



ANNUAL REPORT

08

OUR VISION

Become recognized for contributions made to the resolution of complex global problems concerning the environment, health and socio-economic development.

OUR MISSION

Provide specialized scientific support for sustainable development in high altitude areas, promoting environmental conservation and a better quality of life for local populations.

OUR SCOPE

The Ev-K2-CNR specialization lies in its capacity to work systemically using knowledge generated within a multidisciplinary framework while promoting the dissemination of science.

Ev-K2-CNR combines lessons learned through science with innovation to promote sustainable strategies for safeguarding the environment and improving the quality of life with a special focus on one of the world's most vulnerable and most valuable resources: mountains.

The Ev-K2-CNR Committee applies skills, tools, knowledge and methodology to sustainable development within a system of excellence that benefits from strong ties to mountain landscapes and populations, scientific competence and a thorough understanding of local needs.





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The Ev-K2-CNR project began in 1987, when 90-year-old explorer and geologist Prof. Ardito Desio launched a new research campaign in the Himalayan and Karakorum mountains with the help of climber and businessman Agostino Da Polenza. Just two years later, the Ev-K2-CNR Committee was registered as an independent non-profit association dedicated to technological and scientific research in the Hindu Kush - Karakorum - Himalaya (HKKH) region, with a particular focus on Nepal, Pakistan and the Tibet Autonomous Region of China.

In 2006, the association gained national juridical recognition, and in 2007, to formalize Ev-K2-CNR's close collaboration with the Italian National Research Council (CNR) over the previous two decades, an official "External Research Unit" under CNR's Earth and Environment Department (DTA) was opened at Ev-K2-CNR headquarters.

Ev-K2-CNR is probably best known for the Pyramid International Laboratory-Observatory, the high altitude scientific facility located in Nepal's Sagarmatha National Park at 5,050 m a.s.l., installed in 1990 in collaboration with the Nepal Academy of Science and Technology (NAST). What began as a permanent high altitude research base has evolved to become one of the world's most complex and intriguing study sites, at which nearly 600 research missions have been carried out. The Pyramid has a completely self-sufficient renewable energy supply and satel-

lite telecommunications systems. Aside from providing common laboratory space and equipment for researchers, the facilities also offer comfortable accommodations in a temperature-controlled environment. Environmental observation and monitoring equipment installed at the Pyramid continuously collects data that is transmitted to researchers' home institutes in real time.

Since its inception, Ev-K2-CNR has accumulated a wealth of knowledge regarding high altitude in the fields of Medicine and Physiology, Environmental Sciences, Earth Sciences, Anthropological Sciences and New Technologies. Working within a rich network of international institutional collaborations, Ev-K2-CNR plays a strategic role in the exchange and transfer of experiences and of scientific and cultural knowledge. Their increasingly interdisciplinary approach to research has also led to the development of innovative integrated programs for the promotion of socio-economic development and environmental protection in mountain regions. Such projects include: the HKKH Partnership funded by the Italian government and built around Ev-K2-CNR's expertise; Karakorum Trust, which promotes sustainable development in Pakistan's Northern Areas by facilitating implementation of the Central Karakorum National Park (CKNP); and SHARE, the long term study of evolutionary environmental processes at high altitudes with a strong technology transfer and capacity building component.

ABOUT Ev-K2-CNR



PRESIDENT'S MESSAGE

2008 has been characterized by few changes in the Ev-K2-CNR priorities and operating strategy as well as by the strengthening of planning activities.

On the one hand has been drawn up the new three years research project and has been appointed a new Scientific Council. While completing the research project 2008-2010, it transpired the need to give a new value to the Ev-K2-CNR mission, also in the light of development of our activity, as it move from a multi-disciplinary to a more inter-disciplinary, integrated approach.

The peculiarity and the specialization of the Ev-K2-CNR activity, nowadays, lie in its capacity to work systemically using knowledge generated within a multidisciplinary scientific framework while promoting sustainable actions directed to the environment safeguard and to the development of the land and human wellbeing of the developing countries where Ev-K2-CNR works.

Also the appointment of a new Scientific Council, after eight years of intense and qualified activity, for which I would like to thank you all the people involved, has been the consequence of this new vision. For this reason the Scientific Council is weighing new procedures through which submit and evaluate the new research proposals, that will have to fit with the Integrated Projects objectives, also in order to optimize the funds.

The integrated projects SHARE, DSS-HKKH Partnership, Karakorum Trust besides have achieved excellent results, important agreements have been signed with international institutions, as PMD, Pakistan Meteorological Department, DHM Nepalese Department of Hydrology and Meteorology and also with Sagarmatha National Park Buffer Zone Management Committee, are recognized at a scientific as well institu-

tional level as reference projects for the mountain ecosystems.

The last month of May we have also achieved, thanks to the mountaineering/scientific expedition "SHARE Everest 2008", an important international scientific feat, the installation of the highest automatic weather station in the world. The South Col AWS station integrated in the environment monitoring network of our program SHARE (Stations at High Altitude for Research on the Environment), is providing a unique contribution to the international scientific community, given the altitude at which the data is collected. In particular, the international monitoring projects coordinated by UNEP and WMO in which we participate will benefit from this new knowledge. An important achievement, on a scientific, institutional and media level.

A perfect example of the Ev-K2-CNR new approach is represented by what is going to be outlined in Pakistan. A new important project, under the umbrella of the Debt Swap programme, still in a settlement phase, that aims at a social, economic and environmental development of the Central Karakorum National Park.

The project does not follow a sectorial but an integrated approach. Interventions will take place in following sectors: economic, mainly tourism, but also crafts S&T, health, conservation, agriculture, education and infrastructure and it will include also activities already operating in the other projects working in the Northern areas (SHARE, HKKH and Karakorum Trust).

This approach will permit to give continuity and to guarantee a long term and lasting development.

New and demanding challenges will attend Ev-K2-CNR for the next years.

