during my tenure. Besides regular courses, special courses 'on Disaster Risk Reduction, Disaster Damage Assessment using Geospatial Technologies, flood risk mapping, modelling and assessment using space technology in collaboration with SAARC DMC, UNESCAP, UNSPIDER and IWMI were organised. These are specially designed for the participants from SAARC region, Bhutan and other Asia Pacific countries with exhaustive hands on training. This shows the recognition the centre achieved by collaboration with major UN organisations of the region.

I still remember the participants from the member countries during their stay at the campus in Dehradun. While excelling in their studies, equally participated in all cultural and National programs. To quote a few, Rangoli competitions, Independence Day and Republic Day functions, Swachh Bharat Mission, etc. After the regular academic hours, fun in their hostels, preparing the favourite recipes of their country and sharing with everyone. Many memorable moments of CSSTEAP for me and equally to my wife Smt. Usha to cherish forever.

On this eventful occasion of Silver Jubilee celebrations, I wholeheartedly congratulate the entire team of the CSSTEAP and supporting colleagues of IIRS, Department of Space and ISRO centres for making this accomplishment with their passionate participation. I wish CSSTEAP to further enhance its activities for the benefit of the member countries in strengthening the space science and technology and its application in their respective countries.

With best wishes.

Dated: October 20th , 2020

**(Y.V.N Krishna Murthy)**

Formerly: Distinguished Scientist ISROI Director NRSC, Scientific Secretary ISROI Director IIRSI Director RRSCsl Director NARL (additional charge)1 Head RRSC Central I Director Antrix Board, Director CSSTEAP (UN affiliated Centre).

## Dr. A. Senthil Kumar

Dean – Institutional Relations & Professor, Electronics & Communication Eng.  
Kongu Engineering College, Perundurai, Erode TN 638060 INDIA President, ISPRS  
Technical Commission V: Education and Outreach Former Director- Indian  
Institute of Remote Sensing (ISRO) & CSSTEAP (UN affiliated)  
e-mail: dean\_ir@kongu.ac.in ; askumar.nrsc@gmail.com



I heartily congratulate CSSTEAP and its training institutions on this auspicious occasion of 25 years anniversary. I take this privilege to wish for continuous growth of the Centre and for an excellent record of achievements to benefit the aspiring working professionals from its Governing Board (GB) member countries and others as well. CSSTEAP has made time-to-time significant innovations, in terms of upgrading the course curricula in this fast emerging Space Science and Technology subjects, and also in initiating new capacity building approaches such as off-shore training and distance learning to reach the learners. The Centre has exploited the present day web-technologies to provide such education tools as digital knowledge repository, educational dashboard etc. By these innovative steps, CSSTEAP leads from the front and share its success to the UN-affiliated Regional Centres.

In my past five years of association with CSSTEAP, it was a great unique experience for me to work with very vibrant GB and Advisory Committee members. They have always shown keen interest not only in supporting the Centre's programs but also in providing strong new directions to improve its academic performance. Members of Board of Studies have taken the upgrading tasks of curricula more willingly and adapt timely changes required for these fast growing highly technical subjects. Alumni spread all over the world provide a great support in planning short courses of today's needs. Continued funding support received from the UN-OOSA and the UN-ESCAP stand as evidence of the Centre's contribution to the UN-flagship programs.

There is no doubt that the CSSTEAP participants continue to enjoy an unique opportunity of learning from well experienced technical trainers. These trainers share their practical experience gained out of enormous efforts put in to make things work from book models to working space systems.

On this auspicious occasion, I take this opportunity to sincerely congratulate all the colleagues – technical and nontechnical – of IIRS, SAC, PRL, ISAC and ISRO HQ who are involved in CSSTEAP programs. I am confident that the next 25 years of CSSTEAP will be truly exponential in terms of its growth and innovations.

Wishing the CSSTEAP all the best ahead.

14 October 2020

  
**A Senthil Kumar**

# MESSAGE

भारत सरकार  
अन्तरिक्ष विभाग  
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Department of Space  
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पी. कुन्हीकृष्णन

**P. KUNHIKRISHNAN**

निदेशक/DIRECTOR



I am extremely happy to note that 'Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), affiliated to the United Nations has successfully completed 25 years of glorious service on 1st November 2020 and celebrating its journey towards Excellence through a Virtual Meet organized on 2nd November 2020.

Since the inception of CSSTEAP in 1995, the Centre has grown by leaps and bounds and has gone a long way in imparting education in the potential areas of space science and technology for socio economic development of various countries with the support from Space Application Centre (SAC), Ahmedabad, Physical Research Laboratory (PRL), Ahmedabad and U R Rao Satellite Centre, Bengaluru. The remarkable growth & its valuable contribution in building academic excellence through various short term and long term courses in Asia-Pacific region over the years is commendable.

The Centre has also played an effective role in achieving capacity building objectives of UNOOSA and has conducted customized training programmes and noteworthy Global webinars benefiting Asia pacific nations at large.

On this momentous occasion, I extend my best wishes to the pioneers of Indian Space programme for establishing a wonderful platform of International Collaboration for knowledge sharing.

I wish the event a grand success.

पी. कुन्हीकृष्णन  
(P. KUNHIKRISHNAN)

## MESSAGE



भारत सरकार GOVERNMENT OF INDIA  
अन्तरिक्ष विभाग DEPARTMENT OF SPACE  
अंतरिक्ष उपयोग केन्द्र  
SPACE APPLICATION CENTRE  
अहमदाबाद AHMEDABAD - 380 105  
(भारत) (INDIA)  
दूरभाष PHONE : +91-79-26913344, 26928401  
फैक्स/FAX: + 91-79-26915843  
ई-मेल E-mail: director@sac.isro.gov.in

डी के दास / D K Das  
निदेशक / Director



I am happy to know that the Center for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) affiliated to the United Nations, through its Office for Outer Space Affairs (UN-OOSA), is completing 25 years on November 1, 2020 since its inception in 1995. With its focused approach towards education, research and various outreach activities in different domains of space science, technology and applications, CSSTEAP has established itself as a Centre of Excellence. It is very heartening to know that more than 2300 participants from 56 countries have been benefitted from various CSSTEAP programs organized at different Centres of ISRO and the participants benefitted are contributing towards promoting space science and technology to address the challenges in 2030 Agenda and its Sustainable Development Goals in Asia Pacific Region.

Space Applications Centre (SAC) engaged in development of payloads for meteorological, communications and navigations satellites, is one of the key host institutes responsible for conducting CSSTEAP Courses in the areas of Satellite Meteorology, Satellite Communication and Global Navigation Satellite Systems. With the vast experience in the development, retrieval and applications, SAC has been successfully imparting knowledge, understanding and practical experience in the above areas to participants from several countries from Asia Pacific Region for a greater impact on economic and societal development.

I extend my heartiest best wishes to the entire fraternity of CSSTEAP on its Silver Jubilee Celebration.

Place: Ahmedabad  
Date : Octoebr 15, 2020

  
(डी के दास)  
(D K Das)

# MESSAGE

## भौतिक अनुसंधान प्रयोगशाला

(भारत सरकार, अन्तरिक्ष विभाग की यूनिट)  
नवरंगपुरा, अहमदाबाद - 380 009, भारत



**Physical Reserach Laboratory**  
(A Unit of Dept. of Space, Govt. of India)  
Navrangpura, Ahmedabad 380 009, India

डॉ. अनिल भारद्वाज, एफएनए, एफएएससी, एफएनएएससी

**Dr. Anil Bhardwaj, FNA, FASc, FNASc**  
निदेशक / Director



I am extremely delighted to learn that Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) is organising a Virtual Meet-Celebrating 25 years of Excellence on November 2, 2020, to commemorate the 25 years of CSSTEAP.

Completing "25 years" mark for a Centre in the field of Space Science and Technology is always a joyous occasion - to recognise and assess its path of progress and achievements, as well as to plan the future programs.

PRL has been supporting the CSSTEAP program since its inception by organizing Post Graduate course on Space and Atmospheric Science, as well as the short-term courses.

