

International Conference



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delle Ricerche

Milano



Comune
di Milano

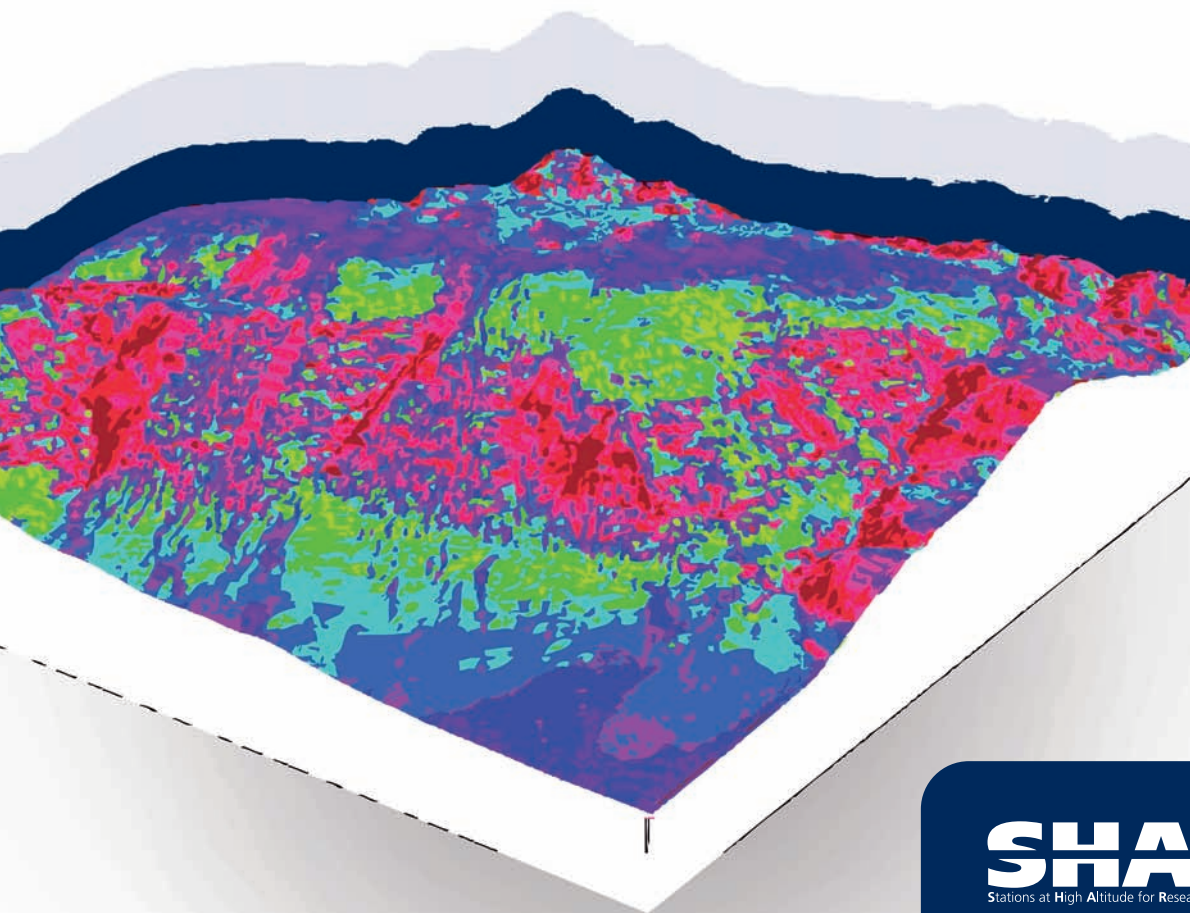
Mobilità, Trasporti,
Ambiente



**"Mountains: energy, water and food for life.
The SHARE project: understanding the impacts of climate change**

Milan 27-28 May, 2009

Venue: Circolo della Stampa - Palazzo Serbelloni - Corso Venezia, 16



SHARE
Stations at High Altitude for Research on the Environment



PROMOTING COMMITTEE

- E. Belloni (Ministry of Foreign Affairs)
 - C. Bouvier (UNEP ROE)
- C. Clini (Ministry of the Environment and Territory)
 - E. Croci (Milan Municipality)
 - A. Da Polenza (Ev-K2-CNR)
 - L. Maiani (CNR)
- D. McGuire (Mountain Partnership Secretariat UN-FAO)