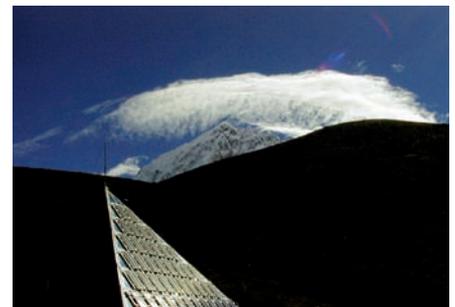
Agostino Da Polenza
President, Ev-K2-CNR Committee

Ev-K2-CNR SCIENTIFIC PLANNING

Ev-K2-CNR 2008-2010 research program The External Research Unit together with the Ev-K2-CNR Secretariat have produced and published the Three-year Research Program. The main purpose of this document is to illustrate the current priorities and strategies of Ev-K2CNR and to provide a concise summary of the scientific and technological activities planned for execution in the 3-year period. The program in particular marks a departure for Ev-K2-CNR, as it moves from a multi-disciplinary organization to a more inter-disciplinary, integrated approach. Researchers reading this document will be able to better orient their current and possible future activities in accordance with Ev-K2-CNR's overall strategy. Institutional readers will be able to appreciate the political and scientific contexts of Ev-K2-CNR's activities and find inspiration regarding ways to support research and reinforce existing or create new collaborations.



Ev-K2-CNR Scientific Council reorganization After eight years of intense activity, the Ev-K2-CNR Scientific Council has been reorganized. It undertakes the new role of advisory body for the External Research Unit and Ev-K2-CNR management bodies with the goal of identifying and developing new strategies, verifying the adherence of the proposed projects with these strategies, and assessing and monitoring the progress of the projects carried out in the framework of Ev-K2-CNR planned activities. The new Scientific Council met for the first time on 28 November 2008, discussing about the results obtained during the mandate of the old Scientific Council, reported by the outgoing President of the SC Dr. Gianni Tartari, and showing the new procedures and methods which the new Scientific Council will activate during the mandate. Dr. Andrea Lami, coordinator of the External Research Unit presented the activities carried out in 2008 and activities foreseen for the next years of activity 2009-2011.



Ev-K2-CNR INSTITUTIONAL AND OFFICIAL MEETINGS

Ev-K2-CNR – NAST Bilateral Technical Committee Meeting, Verbania Pallanza, March 5 BTC members met to approve the joint scientific activities to be carried out in Nepal in 2008. In total, 18 research projects are approved (15 proposed by Ev-K2-CNR and 3 by NAST). The meeting was co-chaired by Prof. Hom Nath Bhattarai, NAST Vice Chancellor, and Dr. Andrea Lami, Ev-K2-CNR.



Meeting with Institutional Partners, Kathmandu, Nepal, June 8-15 The Executive Director of Ev-K2-CNR Project met, during the first week of June, the main Nepalese Partners, as the Nepal Academy of Science and Technology (NAST), the Department of Hydrology and Meteorology (DHM) and the International Center for Integrated Mountain Development (ICIMOD), to discuss the state of art of the current collaborations and to identify the priorities for future activities and initiatives.



Official Meetings, Kathmandu, Nepal, November 8-12 Dr. Elisa Vuillermoz and Prof. Lydia Szyrkowicz, the new Scientific Counsellor of the Italian Embassy in New Delhi, met in Kathmandu to participate in a series of Official meetings for the renewal of cultural cooperation between Italy and Nepal, which aims to consolidate and expand the ongoing collaboration between the two countries in science and technology.



On May 15, it has been installed the highest weather station of the world (South Col, Mt. Everest 8,000 m. a.s.l.)



RESULTS ACHIEVED IN 2008

SHARE
Stations at High Altitude for Research on the Environment

SHARE is an integrated project comprising an international climate and atmospheric monitoring network and research in environmental and geophysical sciences. Working in synergy with projects run by UNEP and WMO, data from the SHARE initiative benefit the international scientific community as well as decision makers.

The SHARE project intends to contribute to the study of the impacts and adaptation to climate changes, paying special attention to protection of water resources, conservation of biodiversity and fragile ecosystems and food security. SHARE will make new and more complete information on climate change and its local, regional and global consequences available to the countries where it is operating and to international agencies.

SHARE is promoted by Ev-K2-CNR and funded by the Italian National Research Council (CNR) and the Italian Cooperation (MAE-DGCS) through UNEP. Through implementation of long term environmental programs at often hard to reach altitudes, quality observations and measurements will be made available to major international research programs such as ABC, AERONET, CEOP-HE, GAW, WCRP-GEWEX-CEOP, ILTER, GEO.

2008 RESULTS

- While proceeding the continuous measurements of aerosol particles, ozone and meteorological parameters as well as weekly samplings of particulate matter and grab air samples for the determination of halocarbons, on January 2008, the second field campaign for the instrument on-site calibrations at the Nepal Climate Observatory-Pyramid (NCO-P) station, has been carried out. It has allowed to verify the measurements done till now, as well as to calibrate all the instruments for the data acquisition. The Nepal Climate Observatory-Pyramid (NCO-P) station, installed near the Pyramid Observatory-Laboratory at 5,079 m a.s.l. in the Khumbu Valley (Nepal) in February 2006, is the highest observatory of UNEP-ABC monitoring program and represents a unique source of data, able to make up the lack of information on atmospheric composition in the Himalayas.

The measurements have been checked thanks to the introduction (insertion) of HEPA total filters on the nephelometer, SMPS/DMPS, GRIMM and MAAP, in order to value the zero and the possible presence of ground rumours. It has been also checked the effectiveness of SMPS/DMPS, GRIMM measurements, using nanospheres. At the end of maintenance procedure it has been performed a new zero through the total HEPA filters in order to verify the correct reinstallation of the instruments

environmental management through transfer of technology and capacity building in environmental and geophysical sciences.

SHARE EVEREST 08

THE GLOBAL WARMING SENSOR



AWS installation at Kala-Pattar (5,600 m asl)
 AWS installation at Mt. Everest South Col (8,000 m asl)

Continuous measurements

- temperature (°C)
- humidity (%)
- pressure (hPa)
- wind speed (m/s) and direction (°)
- global solar radiation (W/m²)
- UVA radiation

South Col AWS

near real-time data

The data from AWS South Col station are available in real time on www.evk2cnr.org



and the possible presence of leaks. Head of the project, Paolo Bonasoni, CNR Institute of Atmosphere Sciences and Climate.