I feel contented and rejoice with a sense of fulfillment on the significant contributions CSSTEAP has made in the field of Space Science and Technology.

I pray that CSSTEAP scales newer heights in the coming years and wish team CSSTEAP the best and a great future ahead!

October 20, 2020

*ABhardwaj*  
20/10/2020

डॉ. अनिल भारद्वाज  
**Dr. Anil Bhardwaj**  
निदेशक / Director

## भारतीय अन्तरिक्ष अनुसंधान संगठन

अन्तरिक्ष विभाग

भारत सरकार

अन्तरिक्ष भवन

न्यू बी ई एल रोड, बेंगलूर - 560 231, भारत

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## Indian Space Research Organisation

Department of Space

Government of India

Antariksh Bhavan

New BEL Road, Bangalore - 560 231, India

Telephone : +91 80 2341 6356

Fax : +91 80 2341 5298

email: scientificsecretary@isro.gov.in

## उमामहेश्वरन आर./Umamaheswarn. R

विशिष्ट वैज्ञानिक एवं वैज्ञानिक सचिव, इसरो

Distinguished Scientist &  
Scientific Secretary, ISRO




It gives me immense pleasure to note that, the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) affiliated to United Nations has completed 25 successful years. On this occasion, I warmly recall and place on record the excellent contributions made by all former and present CSSTEAP Officials, including Directors, Governing Board Chairmen and Members. Guidance and contribution from UN Office of Outer Space Affairs (UNOOSA), Advisory Committee members, Department of Space, Directors of Host Institutions, faculty and Programme Coordinators also deserve special mention for this accomplishment.

The vision of CSSTEAP is to develop Human resources in space science and technology for sustainable development in the Asia-Pacific region through capacity building. This is in line with India's tradition to enlighten others through knowledge sharing. Through its dedicated efforts, CSSTEAP is able to share the knowledge in space science and technology to other nations. During its 25 years, CSSTEAP has successfully organised 61 PG courses and 60 short courses benefitting more than 2300 participants from 36 countries in Asia-pacific and also 20 countries outside the Asia-Pacific. This shows its vast heritage of CSSTEAP in the area of capacity building and thus reaching to the Centre of Excellence. All these efforts contribute to develop future human capital in space, science technology and applications.

I am confident that, the participants who have taken these courses are contributing to the sustainable development programmes in their respective countries. Some of the recent initiatives of CSSTEAP to organise courses for disaster management, small satellite building, and courses via online-platform are very well appreciated and will help the participants professionally. I wish all the very best for CSSTEAP in its all future endeavours.

Dated: October 20th , 2020

  
(Umamaheswaran. R)





# Foreword



**Dr. Prakash Chauhan**


Director, CSSTEAP

The benefits of space technology, both direct and indirect, have added new dimensions to study and understanding of mother planet Earth and in improving the quality of life for the people living on it. An essential prerequisite to realize these opportunities is the building capacity for utilization of space science and technology. In recognition of such a pre-requisite, a consensus has emerged within the international community that if effective assimilation and appropriate application of space technology are to succeed in the developing countries, efforts must be devoted, at the local level, to the development of necessary high-level knowledge and expertise in space technology fields. Towards this, the United Nations General Assembly (UNGA) has called for the establishment of centers of Space Science and Technology Education at the regional level in developing countries.

The resolution of the UNGA to establish Regional Centres (RCs) for education in space science and technology was a major event that provided an opportunity to share and learn from one another's experiences in the broad areas of space science & technology. The Regional Centre for Asia and Pacific region was established in India on November 01, 1995, and is now known as Centre for Space Science & Technology Education in Asia and the Pacific (CSSTEAP). The Centre is a manifestation of the aspiration of the countries in the region to maximize the benefits from space technology.

CSSTEAP located in Dehradun, India has so far produced more than 2300 scholars from 36 different countries in the Asia-Pacific region. Additionally 35 participants from 20 countries outside Asia-Pacific region have also been benefitted. These scholars have important responsibilities as on their return back to their countries, they get an opportunity of putting to practical use the knowledge and expertise of Space Science Technology, which they have acquired at CSSTEAP.

The seventeen Sustainable Development Goals (SDGs) have been identified by UN to be achieved by 2030, combined with the targets of the Sendai Framework for Disaster Risk Reduction for overall global development. Countries in the Asia-Pacific region are expected to realize these SDGs. Space-based data and geospatial information are essential for implementation, monitoring and realization of some of these goals. Geospatial information has also increasingly been incorporated in development planning, which has led to more accurate monitoring and



evaluation of development interventions. As a result, geospatial information applications have come to play a more prominent role in the implementation and realization of the 2030 Sustainable Development Goals (SDGs). Building on the principle of "leaving no one behind", CSSTEAP is also committed to build capacity in AP region on use of Space Technology for SDGs and has included SDGs activities in CSSTEAP core courses. The Centre has been serving tirelessly towards the capacity building in the Asia-Pacific region and has significant achievements in the last 25 years. To mark the journey of excellence of the educational activities of the Centre, a Souvenir on 25 years of commemoration is being brought out as a special publication. The Souvenir gives a brief overview of the Centre, the Governing Board of the Centre, structure of its education programs, activities and achievements.

I sincerely thank Dr. K. Sivan, Chairman, CSSTEAP Governing Board (GB) for his constant guidance and encouragement to achieve the mandate of CSSTEAP. CSSTEAP has been receiving sustained and continuous support from UNOOSA. I also acknowledge the support being provided by UNESCAP. I thankfully acknowledge the Governing Board members, Advisory Committee members, Directors of Host Institutions, members of ISRO Coordination Committee, ISRO HQ for supporting CSSTEAP programs. CSSTEAP has also been aided immensely by Andhra University for its academic activities. I would like to place on record the immense contributions made by past GB Chairs and past CSSTEAP directors to make CSSTEAP a unique institution. I appreciate the conscientious efforts of Program Coordinator, Course Directors and Course Coordinators, teaching & research and support staff of host institutions belonging to DOS/ISRO family which enables CSSTEAP to be a Centre of Excellence for space science and technology education in Asia-Pacific region.



**(Prakash Chauhan)**

# CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC

(Affiliated to the United Nations)

## ABOUT THE CENTRE

The Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) was established in India on November 1, 1995. The United Nations Office for Outer Space Affairs (UN-OOSA) facilitated the establishment of the Centre, acting on recommendations by the UNISPACE-II (1982) Conference and the UN Committee on the Peaceful Use of Outer Space (COPUOS), endorsed by the UN General Assembly.

The Centre's headquarters is located in Dehradun, India, and its programmes are executed by staff of the Department of Space (DOS) at campuses in Dehradun, Bengaluru and Ahmedabad. These include the Indian Institute of Remote Sensing (IIRS) in Dehradun, the Space Applications Centre (SAC), the Physical Research Laboratory (PRL), both at Ahmedabad and U R Rao Satellite Centre (URSC), Bengaluru. An agreement between CSSTEAP and UN-OOSA was signed in May 1996 to formalize the affiliation of the Centre to the UN and host country agreement signed by Govt. of India in March 1998.

The mission of the Regional Centres is to establish national capabilities in developing countries to design and implement education, research and application programmes in space science

technology and applications, in particular, in the areas of (1) remote sensing & geographic information systems (RS&GIS), (2) satellite communications (SATCOM), (3) satellite meteorology & global climate (SATMET), (4) space & atmospheric sciences (SAS), (5) Global Navigation Satellite Systems (GNSS) and (6) Small Satellite Missions (SSM).

CSSTEAP conducts all of its educational programmes in close association with the DOS institutions of department of space, and thus has direct access to the physical facilities and intellectual capabilities of the institutes. In addition to providing facilities, infrastructure and skilled manpower, the Government of India, through the Department of Space, also provides most of the funding for the Centre.

Under the host country agreement, Dept. of Space has made available all facilities, infrastructure, budget and professional expertise to the Centre. The centre conducts all its educational, training and research programs at Indian Institute of Remote Sensing, Dehradun for RS&GIS course, SAC Ahmedabad for SATCOM, SATMET & GNSS courses; PRL Ahmedabad for SAS course & URSC, Bengaluru for SSM course.