SCIENTIFIC COMMITTEE

- L. Barrie (WMO)
- P. Bonasoni (CNR-ISAC)
- G. Cavarretta (DTA-CNR)
- S. Fuzzi (CNR-ISAC)
- F. Giorgi (ICTP)
- A. Navarra (CMCC)
- V. Ramanathan (SIO)
- R. Valentini (University of Tuscia)
- B. Villavecchia (Environment and Energy Dep. AMA)

ORGANIZING COMMITTEE

- E. Brindisi (Ev-K2-CNR)
 - F. Sernia (CNR)
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CONTEXT AND BACKGROUND


Over the past six years, since the declaration of 2002-International Year of Mountains by the United Nations and the Johannesburg World Summit on Sustainable Development, thanks to greater global environmental awareness and significant developments made in high altitude scientific research, the recognition of mountain environments as some of the world's most important ecosystems has increased dramatically. Already at the Rio de Janeiro Earth Summit in 1992, Chapter 13 of Agenda 21 confirmed the need for sustainable development in mountain regions, given mountains' crucial role as sources of water, energy, biodiversity, minerals, forest products and agricultural products. 10% of the world's population depends directly on mountains, especially for freshwater, while millions more benefit indirectly from such mountain resources.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) confirmed that climate change is not only happening, but that global warming is affecting many physical and biological processes, which in turn affect the availability of water resources, food security and human health. Mountain ecosystems were identified in a recent report of the General Assembly of the United Nations as key indicators of such effects of climate change, especially in terms of vulnerable resources like biodiversity and water.

Over the past century, the size of glaciers in the Alps and the Caucasus mountains has been reduced by half. In Africa, only 8% of the largest glacier in the mountains of Kenya still remains. If this trend continues, by the end of the 21st century, many mountain glaciers will have completely disappeared, and along with them, vital sources of freshwater. The Himalayan glaciers, like those of the Alps, the Andes, etc., act as water towers for entire populations. These frozen reservoirs not only provide water for drinking and cooking, but also for irrigation and livestock, industry and hydro-electric power to millions, if not billions, of people. Furthermore, winter and summer mountain tourism, a primary source of livelihoods in many mountain regions, also depends on the state of the environment, with its increasingly unpredictable climate trends and widely changing seasonal variations.

Mountains constitute an extraordinary platform for monitoring climate change and its effects. They can be considered representative of vast spatial areas, areas often only theoretically uncontaminated. Furthermore, mountains themselves influence local and global climates, although their role in this sense is not entirely understood. Only through high altitude research and environmental monitoring might we increase our knowledge and help guide future policy choices to ensure the conservation and sustainable development of mountain ecosystems, key to our wellbeing on the planet.






Governments, local administrators, international organizations and the scientific community all need reliable information on the health of mountain environments so as to develop strategies that might reverse the trend of global warming, or at least mitigate its worst effects. Scientific researchers have a responsibility to the public to raise awareness on the implications of climate change in mountain areas. Their role in helping define policies for integrated mitigation and adaptation actions cannot be underestimated.


In Lombardy, highlands constitute over 40% of the region, while in Italy they make up the three quarters of the country (hills: 41.6%, mountains: 35.2%). On a global level, mountains amount to 25% of the Earth's surface.