-Within the framework of initiatives celebrating the International Year of Planet Earth, was born the mountaineering scientific expedition SHARE Everest 2008. The mission has been able to carry out two important installations at high altitude: an automatic weather station at Mt. Kala Patthar (5,600 m a.s.l.), and, more important, a second installation at Mt. Everest South Col, at 8,000 m a.s.l.

- AWS Kala Patthar - The automatic weather station was installed on Kala Patthar, at 5,600 m a.s.l., on May 7, 2008. Besides continuously measuring temperature, humidity, direction and speed of the wind, global and UV solar radiation and precipitation, it works as a repeater and radio-relay system for the data transmitted by the station installed at South Col. The sending of data to the Pyramid server allows, via satellite connection, the transmission of the information to Italy. In order to assure the perfect running of the instrument system, several connection tests have been performed, one of them to Mt. Everest Base Camp, during the trial installation of the South Col station, before the final installation at 8,000 m a.s.l.

- AWS South Col - On May 15, 2008, Italian climbers Silvio Mondinelli, Marco Confortola, Michele Enzio and the Nepalese Tshering Sherpa, Pema Chhosang Sherpa, Thsiri Sherpa of Khumjung, Phura Sherpa of Namche and Phura Sherpa of Walung, coordinated from the Pyramid, by the head of the expedition, Agostino Da Polenza, and by the manager of Ev-K2-CNR monitoring stations, Gian Pietro Verza, the weather station located at the highest altitude in the whole world, at South Col (8,000 m a.s.l.), on Mt. Everest. The station is continuously measuring temperature, relative humidity, pressure, wind direction and speed, global and UV solar radiation, and every hour it sends to Italy the collected data, thanks to the Pyramid satellite connection system.

Together with the Kala Patthar one, the station is included in the Ev-K2-CNR SHARE Project, providing, thanks to the peculiar data collected at high altitude, a unique contribution to the international scientific community and to the monitoring projects coordinated by UNEP and WMO. The data concerning atmospheric pressure, measured at an altitude of 8,000 m a.s.l., is the first ever recorded by a ground station and not by an air balloon.

- One of the main objects of the SHARE project is to strength collaboration with international institutions and organization in order to facilitate scientific and technical



exchanges and capacity building activities for the local partner. In light of these considerations, during October 2008, two joint campaigns have been led in Pakistan and Nepal.

1. Mr. Gian Pietro Verza, the technical manager of the Ev-K2-CNR monitoring station with two technicians of the PMD (Pakistan Meteorological Department) has carried out a on site mission to check and upload the data of the two weather stations, installed in Pakistan, Askole (3,050 m a.s.l.) and Urdukas (4,000 m. a.s.l.). Mr. Khurram Waqas Haider and Mr Adil Munir, PMD, have been involved in the technical and scientific checks in order to be trained on the maintenance procedure as well as on the data upload. The collaboration between PMD (Pakistan Meteorological Department) and Ev-K2-CNR has been formalized on March 1st 2008, and it represents an important result for the scientific collaboration between Italy and Pakistan.

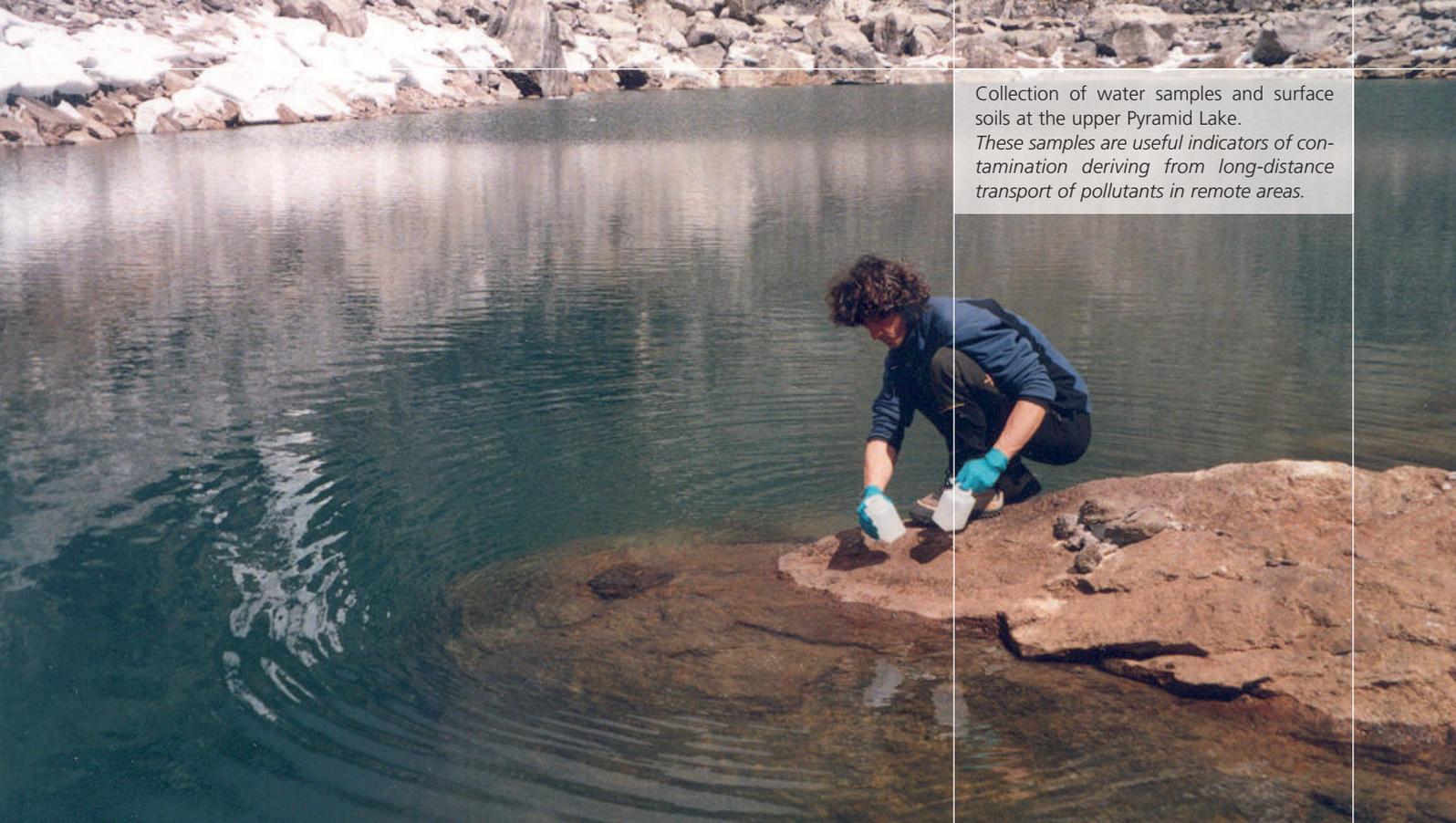
2. Joint campaign Ev-K2-CNR and DHM (Nepali Department of Hydrology and Meteorology) - high Khumbu Valley and Gokyo valley. DHM manages a weather stations network on Nepali mountains, which represents a precious comparison for the data collected by the SHARE stations and an important contribution to analyse the effects of climate change in this area. The main goal of this campaign, conducted by Gian Pietro Verza, and Elisa