## OBJECTIVES OF THE CENTRE

The Centre is an education & research institution that aims at high attainment in development & transmission of knowledge in the field of space Science & technology. The Centre aims to offer best possible education, research & applications experience to its participants in all its programmes. The principal goal of the Centre is to develop skills & knowledge of professionals working in Government, research institutions & other organizations and university faculty in the related or relevant fields. This is to be achieved through rigorous theory, practical and demonstrations, field exercises and pilot projects in those aspects of space science & technology that can enhance social & economic development in each country. These programmes aim at the development of indigenous capability for participating countries in designing & implementing space based research & application programmes.

Against this background, the major objectives of the Centre are:

- To develop the skills and knowledge of university educators, environmental research scientists and project personnel in the design, development and application of space science and technology for subsequent application in national and regional development and environment management.
- Assist educators to develop environmental and atmospheric sciences curricula that they can use to advance the knowledge of their students in their respective Institutions / Countries.
- To develop skills for satellite communications including those associated with rural development, long distance education, delivery of health services, disaster mitigation, air and maritime navigation, and network / linkage of the region's professionals and scientists.
- Assist research and application scientists for preparing space-derived information for presentation to the policy and decision makers working in national and regional development programmes.
- Enhance regional and international cooperation in space science, technology and applications programmes as envisaged in the strategy and action plan adopted under the Beijing declaration on Space Technology applications for environmentally sound and sustainable development in Asia and the Pacific.
- Assist in disseminating to the general public the value of space science and technology in improving their everyday quality of life.



SAG Ahmedabad



PRL Ahmedabad



URSC Bengaluru

# MILESTONE

1995

**Establishment of CSSTEAP**



1996

**First PG Course in RS & GIS**



1997

**First PG Course in SATCOM**



1998

**First PG Course in SATMET & SAS**



2012

**First Short Course in SSM**



2015

**First PG Course in GNSS**

2017

**First Off-campus Course**



2019

**First Webinar Series**



2020

**First Online Short Course**



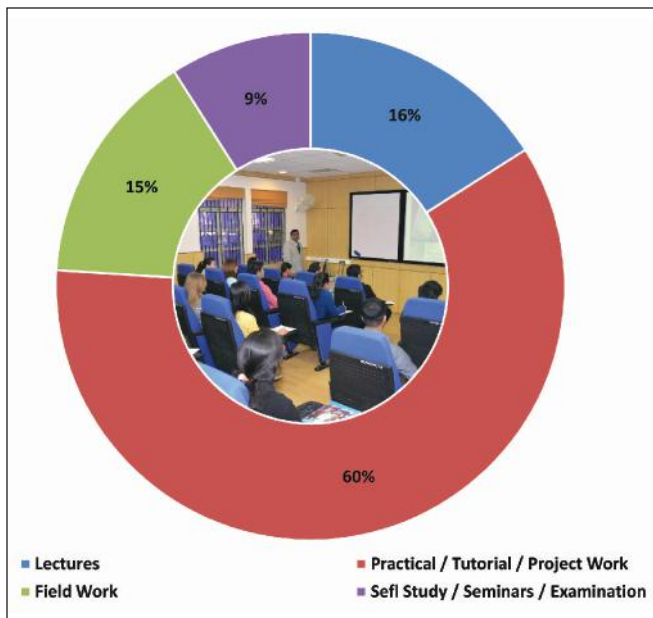
## EDUCATIONAL PROGRAMMES OF CSSTEAP

*The educational programme of the Centre is oriented towards the dissemination of knowledge in relevant aspects of space science technology and applications. The major educational and training programmes of the Centre are in the following disciplines:*

- Post Graduate (PG) course on “Remote Sensing and Geographical Information System (RS & GIS)” of nine months duration, conducted every year since 1996.
- Post Graduate (PG) course on “Satellite Communications (SATCOM)” of nine months duration, conducted every alternate odd year since 1997.
- Post Graduate (PG) course on “Satellite Meteorology and Global Climate (SATMET)” of nine months duration, conducted every even year since 1998.
- Post Graduate (PG) course on “Space and Atmospheric Science (SAS)” of nine month duration, conducted every even year since 1998.
- Post Graduate (PG) course on “Global Navigation Satellite Systems (GNSS)” of nine months duration, conducted every alternate odd year since 2015.
- Short course on “Small Satellite Missions (SSM)” of two weeks duration, conducted every year since 2012.
- Short course on “Navigation and Satellite Positioning System (NAVSAT)”.
- Short courses conducted every year on one of the theme-Geospatial, image Processing & RS technology, Disaster Risk Reduction & management, Coastal & Terrestrial Ecosystem, Natural Resource Management, Infrastructure, Climate Change Studies, etc.
- Short course/ Workshops on a theme on SATCOM, SATMET & SAS disciplines.
- Short courses, workshops and awareness seminars for scientists, technologists, teachers, policy-makers, decision-makers, planners, etc.
- In addition to above, Centre also organizes user demand short courses from Governing Board countries/organizations, UNESCAP, UNSPIDER, IWMI and other agencies.

The Post Graduate (PG) Courses of the CSSTEAP are organized in two phases. First phase (core modules) is organized in India, where the main emphasis is on the development and enhancement of the knowledge and skills of university educators, researchers and application scientists. Core modules include 3 modules. The modules are devised towards learning of fundamentals, and advance concepts, assignments, practical exercises on case studies, field work, instrumentations and practical. Average breakup of





**Total Hours: 1200+60 (Exams)**

**Figure 1:** Course organization-Percentage of time spent for various activities

time for various activities is mentioned in figure 1. Teaching methods include classroom lectures, computer assisted practical/assignments and demonstrations, laboratory experiments, group

discussions, seminars and field work/case studies (as applicable). Lecture, practical and reading course material is provided to the students. The third module is oriented towards executing a pilot project enabling student to apply the knowledge gained during the course under expert supervision from host institution.

The second phase is continued in home country of the respective participant, where research project for scholars to conduct and execute projects in their respective countries with a view to transfer the technology to the next level of persons. It will also be a test of the methodology assimilated during first phase in India. Andhra University (Estd. 1926), Visakhapatnam, India award M.Tech. degrees to those eligible as per the norms of the Andhra University after successfully completing the CSSTEAP Course (first and second phases).

*A set of standard curricula developed by UN OOSA and updated & revised by CSSTEAP from time to time is adopted for the educational programmes of CSSTEAP.*



## MAJOR ACHIEVEMENTS OF THE CSSTEAP

The CSSTEAP started its first Post Graduate Diploma (PG) Course in 1996. Since then the centre has conducted 61 PG courses and 60 short courses. Total 2394 participants from 56 countries (including 20 countries outside Asia-Pacific) have been benefitted by these courses. Figure 2 & 3 shows total participants of PG and Short courses since 1996.

**Regular PG Courses:** During the past 25 years, 61 Post Graduate educational courses (RS & GIS, SATCOM, SATMET, SAS, and GNSS) have been successfully conducted. Total number of courses, country participation and number of participants in RS&GIS, SATCOM, SATMET, SAS and GNSS PG courses are shown in Figure 2. The details of country wise participation in PG Courses are given in Figure 5.

**Short-term Courses:** CSSTEAP has been organizing short courses on recent and advanced technological & its applications. In the last 25 years, 60 short courses/workshops/webinar on various themes have been conducted. The distribution of short courses, participating countries and number of students in RS&GIS, SATCOM, SATMET, SAS, NAVSAT and SSM related short courses are shown in Figure 3 & 6.