At the 2015 World Expo, with its focus on food security and other major environmental issues, the important role of mountains cannot be ignored. Climate change is first and foremost among the Expo topics that could benefit from the contributions made by mountain research, as are other key themes central to Italy's motivation to host the Expo. Italy's Foreign Minister, Franco Frattini, has declared that these global problems, already subject of intense international debate, will take center stage when Italy hosts the 2009 G8 meeting as well. Those issues include:

- Environmental protection
- Sustainable development
- Renewable energies
- Protection of biodiversity
- Combating desertification
- Prevention of natural disasters
- Access to water for all

The problem of food security must be dealt with as a basic prerequisite to sustainable development. In order to address this issue, however, we need to better comprehend climate change processes and their impacts on ecosystems and environmental services in order to develop appropriate adaptation strategies at the local, national and global levels. A thorough understanding of our changing climate and the effects on fragile ecosystems and natural resources will only be possible if research and monitoring data from mountain areas is taken into account.





Finally, it is also significant that 2015 marks the year by which 189 governments of the world agreed to meet the Millennium Development Goals and Expo 2015 will certainly be used as an opportunity to showcase Italy's contributions to their achievement. In line with the "No Excuse 2015" Campaign, which testifies that the goals are realistic and achievable, Italy therefore has an obligation to make sure all steps it takes between now and 2015 move in the direction of specific MDGs, like Eradicating Extreme Poverty and Hunger, and Ensuring Environmental Sustainability.

WHAT WE PROPOSE

Ev-K2-CNR Committee, in collaboration with the City of Milan and the Municipal Commission for Mobility, Transportation and the Environment, the National Research Council (CNR) intends to help pave the way towards the 2015 Expo. With their SHARE program, Ev-K2-CNR are world leaders in integrated environmental research and monitoring in mountain areas. By directly involving researchers, scientific and public institutions and other stakeholders in discussions on the world's major environmental challenges, chances of improving environmental governance are greatly enhanced.

By raising awareness and sharing information on the effects of climate change on mountain ecosystems and resources, significant progress can be made towards sustainable decision-making on issues such as development, biodiversity, food security and renewable energy. This can be achieved in the framework of a high level international scientific conference, involving top researchers, concerned policy makers and the public in a milestone event on the road to 2015.

GOAL

Contribute to the understanding of current and future climate change processes, so as to predict possible environmental, economic and social impacts, in particular on agriculture, trade and the health and wellbeing of millions. By promoting management-oriented research, driven by decision makers in line with local sustainable development needs, demonstrating Italy's commitment in this sense through the SHARE project and promoting dialogue and exchange amongst international studies, networks and programs.





MAY 27 - 2009

8.30

REGISTRATION

9.00

OPENING REMARKS

Maria Stella Gelmini *(invited)*

Italian Minister of Education, University and Research

Letizia Moratti

Mayor of Milan; Milan Expo 2015 Commissioner Lombardy Region

Edoardo Croci

Town Councillor of Mobility, Transport and Environment

Christophe Bouvier

Director of the UNEP-Regional Office for Europe

Jan Heino

Assistant Director-General, Forestry Department Food and Agriculture Organization of the United Nations

Surendra Shrestha

Director Strategic Resource Mobilization/Special Initiatives UNEP

Corrado Clini

Director General, Ministry for the Environment, Land and Sea

Elisabetta Belloni

Director , Directorate General for Development Cooperation, Italian Ministry of Foreign Affairs

Luciano Maiani

President of the Italian National Research Council (CNR)

Agostino Da Polenza

President of Ev-K2-CNR Committee

Bruno Messerli

Director of the Institute of Geography University of Bern

Vladimir Ryabinin

Senior Scientific Officer World Climate Research Programme (WCRP)

Antonio Navarra

Director Euro-Mediterranean Center for Climate Change (CMCC)

Qamar-uz-Zaman Chaudhry

Director General Pakistan Meteorological Department; Vice President of World Meteorological Organization (WMO) Asia- Pacific Region



LECTIO MAGISTRALIS

**“Managing Environmental Changes through Integrated Development
and Dissemination of Scientific Knowledge (an example)”**

Dr. Aziz Ali Najam, former Vice Chancellor

Karakoram International University, Gilgit, Northern Areas, Pakistan





10.30 COFFEE BREAK


SESSION I Environmental and climate research in mountain areas

Objective: illustrate the state of the art of environmental and climate research in mountain areas, considering in particular: high altitude watersheds, glaciers and freshwater, weather-climate patterns and agriculture. Stocktaking of related local, regional and global policies on development, global warming, energy, food security and health.

