UN Office for Outer Space Affairs:

UN-affiliated Regional Centres for Space Science and Technology Education

Space Tools for Monitoring Air Pollution and Energy Use for Sustainable Development

UN/Austria/ESA Symposium
Graz, Austria
12-15 September 2006
Regional Centres for Space Science and Technology Education affiliated to the United Nations

- The Regional Centres for Space Science and Technology Education were created under the auspices of the United Nations through its Office for Outer Space Affairs (UNOOSA).

- The goal of the Centres is to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines of Remote Sensing and Geographical Information Systems, Satellite Communications, Satellite Meteorology and Global Climate, and Space and Atmospheric Sciences as well as data management.

- Regional Centres located in:
  - African region: CRASTE-LF (Morocco), CSSTE-E (Nigeria)
  - Asia and Pacific region: CSSTEAP (India)
  - Latin America and the Caribbean: CRECTEALC (Brazil and Mexico)
Regional Centres for Space Science and Technology Education
(affiliated to the United Nations)

- Latin America and the Caribbean: Brazil (CRECTEALC), Mexico (CRECTEALC)
- Africa: Morocco (CRASTE-LF), Nigeria (ARCSSTE-E)
- Asia and the Pacific: India (CSSTEAP)
Education curricula

- The United Nations Programme on Space Applications, with the support of prominent educators, developed a set of standard curricula to be adopted by the centres for each topic of the core disciplines.
Centre for Space Science and Technology Education in the Asia and Pacific region (CSSTEAP)

- CSSTEAP is located at Dehradun on the campus of the Indian Institute of Remote Sensing (IIRS). The Centre also has two operational offices at Ahmedabad on the campus of Space Applications Centre (SAC) and at Physical Research Laboratory (PRL).
CSSTEAP Linkages

India:
- DOS/ISRO Host Institutions & other institutions
- Andhra University – Recognition of PGD curricula to meet course-work requirement of Mtech
- GOI Organisations for international student travel support
- Academic Linkage with Universities/Institutes for Guest Faculty

International:
- UN Agencies including UNOOSA, UNESCO, UNDP, WMO – fellowships / travel support/ sponsor short courses
- International Centres (ICIMOD, TWAS, GDTA*) – Student sponsorship/ exchange
- Universities / Institutes: Guest Faculty (US, UK, Europe...
# CSSTEAP Post-graduate student statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Participants from:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RS &amp; GIS</td>
<td></td>
</tr>
<tr>
<td>1996-97</td>
<td>25 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>1997-98</td>
<td>23 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>1998-99</td>
<td>21 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>1999-2000</td>
<td>17 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2000-2001</td>
<td>19 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2001-2002</td>
<td>20 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2002-2003</td>
<td>23 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2003-2004</td>
<td>21 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2004-2005</td>
<td>20 students</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td>2005-2006</td>
<td>19 students*</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
</tr>
<tr>
<td></td>
<td>12 students*</td>
<td>Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, DPR Korea, Fiji, India, Indonesia, Iran, Japan, Korea, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua N.G, Philippines, Sri Lanka, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam</td>
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CSSTEAP Course record

- The Centre has conducted 23 nine-month Post-graduate courses:
  - 10 courses in RS and GIS
  - 5 courses in SATCOM
  - 4 courses in SATMET
  - 4 courses in Space Science

- The Centre has also conducted 16 short-term courses/workshops and awareness programmes

- These programs have benefited 596 participants from 30 countries in the Asia-Pacific region (360 in long-term courses and 236 in short-term courses & workshops)

- In addition, 26 participants from 16 countries outside Asia-Pacific region have been trained at CSSTEAP
CSSTEAP web-site

CSSTEAP homepage: http://www.cssteap.org/
African Centre for Space Science and Technology - in French Language (CRASTE-LF)

- CRASTE-LF is located at the L’Ecole Mohammadia D’Ingenieurs in Rabat, Morocco.
CRASTE-LF Course record

- The Centre has conducted 8 nine-month Post-graduate courses:
  - 4 courses in RS and GIS
  - 2 courses in SATCOM
  - 2 courses in SATMET