**Other contribution:** Since, year 1995, till date Department of Space has provided budget for CSSTEAP academic, research, international travel support, monthly fellowships & other and administrative expenses of students. Centre has started new short courses in areas of Space science technology & applications, more fellowships to undergo M.Tech research studies, demand based thematic short courses, UN advisory missions meetings and alumni meets. During this period

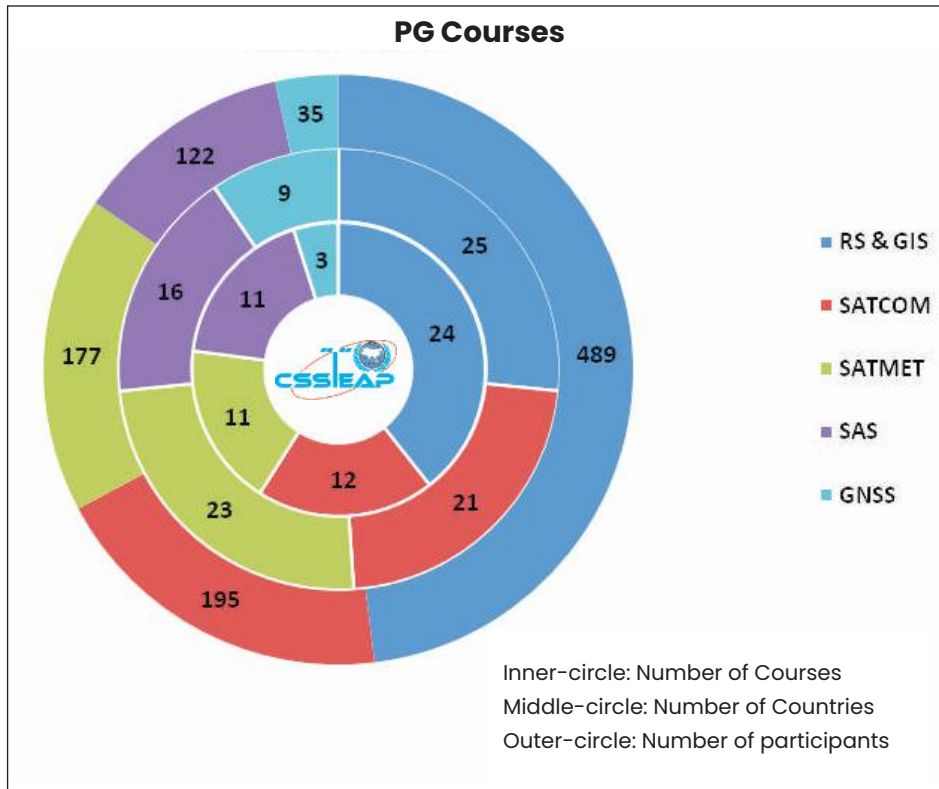
there has been upgradation in infrastructural, hostel, classroom, technical, laboratory, instrumental and computing facilities in respective host institutions.

### International Recognition

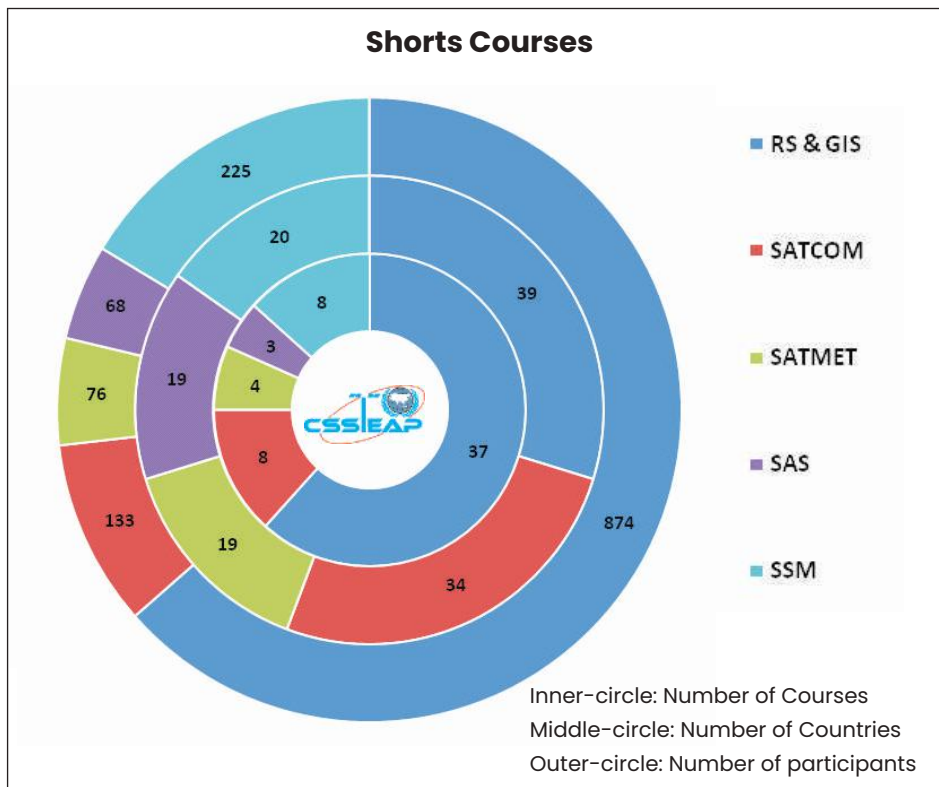
CSSTEAP has International Collaboration with following institutions:

- University of Twente (ITC, Netherlands): An agreement has been signed between International Institute for Geo-Information Science and Earth Observation (ITC), The Netherlands and Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) for exemption for PG diploma holders of the CSSTEAP "Post Graduate Course in Remote Sensing and Geographic Information System". All PG diploma holders of the CSSTEAP RS&GIS course can get exemptions for two or more modules of the ITC Postgraduate Diploma, Master degree or MSc. degree courses.
- University of Illinois, USA: An agreement was signed to establish a cooperative relationship through mutual assistance in the areas of education and research including joint educational, cultural and research activities; exchange of faculty members & advanced graduate students for research, lectures, and discussions; participation in seminars and academic meetings.
- Andhra University, Visakhapatnam: For recognition of CSSTEAP PG courses with one year research work thesis for the award of M.Tech degree subject to the academic requirement and other qualifications.