11.00 ATMOSPHERE AND CLIMATE

Chair: Antonio Navarra (CMCC)

S. Fuzzi	ABC Science Team, CNR-ISAC	"Atmospheric composition change at high elevations"
G.R. Carmichael	Center for Global & Regional Environmental Research, University of Iowa	
F. Giorgi	International Centre for Theoretical Physics (ICTP)	"Climate Change in the Central Asia regions: models and projections of future climate"
Qamar-uz-Zaman Chaudhry	Vice President of World Meteorological Organization (WMO) Asia-Pacific Region	"The Impact of Climate Change on Hindu Kush - Karakorum Region"
CONCLUSIONS: Antonio Navarra		



12.05 WATER AND GLACIERS

Chair: Claudio Smiraglia (Milan University)

D. Viviroli	Hydrology Group, Institute of Geography, University of Bern	"The role of mountains as 'water towers' for humankind: Global overview and regional examples"
M. Beniston	University of Geneva – Research Group on Climatic Change and Climate Impacts	"Potential impacts of climatic change on snow, ice and hydrology in mountain regions"
M. Bishop	Global Land Ice Monitoring from Space (GLIMS)	"Glacier Response to Climate Forcing in the Karakoram Himalaya, Pakistan"
B. Messerli	University of Bern	"The Hindu Kush-Himalayan Region Highland Waterlines - Lowland Lifelines "
R. Armstrong	National Snow and Ice Data Center, University of Colorado	"The role of glaciers in the mountain hydrology of Nepal"

CONCLUSIONS: Claudio Smiraglia

BOUFFET 13.25

14.25 ENERGY

Chair: Bruno Villavecchia (Environment and Energy Dep. AMA)

S.S. Garud	TERI The Energy and Resources Institute	"Sustainable Energy Planning for mountain countries - A case study of Bhutan"
W. Sparber	EURAC European Academy Bozen	"The role of local authorities in boosting energy efficiency and renewable energies"
M. Akram Kahlown	Water and Power Development Authority	"Mountains, Glaciers and Water Situation in Pakistan"

CONCLUSIONS: Bruno Villavecchia

15.10 BIODIVERSITY

Chair: Riccardo de Bernardi (ISE-CNR; Ev-K2-CNR)

P. Shadie	IUCN	"Climate Change Impacts in the Central Karakoram Mountain System of Northern Pakistan: understanding the role of mountain protected areas in climate change"
R. Valentini	University of Tuscia	"Mountain and Global Changes: Threats to Biodiversity"
G. Amori	ECNC - European Centre for Nature Conservation CNR-ISE	Potential Effect Of Climate Change On A Pre - Predator System: Mountain Vipers And Their Small Mammal Prey"

CONCLUSIONS: Riccardo de Bernardi

COFFEE BREAK 16.00

16.30 HEALTH

Chair: Annalisa Cogo (University of Ferrara)

A. Baklanov	MEGAPOLI	"Urban air quality: Integrated systems for forecasting, assessments and mitigations (experience from FUMAPEX and MEGAPOLI projects)"
G. Viegi	IBIM: Institute of Biomedicine and Molecular Immunology "A. Monroy" IFC - Institute of Clinical Physiology	"Improving global lung health: the role of the Global Alliance against conical Respiratory Diseases"

CONCLUSIONS: Annalisa Cogo



17.10 ECONOMY AND ADAPTATION STRATEGY

Chair: Pier Carlo Sandei (UNEP)

R. Manandhar	UNFCCC Adaptation Technology and Science Programme	"Adaptation-From assessment to implementation: Perspectives from the UNFCCC process"
I. Mylvakanam	UNEP	"Bridging the Science and Policy for control and prevention of atmospheric issues"
R. Tellarini	ACTELIOS- Falck	"We started with Karakorum: Earth Ecological Activity for Refuse Treatment at High Altitude"