Vuillermoz, Ev-K2-CNR with Mr. Ram Chandra Karki and Mr. Ram Chandra Karki, DHM technicians, was to have a whole vision about the research studies implemented by the two organizations. During the field campaign, have been checked the Ev-K2-CNR AWSs in Lukla (2,660 m a.s.l.), Namche Bazar (3,500 m a.s.l.), Pheriche (4,200 m. a.s.l.) and Lobuche (5,050 m. a.s.l.), and the DHM weather stations in Syangboche (3,900 m a.s.l.), Pangboche (4,000 m a.s.l.) Dingboche (4,355 m a.s.l.), Tukla (4,650 m a.s.l.) and Gokyo (5,100 m a.s.l.).

The DHM staff had the possibility assisting to the uploading of the stations data and to be trained about their functioning.

The data collected by the stations in Nepal and Pakistan have been sent to the CEOP project

NEW AGREEMENTS: Ev-K2-CNR signed two agreements, the first with the Nepalese Department of Hydrology and Meteorology (DHM) in January, and the second with the Pakistan Meteorological Department (PMD) in March, for research based on meteorological data collected at high altitude respectively in the Himalayas of Nepal and in the Karakorum region of Pakistan, and to strengthen the scientific base for studying climate change impacts by facilitating scientific collaboration and data exchange.



Collection of water samples and surface soils at the upper Pyramid Lake. These samples are useful indicators of contamination deriving from long-distance transport of pollutants in remote areas.

- CEOP HIGH ELEVATION The HE Working Group was then set up in early 2008 further to identification of a group of international experts active in high elevation studies which became the HE Steering Committee and creation of a CEOP-HE Secretariat, hosted by the Ev-K2-CNR Committee in. During the 1st CEOP-HE Steering Committee Meeting on April 2008 (see Events session) has been launched the Working Group and define the goal, objectives and actions of HE. Plans were also laid for the elaboration of an integrated HE Science Plan (SP), with the aim to describe the scientific rationale and methods for achieving HE's specific objectives in line with the goals of CEOP. Since continuous measurements carried out at high elevation sites are crucial to the proposed study within HE initiative, focus is primarily being placed on use of data from the existing CEOP Reference Sites (CRSs) observatories located at high elevations: CAMP/Tibet (Tibetan Plateau), CAMP Himalayas (Nepal) and Pakistan Karakorum Network (Pakistan). Subsequently, a global network and database of HE observation stations, including but not limited to CRSs, will be created. All of this will aim ultimately towards the development of a coordinated global approach to data collection at high elevations and will promote the execution of comprehensive and consolidated hydro-climatic studies.

- During the year the Pyramid staff has monthly sampled surface water of the water bodies selected in the last year mission, in particular: the upper basin near the Pyramid, the lakes n. 12-13 near Lobuche, the lake n.7 in Kala Patthar area, besides the water courses around Periche. The project, coordinated by Raffaella Balestrini, CNR - Water Research Institute, aims to study the biological and hydrological processes that regulate nitrogen cycle in the Himalayan ecosystem. The samples have been transferred in Italy to be analyzed.

- The project coordinated by Licia Guzzella CNR – Water Research Institute, aims to identify the xeno-biotics species, related to the long distance transport of pollutants in the Himalayan lacustrine environments, as well as the study of the time and altitude evolution of the anthropic pressure in the high altitude areas, through the water, deposits and surface soils analysis. In October 2008 water samples and surface soils have been collected by Adolfo De Paolis, in the upper and lower basins near the Pyramid, in the upper and lower lakes of Pumori as well as in the lakes near Thoka and in Chhukung area.

- During all the year have been collected, by the Pyramid technical staff, weekly rain samples, thanks to the use of "only wet sampler", installed on April 2007.

The President of Italian Republic, Giorgio Napolitano gives the Italian flag to Silvio Gnaro Mondinelli during the meeting with the member of the scientific/mountaineering expedition SHARE Everest 08



The study of wet deposition (rain and snow) chemistry during monsoon combined with the research on aerosol (ABC) will allow having a more complete status of the air quality in the Pyramid area, and providing complementary information for the interpretation of regional and local transport phenomena.

This activity is coordinated by Stefano Polesello, CNR - Water Research Institute.

- Thanks to the collaboration that involve Ev-K2-CNR, CNR - Institute of Atmosphere Sciences and Climate, Laboratoire de Glaciologie, Grenoble and CNRS, have been developed the research activates for the realization of Nano-SHARE, a new miniaturized and autonomous station for observation of aerosol and gases at high altitude.