**Figure 2:** Summary of PG courses conducted since 1995



**Figure 3:** Summary of Short courses conducted since 1995

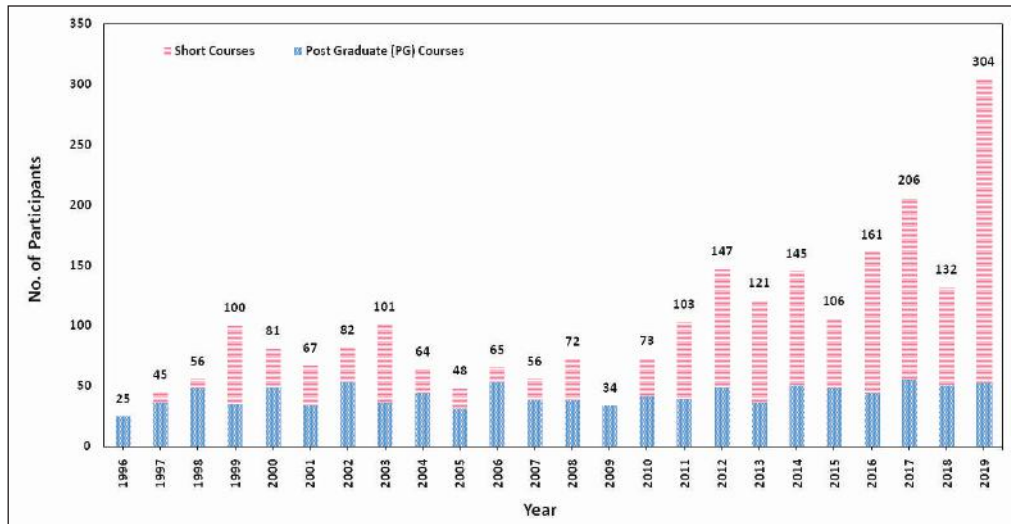


Figure 4: Year-wise participation in PG and Short courses

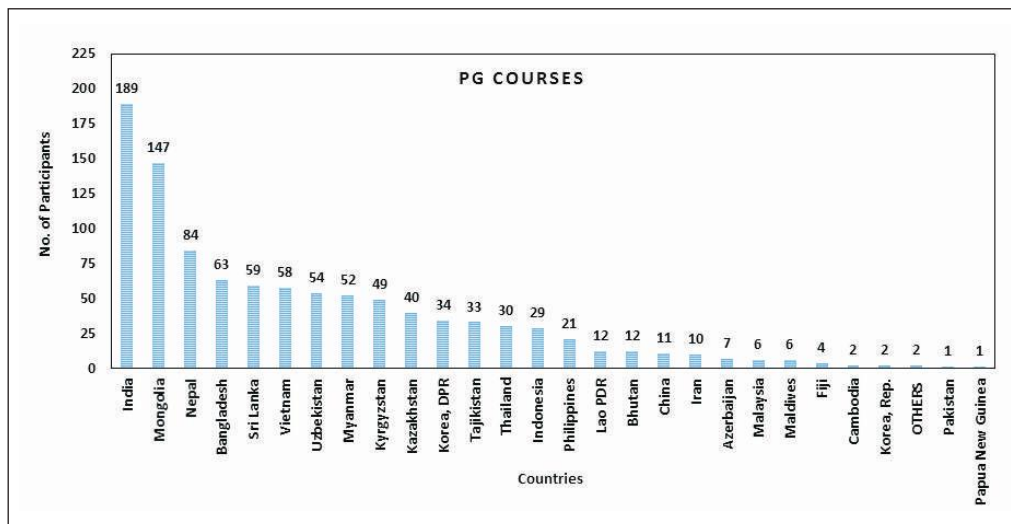


Figure 5: Country-wise participation in PG courses

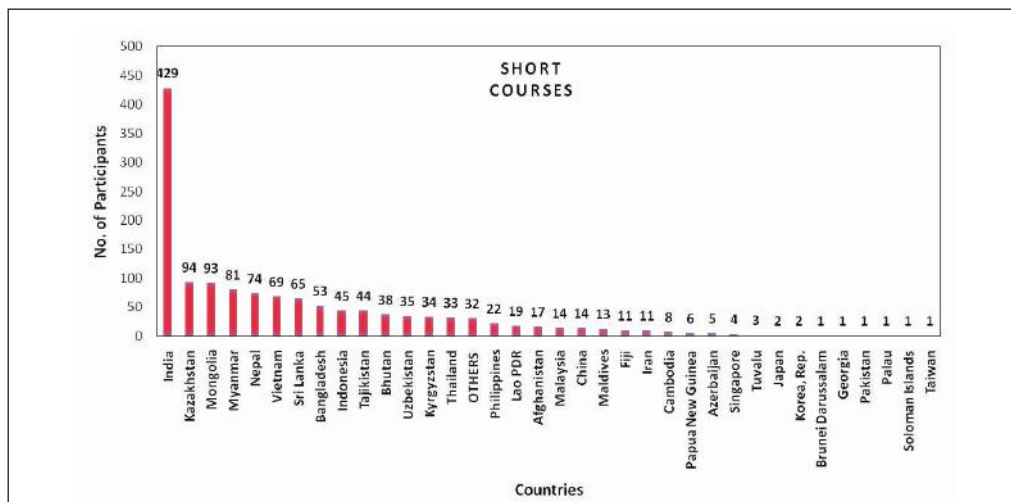


Figure 6: Country-wise participation in Short courses

# SHORT COURSES

## SUMMARY

Year	Course title
<b>1. Short Course on Remote Sensing and GIS</b>	
1999	International short course in Digital image processing for environmental management
1999	ITTO, JOFCA
2000	International short course on RS & GIS - Technology and Applications in Natural Resources and Environmental management
2001	International short course on RS & GIS - Technology and Applications in Natural Resources and Environmental management
2002	International short course on Geoinformatics for Disaster Management
2003	International short course on Geoinformatics for Biodiversity Assessment
2003	WMO workshop on Satellite Remote Sensing and GIS Applications in Agricultural Meteorology
2004	International short course on Geoinformatics for Disaster Management
2005	International short course in RS & GIS Applications in Sustainable Agriculture
2006	International Training Course on Remote Sensing & GIS Applications in Urban Studies
2007	International Training Course on Application of Space Technology for Disaster Management Support with Emphasis on Flood Risk Management
2008	International Training Course on Application of Space Technology for Disaster Management Support with Emphasis on Drought Monitoring, Desertification & Crop Yield Prediction
2010	Special Course on High Resolution Aerospace Image Analysis For Geo-Hazard Assessment
2010	International Training Course on Application of Space Technology For Disaster Management Support with emphasis on Geological Risk Mitigation
2011	International Training Course on Microwave Remote Sensing and its Applications
2011	Workshop on OSGEO Spatial Tools
2011	Short Training Course on Remote Sensing and GIS Applications for Coastal Hazard Mitigation and Sustainable Development for Pacific Countries



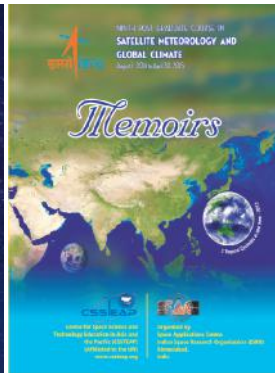
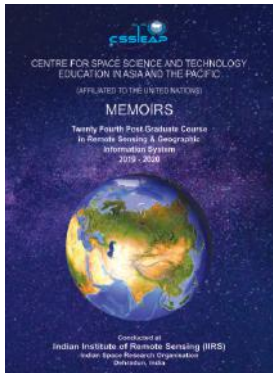
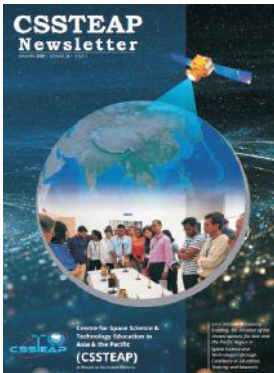
Year	Course title
2012	Workshop on OSGEO Spatial Tools
2012	International Training Course on Application of Space Technology for Disaster Risk Reduction
2013	International Training Course on Hyperspectral Remote Sensing and Its Applications
2013	International Training Course on Flood Risk Mapping, Modeling and Assessment using Space Technology
2013	Training on "Development of Geo-referenced Information System for Disaster Risk Management"
2014	Microwave Remote Sensing (SAR) & Its Applications
2014	SAARC Regional Training Programme on GIS & RS Technology in Disaster Risk & Emergency Management in South Asia
2014	Expert Group Meeting & Specialized Training on Disaster Rapid Impact Assessment Using Space-Based Information
2015	Disaster Response & Recovery Preparedness
2015	Geospatial Technologies for Coastal & Marine Disaster Management & Climate Change
2016	Weather Forecasting using Numerical Prediction Models
2016	Advances in Geospatial Tools in Forestry & Ecology Applications
2016	Disaster Damage and Loss Assessment in Natural Heritage and Cultural Sites using Geospatial Techniques
2017	Lidar Remote Sensing and its Applications
2017	UAV Remote Sensing and its Application
2017	Special Off Campus Course in Myanmar on Post Disaster (Earthquake) Rapid Damage Assessment
2018	Geospatial Modelling in Forestry and Ecology for Climate Change Response Studies
2018	Disaster Risk Reduction (DRR) with Special Emphasis on Floods and Earthquakes
2019	Short course on Geospatial Technologies for Disaster Risk Reduction (DRR) with Special emphasis to Floods and Forest Fires
2019	Webinar Series on Application of Remote Sensing in Hydro Meteorological and Geological Disasters