CONCLUSIONS: Pier Carlo Sandei





MAY 28, 2009

9.00 FOOD SECURITY

Chair: Doug McGuire (Mountain Partnership Secretariat UN-FAO)

R. Romeo	FAO – Mountain Partnership	“High value mountain products as a means for promoting food security in mountain areas”
S.A K Magezi	Uganda Meteorological Department	“The Impacts of Climate change on the mountains regions of Uganda and the implications on the food security”
A. Gaye	AMMA	“Quantitative and tailored climate information for food security management”
M. Centritto	IBAF-CNR Institute of Agro-environmental and Forest Biology	“Global change, land use pattern and crop productivity: Implications for arid environments”

CONCLUSIONS: Doug McGuire

SESSION II The SHARE project - phase II

Objective: Present the SHARE project - phase II and its scientific and technological contributions to increasing knowledge on climate change and the environment to support sustainable decision making of governments on all levels.

10.10 SHARE PROJECT OVERVIEW

Chair: Iyngararasan Mylvakanam (UNEP)

Introduction: “Ev-K2-CNR: 20 years of research activities in Himalaya and in the World”

E. Vuillermoz Ev-K2-CNR





COFFEE BREAK 10.30

SHARE project: Stations at High Altitude for Research on the Environment	P. Bonasoni	CNR-ISAC; Ev-K2-CNR
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SHARE project applications		
- AFRICA “The environmental monitoring on Mount Rwenzori – research prospective”	S.A.K. Magezi	Uganda Meteorological Department
- ASIA	Qamar-uz-Zaman Chaudhry	Pakistani Meteorological Department
- SOUTH AMERICA “Mount Chacaltaya Laboratory: past, present and future”	F. Zaratti	Unversidad Mayor de San Andres
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SHARE Project: technology in the global atmospheric observing system	P. Laj	CNRS
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SHARE Project: an integrated gis database for environmental data management in the high mountains regions	M.T. Melis	Cagliari University, Ev-K2-CNR
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SHARE Project: the capacity building for the managment of socio-ecosystems	F. Salerno	CNR-IRSA; Ev-K2-CNR
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CONCLUSIONS: Iyngararasan Mylvakanam		
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BOUFFET 12.45





13.45 SESSION III Round Table: Climatic research at High Altitude: environmental monitoring and integrated networks

Chairs: Giuseppe Cavarretta (DTA –CNR;) - Andrea Lami (CNR-ISE; Ev-K2-CNR)

C. Smiraglia	Italian Correspondent-International Glaciological Society	The SHARE contribution to the knowledge of the HKKH glaciers, the largest ice masses of our planet outside the polar regions”
V. Ryabinin	GEWEX/CEOP	”Main activities of the World Climate Research Programme in High Elevations”
S. Fuzzi	UNEP Project ABC Science Team member; Research Director at ISAC-CNR	”ACCENT: the European Network of Excellence on Atmospheric Composition Change”
G. Tartari	CEOP High Elevation	”CEOP HE as key strategic issue in the regional and global energy and water budgets”
L. Jalkanen	GAW	”GAW mountain observatories supporting climatic research”
T. Colombo	GCOS	”High altitude meteorological measurements”
G. Rossi	GLORIA	”Climate change and bio-monitoring at high altitude: the GLORIA approach”
C. Kueffer	MIREN	”The Mountain Invasion Research Network”
P. Groisman	NEESPI	”NEESPI Research in High Elevation Areas of Northern Eurasia”
P. Laj	EUSAAR	”EUSAAR: the European Research Network for Aerosol”
G. Pappalardo	CNR- IMAA- ERLINET	”Integrated long term observations for assessing the impact of atmospheric aerosol on climate and environment”

OPEN DISCUSSION

CONCLUSIONS: Giuseppe Cavarretta – Andrea Lami



Conference secretariat
Ev-K2-CNR Committee

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