The main objectives of the prototype Nano-SHARE have been identified:

1. improving scientific knowledge of atmospheric composition changes (sources, transport, etc..) in remote areas (i.e. high altitude environments);
2. adapting state-of-the-art monitoring technologies to extreme weather conditions (high altitude environments): NCO- P;
3. developing a cost-effective automatic station for monitoring aerosol and gas phase species.

At this state of study, have been also pointed out few characteristics of the prototype Nano-SHARE:

1. measurement of basic in-situ gas and aerosol species (application dependent)
2. use of new generation of analyzers
3. integrated calibration systems
4. remote control of instrumentation and Near-Real-Time data transfer
5. reduced energy consumption and integrated energy production unit
6. adapted to extreme environments
7. reduced investments and operating costs, easy handling by non-experts

2008 SHARE EVENTS

Presentations of NCO-P Station Results, Bologna, January 22

Representatives of ABC project of UNEP, of Ev-K2-CNR and of CNR-ISAC met to discuss about the results of the activities carried out from the ABC station installed at the Pyramid Laboratory Observatory. In particular, the meeting allowed to discuss the results obtained from the first 18 months of measures collected at the Nepal Climate Observatory-Pyramid (NCO-P). The researchers showed the variations of the trace climacteric gases and the chemicalphysical properties of the atmospheric particulate. In addition they traced the meteorological trend, also during the monsoonal season.



Institutional Meeting with the President of the Italian Republic Giorgio Napolitano, Rome, April 1

The Ev-K2-CNR President together with a delegation composed by Cristophe Bouvier (UNEP Europe Director and Regional Representative), Luciano Maiani (President of National Research Council), PierCarlo Sandei (UNEP Associate Programme Officer), Milvia Boselli (Padua University), Davide Zulian (Ev-K2-CNR Vice President), Paolo Bonasoni (CNR-ISAC) and other representatives of Ev-K2-CNR, met the President Giorgio Napolitano and presented the SHARE-Everest project starting it up officially. The SHARE-Everest Scientific Coordinator, Dr. Paolo Bonasoni, explained the functioning of the Automatic Weather Stations installed at South Col and Kala Patthar.

Annual Spring Meeting, Garden of Quirinal Palace, Rome, May 30

During the event, hosted annually from the Quirinal Palace, the President of the Italian Republic Giorgio Napolitano talked live with the Ev-K2-CNR President and the other members of SHARE-Everest team and congratulate them on the successfully expedition which allowed the installation of a permanent Automatic Weather Station on the South Col of Mount Everest at 8,000 m a.s.l. The team were connected from the Pyramid Laboratory-Observatory, and could personally thank the President for the High Patronage conceded.

Scientific Consultation Workshop: Water Cycle Multi-mission Observation Needs, Vienna, April 14

The International Global Energy and Water Cycle Experiment (GEWEX) Project Office (IGPO), in collaboration with the University of Vienna and the European Space Agency (ESA), organized the workshop "Scientific Consultation Workshop: Water Cycle Multi-mission Observations Needs". During the meeting, to which Dr. Gianni Tartari participated on behalf of Ev-K2-CNR, the new project "Water Cycle Multi-mission Observation Strategy" (WACMOS) was presented.

First CEOP-HE Steering Committee Meeting, Padua, April 16-17

The 1st CEOP-High Elevations Steering Committee Meeting, organized by the Ev-K2-CNR Committee and hosted by the Institute of Atmospheric Sciences and Climate (ISAC-CNR), was convened following implementation of the High Elevations (HE) working group as new element of Regional Studies within GEWEX/CEOP Projects in early 2008. In particular, the meeting brought together HE Steering Committee Members to discuss and define scientific HE issues and objectives in order to lay the foundations for the implementation of the HE-Scientific Plan.

International Conference "Mountains as early indicators of climate change – Padua, April 17-18



International Conference on Mountains as Early Indicators of Climate Change, Padua, April 17-18

The conference, organized by Ev-K2-CNR together with UNEP Vienna Office, Padua University and with the collaboration of EURAC Research, aimed to underline the important role of mountains as indicators of climate change and to demonstrate that the impact of global warming on the ecosystem services provided by mountains is relevant to everyone. The main outcome and message was a strong call for attention in the development of adaptation strategies for mountainous areas as a priority for the International community.

First Meeting of ABC Observatory Group, Bangkok, May 26-27

Dr. Paolo Bonasoni and Dr. Elisa Vuillermoz presented the main results obtained during this first years of activities carried out at the Nepal Climate Observatory-Pyramid (NCO-P) during the meeting organized by UNEP. During the meeting the task to predispose the ABC meteorological measures data format was entrusted to Ev-K2-CNR.

From deserts to monsoons: aerosols and their impacts at regional and global scales, Crete, June 1-6

During the congress several experts discussed to favour and emphasize an interdisciplinary approach for the study of the various aspects of the processes and of the dynamics which are regulating the Earth and which concern particularly the aerosols, water cycle, climate and climate changes. Dr. Gianni Tartari presented the SHARE Project and the researches activities carried out in Himalaya and Karakorum regions.

International Conference on Hydrology and Climate Change in Mountainous Area, Kathmandu, November 15-17

During the conference, jointly organized by SOHAM (Society of Hydrologist and Meteorologists), the Nepalese Department of Hydrology and Meteorology (DHM) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), the experts discuss about the impacts of climate change and adaptation, snow and glaciers hydrology, sedimentations and failures, hydrological modelling, flood forecast and alarm systems, emergency plans, climate change and biodiversity. Dr. Gianni Tartari participated at the conference on behalf of Ev-K2-CNR.



During the 5th session of the Climate and Cryosphere (CliC) Scientific Steering Group and WCRP/SCAR Climate and Cryosphere annual Steering Group Meeting, the CEOP-HE initiative has been presented

International Mountain Biodiversity Conference on Biodiversity Conservation and Management for Enchade Ecosystem Services: Responding to the Challenges of Global Change, Kathmandu, November 16-18

The conference aimed to reunite the more important institutions involved in the Biodiversity and Ecosystems conservation to share and to develop future strategic alliance for the conservation of biodiversity in the mountain areas.