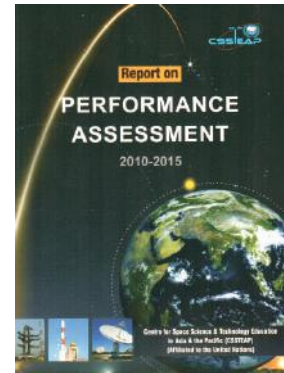
Year	Course title
<b>2. Short Course on Space and Atmospheric Science</b>	
2003	Workshop on Data Processing from the Chandra and XMM-Newton Space Missions
2016	SPACE WETAHER
2019	Short Course on Space Weather
<b>3. Short Course on Satellite Communication</b>	
1997	SATCOM Workshop
1999	Digital Signal Processing (DSP)
2000	Application of Satcom for Development
2001	Application of Space Science & technology for Social Scientist
2008	International Training Course on Satellite Navigation & Location Based Services
2012	Navigation and Satellite Positioning System (NAVSAT)
2013	Navigation and Satellite Positioning System (NAVSAT)
2014	Navigation and Satellite Positioning System (NAVSAT)
<b>4. Short Course on Satellite Meteorology</b>	
1998	Workshop in Emerging Trends in Satellite Meteorology : Technology & Applications
2002	Workshop in Emerging trends in Satellite Meteorological Applications with special emphasis on MW RS
2017	Weather Forecasting using Numerical Weather Prediction Models
2019	Short Course on Weather Forecasting using Numerical Weather Prediction Models
<b>5. International Training Course on Small Satellite Missions</b>	
2012	International Training Course on Small Satellite Missions
2013	International Training Course on Small Satellite Missions
2014	International Training Course on Small Satellite Missions
2015	International Training Course on Small Satellite Missions
2016	International Training Course on Small Satellite Missions
2017	International Training Course on Small Satellite Missions
2018	International Training Course on Small Satellite Missions
2019	International Training Course on Small Satellite Missions

# PUBLICATIONS OF CSSTEAP

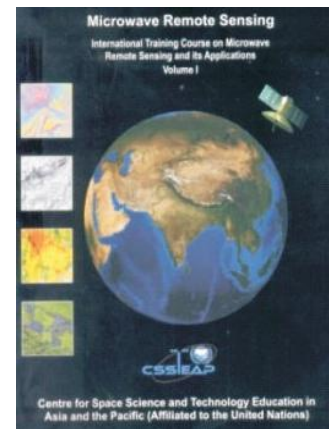
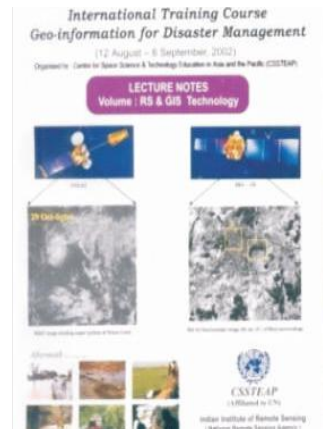
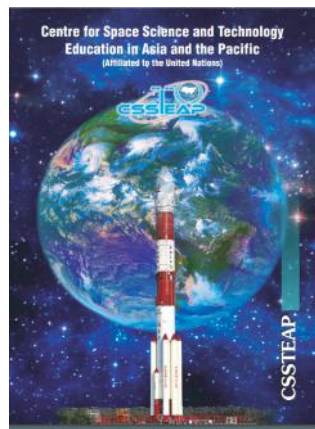
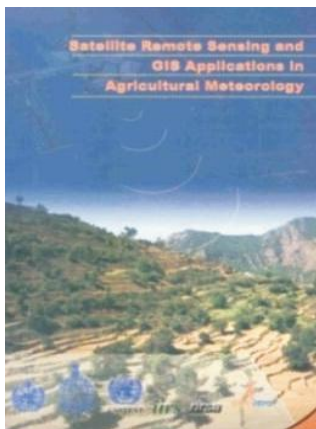
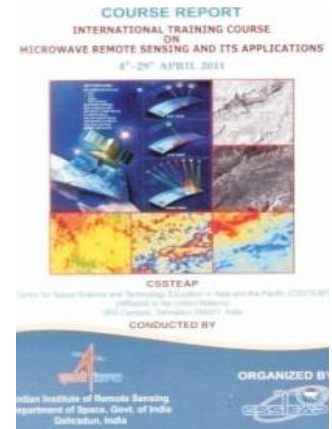
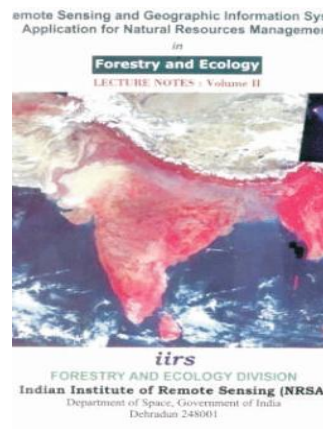
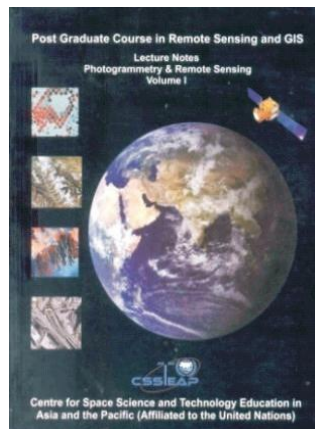
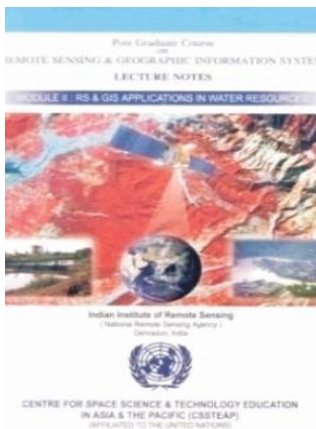
## ANNUAL



## 5 YEARLY



## OTHER



# FACILITIES AT CSSTEAP





6



7



8



9



10



11

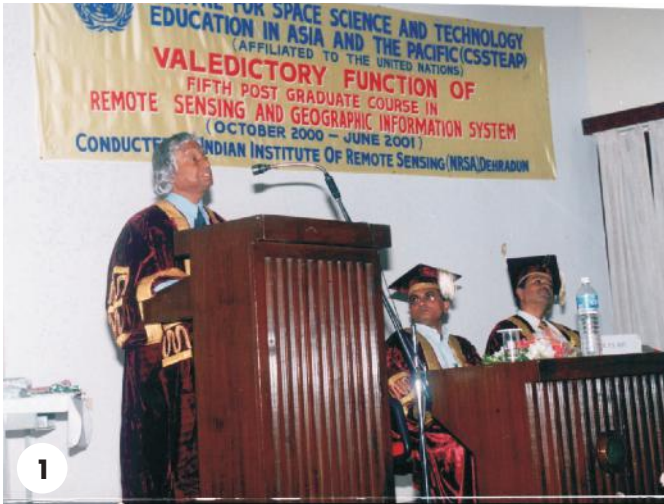


12

- 1 : CSSTEAP Hostel at Bopal, Ahmedabad
- 2 & 11 : Sports and recreation
- 3, 4 & 6 : Student carrying out Practical
- 5 : CSSTEAP Hostel Dehradun
- 7 : Seminar Presentation
- 8 & 9 : Students attending classes
- 10 & 12 : Practical demonstration



# VISIT OF DIGNITARIES









- 1 : Dr. A. P. J. Kalam during 5th RS&GIS Valedictory function
- 2 : Visit of Dr. Adigen Abiodeen of UN-OOSA
- 3 : Visit of Dr. Tania Maria leading Latin American Delegation
- 4 : Mr. Jean-Pol Poncelet, Mr. Giuseppe Giampalmo and Mr. Karl Bergquist of ESA visiting CSSTEAP Hqrs.
- 5 : Prof. Hans Joachim Haubold, Senior Programme Officer, UNOOSA, chief guest at short course in SAC
- 6 : Dr. Sergio Camacho during 3rd AC Meeting
- 7 : Visit of Chinese Delegation from CNSA
- 8 : Mr. Victor Kotelnikov of UNOOSA during 4<sup>th</sup> AC Meeting
- 9 : Visit of Australian Delegation
- 10&23 : Visit of Philippines Ambassador H.E. (Mrs.) Ma. Teresita C. Daza
- 11 : Visit of Prof. Y. S. Rajan Distinguished Professor, ISRO
- 12 : Visit of Bangladesh Delegation
- 13 : Dr. K. Kasturirangan, Former Chairman ISRO as Chief Guest during Valedictory Function of SATMET & SAS-1
- 14 : Dr. U.R. Rao Chairman, PRL and Former Chairman, ISRO as the Chief Guest of 19th RS&GIS Valedictory Function
- 15 : Dr. K. Radhakrishnan, Chairman ISRO & Chairman, CSSTEAP GB as Chief Guest during Valedictory Function of RS&GIS course
- 16 : Dr. Simonetta Di Pippo, Director, UNOOSA participating in 22<sup>nd</sup> CSSTEAP GB meeting
- 17&24 : Dr. K. Sivan, Chairman ISRO and CSSTEAP GB visited CSSTEAP Hqrs.
- 18 : Shri Umamaheswari, R, Scientific Secretary ISRO visited CSSTEAP Hqrs.
- 19&25 : Dr. Keran Wang, Chief, Space Applications Section (SAS), (IDD), UN ESCAP, Bangkok visited CSSTEAP Hqrs.
- 20 : Chinese Delegation's visit to CSSTEAP Hqrs.
- 21 : Prof. MGK Menon, Vikram Sarabhai Distinguished Prof. visited CSSTEAP
- 22 : Delegation from CNSA and Beihang University visited CSSTEAP

