# Workshop on Integrated Space Technologies Applications for Sustainable Development in the Mountain Regions of Andean Countries

Organized by United Nations Office for Outer Space Affairs, and Comision Nacional de Investigacion y Desarrollo (CONIDA) on behalf of the Government of Peru.

Lima, 14-18 September 2009

## OUTLINE PROGRAMME

### Monday, 14 September 2009 OPENING SESSION

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>9:00 – 10:00</td>
<td>Registration  &lt;br&gt; Opening session (10’ presentation)  &lt;br&gt; Victor Kotelnikov, Office for Outer Space Affairs, United Nations  &lt;br&gt; Juan Felix Enrique Pasco Barriga, Director General, CONIDA  &lt;br&gt; Miguel Saravia, CONDESAN  &lt;br&gt; Jean Charles Bigot, ESA  &lt;br&gt; Natalia Archinard, Switzerland  &lt;br&gt; CONIDA : Organizational matters</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Coffee Break</td>
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### SESSION I ANDEAN REGION: GENESIS & SPACE TECHNOLOGY: FROM MENDOZA TO LIMA

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<tr>
<td>10:30 – 12:15</td>
<td>Keynote Presentations (7x 15’ presentation)  &lt;br&gt; Chairperson: P.C. Sandei  &lt;br&gt; 1. Keynote address: An overview of the tropical Andes M. Saravia (CONDESAN)  &lt;br&gt; 2. Partnerships for Monitoring Global Changes in Mountain Regions P.C. Sandei (UNEP)  &lt;br&gt; 3. The EO and applications in Mountains Regions F. Sarti (ESA)  &lt;br&gt; 4. Andean Region Cooperation related to Mountains F. Menicoci (CONAE)  &lt;br&gt; 5. CONIDA presentation Representative of CONIDA  &lt;br&gt; 6. Monitoring of particulate matter with satellite data and his effects on health in the mountain region of the Alps M. Petitta (EURAC)  &lt;br&gt; 7. Statement Amb. Ciro Arrevalo (COPUOS Chairman)</td>
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<td>12:15 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00 – 14:30</td>
<td>Keynote Presentations (2x 15’ presentation)  &lt;br&gt; Chairperson: F. Sarti  &lt;br&gt; 7. Spot Image and applications (Spot Image, Peru)  &lt;br&gt; 8. HimalAndes Initiative A. M. Ponce  &lt;br&gt; Geographical information systems as a tool for agricultural and natural resources science A. Jarvis (CIAT)  &lt;br&gt; Access to spatial technology from periferal provinieses M. Guzman, (UGICH, Jujuy, Argentina)</td>
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### SESSION II: NATIONAL PRESENTATIONS

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<tr>
<td>14:30 – 15:30</td>
<td>National Presentations (3x 20’ presentation)  &lt;br&gt; Chairperson: M. Saravia  &lt;br&gt; 1. National Presentation related to Mountains (Bolivia)  &lt;br&gt; 2. Estimation of vulnerability in forests in Chile Y. Ponce (Chile)  &lt;br&gt; 3. National Presentation (Colombia)</td>
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<tr>
<td>15:30 – 16:00</td>
<td>Coffee Break</td>
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SESSION III  CLIMATE CHANGE AND MOUNTAIN HAZARDS
8:30 – 10:00  (4x 20’ presentation)
Chairperson: Ch. Steurer
1. Climatic Change in the Andean Region  A. Jarvis (Peru)
2. Climatic Change in Peru  E. Calvo (IPCC)
3. Spaceborne optical remote sensing of snow and glaciers in mountain regions  K. Casey (Norway)
4. Early detection and monitoring of movements in mountain regions using InSAR images  C. Collet (Switzerland)

10:00 – 10:30  Coffee Break
10:30 – 12:00  (4x 20’ presentation)
Chairperson: Ch. Steurer
5. Climatic research in the Andes  IRD (France)
6. Detection and dating of spatio-temporal activity of natural hazard processes in mountain environments  C. Collet (Switzerland)
7. UV radiation and skin effects  M. Blumthaler (Austria)
8. Radar applications for mountain hydrology and glaciology  F. Mueller (ENVEO, Austria)

SESSION IV: HYDROLOGY
14:20 – 15:30  (3x 20’ presentation)
Chairperson: C. Collet
1. Andean panorama of the Hydrological Environmental Services  B. de Bievre (CONDESAN)
2. Remote sensing applied to: Water cycle - including permafrost, land use, erosion, and global climate change  E. Chacón (ICAE)
3. Multitemporal study of glaciers in Hielo Continental Patagónico  G. Gari (CRS-FAA)

15:30 – 16:00  Coffee Break

SESSION V: NATURAL RESOURCES
16:00 – 17:30  (4x 20’ presentation)
Chairperson: C. Collet
1. Ground motion monitoring applied to mining industry using radar satellite imagery  A. Urdioz (ALTAMIRA INFORMATION)
2. High spectral resolution satellite images applied to mineralization recognition  M. Diaz (CONIDA)
Wednesday, 16 September 2009

SESSION VI: AGRICULTURE
8:30 – 10:00 (4x 20’ presentation)
Chairperson: B. de Bievre
1. Land Use and Cover Change in the Andean region  F. Cuesta (CONDESAN)
2. Climate Change and Potato-based Systems R. Quiroz (IPC)
3. Planes de Manejo en Paramos - Paramo Andino regional project M. Peralvo (CONDESAN)
4. Daily evapotranspiration assessment using remote sensing techniques in Northern Peru R. Sanabria (CONIDA)

10:00 – 10:30 Coffee Break
SESSION VII: PROTECTED AREAS & NATURE CONSERVATION
10:30 – 12:00 (4x 20’ presentation)
Chairperson: B. de Bievre
1. Monitoring biodiversity losses by Climate Change in the Andes M. Peralvo (CONDESAN)
2. North and Central Andean Ecosystems Map F. Cuesta (CONDESAN)
3. Toward a national forest monitoring system using remote sensing C. Villon (CONIDA)

12:00 – 14:00 Lunch
SESSION VIII: EDUSPACE
14:00 – 17:30
Chairperson: Juerg Lichtenegger
1. Eduspace and about the Announcement of Opportunity J. Lichtenegger
2. EURAC Junior project as a best practice for work with the ESA Tool Leoworks Ch. Steurer (EURAC)
3. Teaching of remote sensing and space science for secondary school teachers J. Pacheco (CONIDA)

5 to 10 short presentations of ideas of educational material using Earth observation data for secondary schools, presented by scientists and educators of the Andean region

Thursday, 17 September 2009

SESSION IX: WORKING GROUPS
8:30 – 10:00 Plenary Session: Constitution of Working Groups
Chairperson: V. Kotelnikov, Co-Chairperson: G. Salmuni
Working groups will be formed to analyze the subjects proposed in the invitation to the Workshop in order to define project proposals in the following topics:
I Hydrology
II Agriculture
III Natural resources
IV Protected areas & Nature conservation
V Natural hazards and sustainability

10:00 – 10:30 Coffee Break
10:30 – 12:00 Group Session: Working Groups Workshop 1
12:00 – 14:00 Lunch
14:00 – 14:30 Group Session: Working Groups Workshop 2
14:30 – 15:30 Group Session: Working Groups Workshop 3
15:30 – 16:00 Coffee Break
16:00 – 17:30 Plenary Session: Wrap up Session
Chairperson: Victor Kotelnikov

SESSION X: CLOSING SESSION
17:30 – 18:00 Closing remarks
Friday, 18 September 2009

Field Trip: visit to be determined (CONIDA)
Lima City Tour (full day or half day)