Dr. Gianni Tartari presented during the meeting the Ev-K2-CNR activities carried out in Himalaya and Karakorum.

ABC Events, Kathmandu, December 3-7

In December a series of meetings related to ABC Project were organized in order to share together with the Science Team members the results obtained in this first phase of the project and to discuss about its Phase 2. Dr. Sandro Fuzzi and Dr. Elisa Vuillermoz participated on behalf of Ev-K2-CNR.

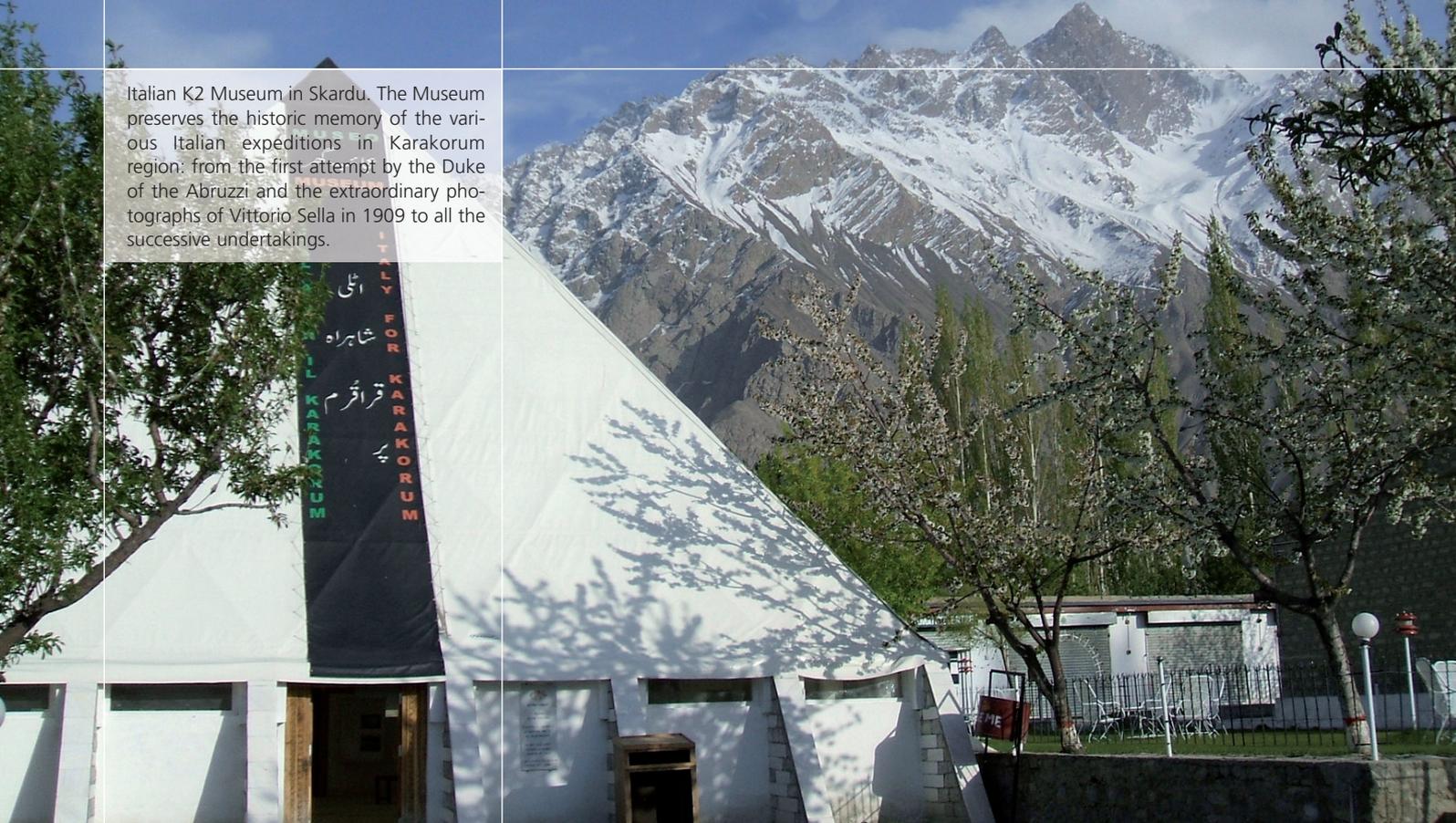
5 session of the Climate and Cryosphere (CliC) Scientific Steering Group and WCRP/SCAR Climate and Cryosphere annual Steering Meeting, Geneva, December 8-11

During the meeting, hosted by the World Meteorological Organization (WMO), the members of CliC Steering Group met in order to evaluate the project progress. On behalf of Ev-K2-CNR, Dr. Gianni Tartari presented the CEOP-High Elevations initiative.

Seminary High Elevations, towards the constitution of an attention interdisciplinary group for the meteorological-climatic research in high mountain and the environmental related aspects, Milan, May 14

The event jointly organized by the University of Milan, Ev-K2-CNR and CNR-IRSA, aimed to discuss the importance of mountain ecosystem and its scientific relevance in the study of the processes related to the climate change, but also its importance as economic and natural patrimony.

Italian K2 Museum in Skardu. The Museum preserves the historic memory of the various Italian expeditions in Karakorum region: from the first attempt by the Duke of the Abruzzi and the extraordinary photographs of Vittorio Sella in 1909 to all the successive undertakings.



RESULTS ACHIEVED IN 2008

KARAKORUM TRUST

Karakorum Trust (KT) was created by Ev-K2-CNR to consolidate Italy's nearly 100-year history of exploration, research and mountaineering in Pakistan's Karakorum Mountains.

Building upon the dream of Prof. Ardito Desio to see a protected area established around Mount K2, Ev-K2-CNR garnered the support of the Italian government and is coordinating a series of sustainable development initiatives in the area. Working with local communities, NGOs, and local and national government, the capacity to manage the fledging CKNPE is being reinforced. In line with its other scientific objectives, Ev-K2-CNR is also simultaneously helping communities and institutions understand and adapt to climate change.