# ALUMNI FEEDBACK



**Rakhmatilla uulu Zarylbek**

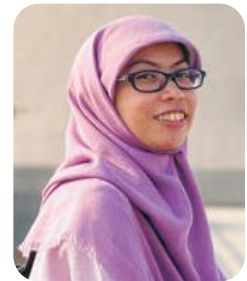
Kyrgyzstan

*This course is very helpful and interactive for us and, we learned so many good things. CSSTEAP gave us out of box experience in learning new things. I would like to thank CSSTEAP and IIRS, especially Director, CSSTEAP. I learned so many new things about RS and GIS it will be very helpful in future and I will try to share this knowledge with my colleagues. We stayed here for 9 months and it was good experience, enjoyed the foods, travel and the culture.*

**Ms. Rise Hapshary Surayuda**

Indonesia

*The 9-month GNSS course helps me build my understanding about GNSS from the very basic theory to its vast and various applications. This will benefit me to use the knowledge for GNSS technology development in my country. Big gratitude and respect to ISRO experts and guest lecturers from other institutions who shared their time, knowledge and expertise during the course, and of course to CSSTEAP team who supported all participants along the way.*



**Mr. Sudhir Kumar Sharma**

Nepal Telecom, Nepal

*SATCOM course are very useful for us in Nepal Telecom Sector. It is helping me to work in communication system areas. It is also very interesting course and I am very happy to know about Satellite and Space. During 9 month of course, I did not face any problem in CSSTEAP hostel nor CSSTEAP Canteen and ISRO SATCOM class management. Everything was satisfactory.*

**Ms. Chathuri Nisansala**

Colombo, SriLanka

*I enjoyed the stay in CSSTEAP, India. Thanks for the wonderful opportunity. This was my first experience in remote sensing technology applications and it was very enriching experience. Thanks to all the faculties.*



**Md. Shah Alam**

Bangladesh

*I am very cheerful to being a part of this team. This course is very helpful for my professional life. I have learned many more new topic about SATCOM. The lab facilities are very modern. CSSTEAP and the relevant person are very cordial with domestic and foreign student. Wish a bright future for CSSTEAP.*



**Ms. Nadiya Yagfarova**

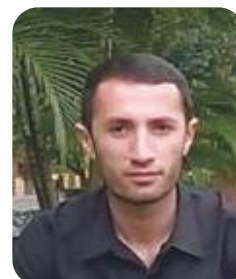
Almaty, Kazakhstan

*I want to convey my big thanks to every person who came in touch during this 9 months course. It was truly a great opportunity for being part of this course and will definitely remember 9 months stay for rest of my life.*

**Mr. Rahimov Foteh**

Tajikistan

*I am grateful to CSSTEAP for providing us with very useful course which equipped me with intensive knowledge, advanced techniques and skills of RS and GIS application for various disciplines. The course is beneficial for me and my country.*



**Ms. Otgonbayar Lkhagva**

Mongolia

*I would like to thank CSSTEAP as well as IIRS for giving me opportunity to undertake the RS & GIS PG diploma course. I am so happy to get a lot of experience in IIRS. Thanks to all faculties.*

**Mr. Nicholas Ting**

Suva, Fiji Islands

*Though I have been new to the area of Remote Sensing and GIS but what I have gained in CSSTEAP will be useful for rest of my life. I am thankful to CSSTEAP and IIRS.*



**Gautam**

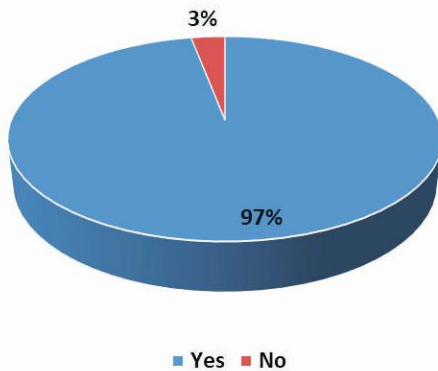
Bhutan

*My name is Gautam Thapa, 24th batch (2019-2020) CSSTEAP participant from Bhutan. I work as a consulting engineer in my country. The PG Diploma course offered in CSSTEAP, IIRS Dehradun is one of the most career oriented tailored course in the field of Remote Sensing and GIS. IIRS in a beautiful institute in a green environmental setting and spending nine months of course duration has been both academically and professionally an enriching experience.*

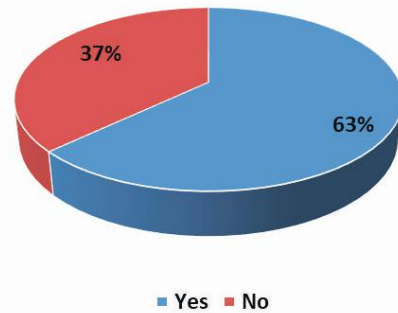
## FEEDBACK ANALYSIS

An alumni feedback survey was conducted through a customized questionnaire feedback form. About 155 alumni's participated in the survey and gave their feedbacks.

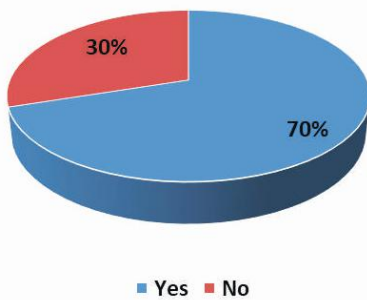
Has the course at CSSTEAP benefited in your carrier



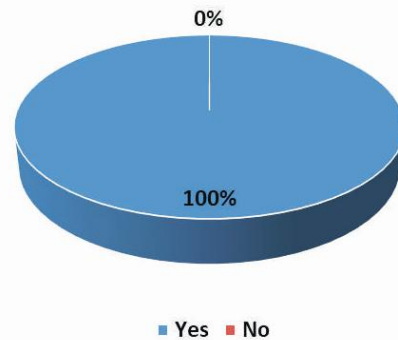
Has the technical knowledge gained at CSSTEAP helped you in your promotions



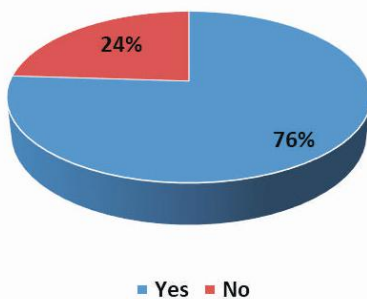
Were you able to initiate any project in your organization using CSSTEAP knowledge



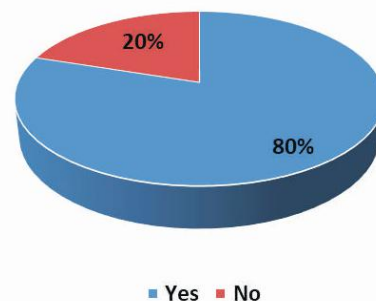
Did you recommend CSSTEAP courses after attending the program to other colleagues in country/department