- The Centre has also conducted 10 workshops

- These long-term programmes have benefited 80 participants from 16 countries in the African region
CRASTE-LF web-site

CRASTE-LF homepage:
http://www.unoosa.org/oosa/SAP/centres/morocco/index.html
African Regional Centre for Space Science and Technology Education - in English Language (CSSTE-E)

- CSSTE-E is located at the Obafemi Awolowo University in Ile-Ife, Nigeria.
CSSTE-E Course record

- The Centre has conducted 7 nine-month Post-graduate courses:
  - 2 courses in RS and GIS (since 1999)
  - 2 courses in SATCOM (since 2000)
  - 2 courses in SATMET (since 2001)
  - 1 course in Space Science (since 2005)

- The Centre has also conducted 8 short-term courses/workshops and seminars

- These programs have benefited 30 participants from 9 countries in the African region.
CSSTE-E web-site

ARCSSTE-E homepage:
http://www.arcsstee.org/
Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC)

- The Brazil campus of CRECTEALC is located in São José dos Campos, São Paulo. It is hosted by the National Institute of Space Research (INPE).
CRECTEALC Administration

CAMPI:

- The Campi are responsible for the planning, the organization, the implementation and the administration of education programmes in the areas concerning the competence of the Centre.
- There are two campus located in:
  - **Brazil**
    - Host institution: National Space Research Institute – INPE São José dos Campos, São Paulo, Brazil
  - **Mexico**
    - Host institution: National Institute for Astrophysics, Optics and Electronics – INAOE Tonantzintla, Puebla, Mexico
CRECTEALC Support

- Foreign Relations Ministry of Brazil – MRE
- Foreign Relations Secretary of Mexico – SRE
- Brazilian Space Agency – AEB
- National Institute for Space Research – INPE/MCT
- National Institute of Astrophysics, Optics and Electronics – INAOE
- National Council for Science and Technology – CONACYT
- National Council for Scientific and Technological Development – CNPq/MCT
- University of the United Nations – UNU
- United Nations Office of Outer Space Affairs – UN OOSA
- Organization of the American States – OAS
CRECTEALC International Course on RS&GIS

- From 1985 to 2002, the 7-month Course was promoted under the responsibility of the National Institute for Space Research - INPE of the Ministry of Science and Technology-MCT of Brazil.

- From 2003 to 2005, 36 students have graduated from this course under the coordination of the CRECTEALC/Campus Brazil. This year, 7 students should graduate and the total will reach 43 students.

- Up to December 2006 the Course will form 189 specialists from Algeria, Argentine, Bolivia, Brazil, Burkina Faso, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Ethiopia, Ghana, Honduras, Kenya, Mexico, Panama, Paraguay, Peru, Nigeria, Senegal, Uruguay and Venezuela.
CRECTEALC 9-month post-graduate course in RS & GIS

- CRECTEALC (Campus Brazil) has conducted 2 nine-month Post-graduate courses: in RS & GIS.
  - 25 students from 10 countries from the region participated.

- The CRECTEALC (Campus Brazil) has also promoted 4 workshops on RS & GIS.

- THE CRECTEALC (Campus Mexico) is organizing its first post graduate course in RS & GIS to be carried out at the premises of the National Institute of Optical and Electronic Astrophysics in Tonantzintla, Puebla, Mexico, where the Center is headquartered.
CRECTEALC web-site

CRECTEALC homepage:
http://www.inpe.br/unidades/cep/atividadescep/crectealc
In 2005, the UN GA, in its resolution 60/99

“Notes with satisfaction that, …, the African regional centres …, in the French language and in the English language, located in Morocco and Nigeria, respectively, as well as the regional centre … in Asia and the Pacific and the regional centre … for Latin America and the Caribbean, entered into an affiliation agreement with the Office … of the Secretariat and have continued their education Programmes in 2005; “

“Agrees that the regional centres referred to in [the] paragraph Above should continue to report to the Committee on their activities on an annual basis;
Notes with satisfaction that the centre … in Asia and the Pacific celebrated its tenth anniversary in 2005.”
THANK YOU

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