2008 RESULTS

In the framework of GARNET project, on March Ev-K2-CNR installed a laboratory for gemstones analysis and cutting in Gilgit (Pakistan). Since April the Laboratory started to process gemstones under the supervision of an Ev-K2-CNR technical trainer.

During September, KIU and GARNET technical staff started to elaborate the contents and programs for a training course to be held from March to May 2009. In this framework, Ev-K2-CNR and RAI shoot a documentary about mining and processing techniques called "Gemstones at High Altitude" (Gemme d'alta quota).

WWF-Pakistan completed the following actions:

- Resource Need Assessment - RNA sessions were held in Testey, Mongrong, Kurfey, Askoli, Thongol, Chungo, Hoto and Pakora villages of the upper Braldo valley. AKRSP, NAFD, NAAD and WWF staffs conducted the RNA sessions

- Awareness Raising Campaigns, in collaboration with local NGOs: one campaign was organized in Hushey valley, wherein students, teachers and communities participated

- Creation of a Thematic Tourist Map of CKNP: Draft eco tourist thematic map has been sent to key stakeholders for information validation, authentication and finalization. Designing and cartographic work is in progress

- Plantation of Trees (Willows and Poplars) in Tourist Campsite

- A field survey of all the prominent mineral sites in 27 villages has been completed, except Shimshal and Hopper valleys.

AKRSP has initiated the following projects which are expected to be completed by July 2009:

- Irrigation Channel at Thongle. This channel is 3,100 feet long, 2 feet wide and 1 foot in depth and this will benefit more than 40 households by irrigating 960 kanals of existing land.

- Water Supply Scheme at Sino. This project was initiated with the WO of Sino where 40 households will benefit by this project. Total length of the pipe is 3,035 feet while the diameter is 1,5 inch (1,500 feet main line) and 1 inch and 1/2 inch are the diameters of distribution lines.





The Garnet Laboratory at the KIU was inaugurated by the Italian Ambassador Vincenzo Prati on April 7



The project is expected to complete by June 2009. It is believed that the provision of clean drinking water will improve the health status of the people due to curtail in water borne diseases.

- Irrigation Channel at Mongrong. This irrigation channel is the extension of the Teste irrigation channel which will bring more than 2,100 kanals of barren land under cultivation. The channel is 3,500 feet long, 2.5 feet wide and 1.5 feet deep. All households of village Mongrong will benefit from this channel. This project was also initiated in September 2008 and it is expected to be completed by August 2009.

Ev-K2-CNR and AKRSP published the results of the joint socio-economic survey carried out in the past year.

In collaboration with Alpine Club of Paksitan, on July Ev-K2-CNR completed the annual cleaning campaign on Baltoro Glacier.

On late 2008, under the aegis of UNEP, Ev-K2-CNR elaborated the program for the second phase of Karakorum Trust.

KT II can be considered as the natural continuation of the first phase with different objectives and purposes. Particularly the objectives of KT-II is to improve the quality of life of local communities and the conservation of environment, architectural and cultural heritage, and enhance capacity of local communities and institutions to adapt to climate change in the Central Karakorum.

These objectives will be pursued by expected outputs as follows:

- A network of cooperation projects to avoid overlap of activities and duplication of the efforts developed in the project area.

- An integrated management plan developed and agreed to identify gaps and capacity building needs for the implementation of the plan, layout the details of financing mechanism and institutional setup for the management of the park, and strengthen institutional management mechanism of the CKNP.

- A sustainable development master plan developed to enable the CKNP to provide a long-term and holistic strategic direction for sustainable development.

- The climate change impacts assessed and needs for adaptation to climate change and integrated ecosystem management identified, and pilot projects undertaken to demonstrate successful adaptation options to local community and show case to decision makers and managers.

- Knowledge-based decision support system established for the Central Karakorum Ecosystem, environmental, architectural and cultural heritage to improve communication amongst the local stakeholders and development partners, and professional skills in management and coordination of development cooperation projects enhanced.

- An environment monitoring station installed and in operation to collect data and information which will be made available to local stakeholders and managers. Awareness raised and capacity enhanced on the climate change adaptation and ecosystem management, for the local communities and institutions.

- Achievement of this project disseminated and replicated in great Himalaya Mountains.

KIU Vice Chancellor visiting CNR Headquarters in Rome with Italian and Pakistani Ambassadors



FUTURE PERSPECTIVES:

In the framework of Karakorum Trust, Ev-K2-CNR cooperates with several institutions and all the activities aim at implementing the Central Karakorum National Park (CKNP). With this purpose and in occasion of the visit of the Karakorum International University (KIU) Vice Chancellor, Prof. Aziz Ali Najam, both Ev-K2-CNR and KIU started to cooperate on a new project that will add more value to the outputs of KT project:

- in the last year the Italian Government remitted the Pakistani debt for 100 million euros with the condition that this funds will be used for the development, the education and the environmental conservation in coordination with the Italian authorities;
- during 2008, Ev-K2-CNR and KIU started to elaborate a joint proposal to be submitted to the competent authority in order to use this credit for finalizing solutions aimed at implementing the CKNP.

NEW AGREEMENT:

In April, Ev-K2-CNR signed an agreement with the Karakorum International University (KIU) concerning the collaboration about Gemstones Analysis and Research Network (GARNET) project. The agreement describes the responsibilities of each partner for installing and running the laboratories of analysis and cutting in Gilgit (Pakistan).

2008 KARAKORUM TRUST EVENTS

Visit in Italy of Dr. Aziz Ali Najam, Vice Chancellor of the Karakorum International University (KIU).