Are you interested to attend lectures on special topics through webinar



Do yo recommend alumni meets to be hosted at your country



# CHAIRMAN CSSTEAP GOVERNING BOARD (Since 1995)



**Dr. K. Kasturirangan**  
November 1995 - August 2003



**Sri G. Madhavan Nair**  
September 2003 - October 2009



**Dr. K. Radhakrishnan**  
October 2009 - December 2014



**Dr. A.S. Kiran Kumar**  
January 2015 - January 2018



**Dr. K. Sivan**  
January 2018 - till date



# DIRECTOR CSSTEAP (Since 1995)



**Prof. B.L. Deekshatulu**

November 1995 - April 2002



**Prof. Karl Harmsen**

April 2002 - September 2005



**Dr. V.K. Dadhwal**

September 2005 - December 2006  
December 2009 - July 2010



**Dr. George Joseph**

December 2006 - December 2009



**Dr. P.S. Roy**

July 2010 - August 2012



**Dr. Y.V.N. Krishna Murthy**

December 2012 - December 2015



**Dr. A. Senthil Kumar**

January 2016 - March 2020

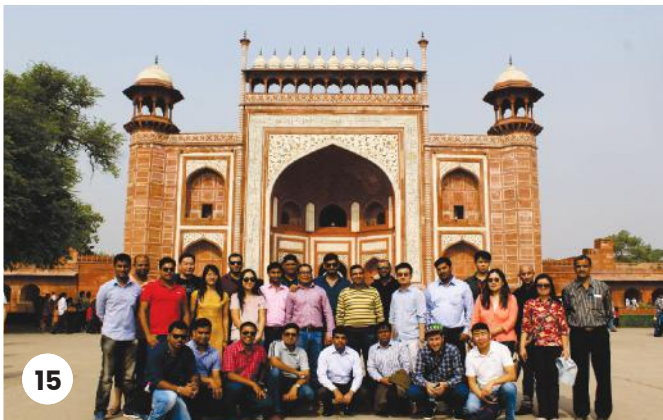
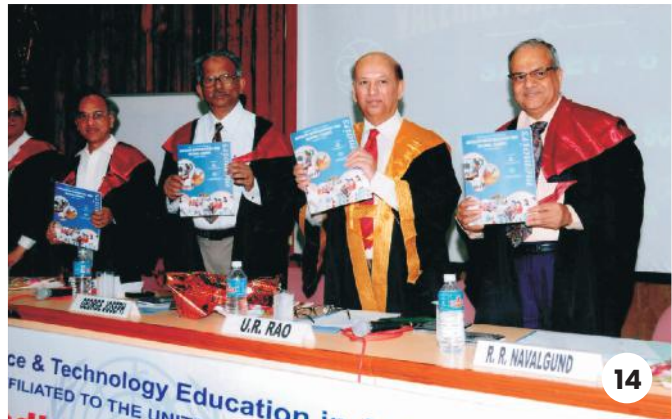


**Dr. Prakash Chauhan**

April 2020 - Till date

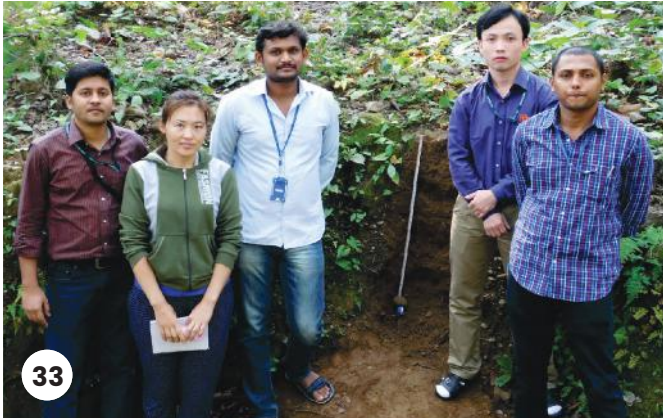
# Glimpses













41



42



44



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- 1 : Inaugural Function of 1st International Training on Small Satellite Missions
- 2 : Valedictory Function of 10th SATCOM and 1st GNSS PG Course
- 3 : Group Photograph of Short course on Space Weather at PRL, Ahmedabad
- 4 : Valedictory Function of 8th International Training on Small Satellite Mission at IIRS, Dehradun
- 5 : 24th RS&GIS PG Course participants with Dr. R. R. Navalgund
- 6 : Valedictory function of 23rd RS&GIS course
- 7 : Valedictory Function of 19th RS&GIS Course
- 8 : WMO workshop on Satellite Remote Sensing and GIS Applications in Agricultural Meteorology
- 9 : Conference on Satellite for SAARC Region and Space Technology applications
- 10 : Dr. A.P.J. Abdul Kalam, former President during valedictory function of 5th RS&GIS Course
- 11 & 12 : Dr. G. Madhvan Nair, Chairman ISRO and CSSTEAP GB, releasing the memoirs and distributing certificates to participants during the valedictory function of 11th RS&GIS Course
- 13 : Inaugural Function of 11th RS&GIS PG Course
- 14 : Dr. U.R. Rao releasing memoirs for 6th SATMET and SAS Courses
- 15 : Students during their tour to Agra
- 16 : Alumni meet at Colombo, Srilanka
- 17 : Visit to SHAR
- 18 : Visit of Participants to Ooty
- 19 : Visit of Dr. Prakash Chauhan, Directors CSSTEAP to UN, Vienna
- 20 : Off campus Training in Myanmar
- 21 : Participants at NRSC, Hyderabad
- 22 : Participants during survey practical
- 23 : Participants at ISEA Conference at PRL, Ahmedabad
- 24 : Celebration of Republic Day at PRL, Ahmedabad
- 25 : Celebration of Holi
- 26 : Field visit of CSSTEAP participants
- 27 : Dr. George Joseph with CSSTEAP Participants
- 28 : Alumni Meet at Nepal
- 29 : Participants during their visit to International Kite Festival
- 30 : Garba Celebrations at SAC, Ahmedabad
- 31 : Participants visit for Rocket launch demonstration
- 32 : Visit to SAC, Ahmedabad
- 33 : Field visit of Participants
- 34 : Visit to Doppler Weather Radar Station, Viskhapatnam
- 35 : Field exercise of participants
- 36 : Cultural activity by CSSTEAP participant
- 37 : Diwali celebrations
- 38 : Participants during the 38th Asian Conference on Remote Sensing at New Delhi
- 39 : Participants during field exercise
- 40 : Participants celebrating Independence Day
- 41&42 : CSSTEAP's 10 years Commemoration function
- 43 : 23rd GB meeting of CSSTEAP
- 44 : Visit to Qutub Minar
- 45 : 13th Advisory committee meeting
- 46 : 24th GB meeting of CSSTEAP







# HOST INSTITUTES

## **Indian Institute of Remote Sensing**

4, Kalidas Road

Dehradun-248001, Uttarakhand

Email: [director@iirs.gov.in](mailto:director@iirs.gov.in)

Website: [www.iirs.gov.in](http://www.iirs.gov.in)

## **Space Applications Centre**

Ambawadi Vistar

P.O. Jodhpur Tekra

Ahmedabad-380015, Gujarat

E-mail: [director@sac.gov.in](mailto:director@sac.gov.in)

Website: [www.sac.gov.in](http://www.sac.gov.in)

## **Physical Research Laboratory**

University Area, Navrangpura

Ahmedabad-380009, Gujarat

E-mail: [director@prl.res.in](mailto:director@prl.res.in)

Website: [www.prl.res.in](http://www.prl.res.in)

## **U. R. Rao Satellite Centre**

Vimanpura Post

Bengaluru-560017

E-mail: [director@ursc.gov.in](mailto:director@ursc.gov.in)

Website: [www.ursc.gov.in](http://www.ursc.gov.in)

# **CSSTEAP Headquarters**

IIRS Campus, 4, Kalidas Road, Dehradun-248 001, INDIA  
Ph: 91-135- 2740737, 2740787, Fax: +91 - 135 - 2740785  
E-mail: [cssteap@iirs.gov.in](mailto:cssteap@iirs.gov.in), Website: [www.cssteap.org](http://www.cssteap.org)