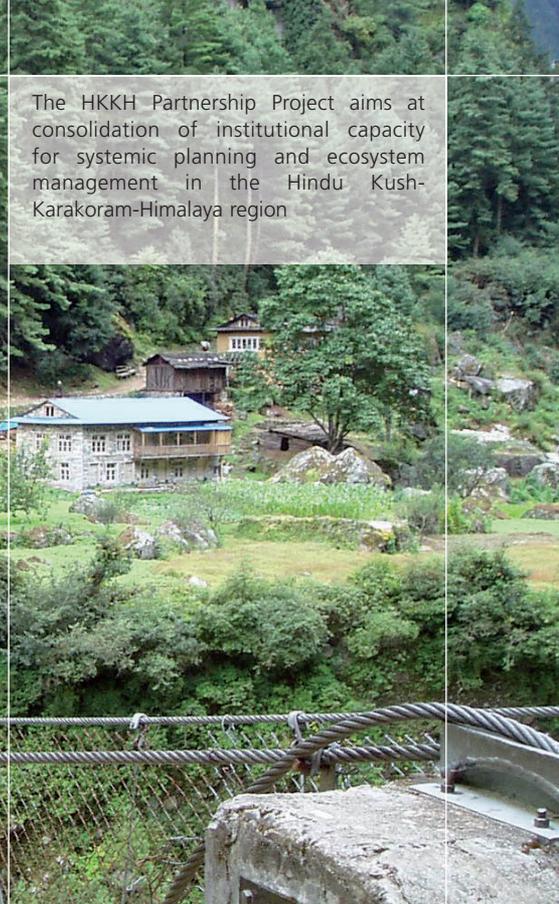
KIU Vice Chancellor, together with Ev-K2-CNR President met the Italian Ambassador in Islamabad, Dr. Vincenzo Prati, and the Pakistani Ambassador in Rome, Dr. Tasneem Aslam. The meeting aimed to show to the respective diplomatic representatives the activities which both institutions are jointly carrying in Pakistan.

International Conference "Partnership/Network for promotion of research and knowledge in the Northern Areas of Pakistan", Gilgit, April 7-9

The conference organized by the Karakorum International University (KIU) assembled delegates from 65 countries in the world with the goal to create new partnerships and relationships related to the scientific research in mountains. Ev-K2-CNR President, Prof. Giorgio Poretti and Dr. Anna Bocci, together with Eng. Maurizio Gallo participated in the conference. In this occasion, the GARNET Laboratory was inaugurated.

GARNET Project Presentation, Islamabad, June 2

In occasion of the celebrations for the Italian Republic Day hosted by the Italian Embassy, the GARNET Project was presented to the Italian and Pakistani authorities invited to this event. Mr. Muhammad Iqbal and Sumaira Shaheen presented the first worked and cut gemstones



The HKKH Partnership Project aims at consolidation of institutional capacity for systemic planning and ecosystem management in the Hindu Kush-Karakoram-Himalaya region

Ev-K2-CNR promotes in collaboration with ICIMOD, CESVI and IUCN the HKKH Partnership project, funded by the Italian Ministry of Foreign Affairs, for the creation of a Decisional Support System (DSS) to contribute to consolidating the institutional capacity for systemic planning and management at the local, national and regional levels, with a view to improve the living conditions of local communities and to hinder the loss of biodiversity in the Hindu-Kush – Karokorum – Himalaya region.

The project will foster exchange of knowledge and build the capacity of local authorities to understand and leverage the complexity and the trade-offs involved in land use planning. It also helps to improve the quality of the relevant background data considered to be a key factor to assist decision-makers to deliver more sustainable solutions.

2008 RESULTS

- The process of development of a socio-ecosystem model for the management of Sagarmatha National Park and Buffer Zone (SNPBZ) is progressed significantly. The data collection in the framework of the data gap analysis is completed and the preparation of this data for the models is making good progress. The management levers – key drivers to be modified in the models in order to assess the system's response jointly developed by management and research-oriented stakeholders at the beginning of the project – could be consolidated and included in the

quantitative models to ensure the relevance of the final models for the managers. The first models have been finalized as "black" models, running with real data. Some models have already successfully been integrated into the DST.

- The water purification pilot study proved to be a promising initiative and its future could be secured by successfully handing over the responsibility and future development of the activities carried out to a local partner.

- The first and only dendro-Chronological Laboratory has been installed.

- The first drinking water quality assessment facility (water quality laboratory) at local scale in SNPBZ has been consolidated and arrangements finalized to ensure its sustainable operation and management by the local stakeholders.

- The research and model development on solid waste management in SNPBZ has been concluded and its results presented during a workshop, during which the system dynamics discovered in this project were shared with the local actors, resulting in a tangible proposal for an improved management of solid waste in the park.

- The data gap analysis for modelling data and data for policy levers have been concluded. The final list of these data is published in Google group.

- The entering of modelling and policy metadata in Geonetwork is completed for most models. The respective modelling and policy data is being entered in Geonetwork.

RESULTS ACHIEVED IN 2008


HKKH Partnership
 for ecosystem management



- The collection of data required by indoor air pollution model has been completed thanks to a field mission carried out by Kathmandu University researchers, after a training course implemented by Prof. Annalisa Cogo, University of Ferrara. The mission also aimed at shedding light on the effect of indoor air pollution on people health condition in high altitude. According to the project capacity building framework, the training details and material have been uploaded to the training database.

- A research mission to collect data on water pollution in SNPBZ in order to complete the DGA for the water pollution models was successfully completed. Information on pollution through septic tanks in SNPBZ, water quality and auto-depurative capacity of rivers was obtained.

- Based on a workshop carried out in October in Kathmandu, the quantitative models have been updated (along with University of Naples and Simulistics).

- Following the installation of the dendro-chronological laboratory, a training course has been carried out. According to the project capacity building framework, the training details and material have been uploaded to the training database.

- The implementation of research activities to support the management planning process in the framework of CKNP Project has been concluded ensuring the coordination of other partners.

- Preliminary drafts of each research activity carried out in Bagrot Valley (Forest, Biodiversity, Wildlife and Glaciology) have been completed.

- Regarding the Chinese Institute IGSNRR, the training activities planned for the meteorological analysis and limnology have been completed.

- A substantial number of publications and presentations on the researches carried out have been developed and disseminated. Ev-K2-CNR took the lead on the finalization of the proposal for a special issue submitted to Mountain Research and Development.

- For China, a first report of the research carried out with IGSNRR has been published.

- Concerning the production of knowledge base aimed at supporting the SNPBZ management, the expansion of the bibliographic metadata base could be considered finished. A number of 1300 publications have been entered.

NEW AGREEMENT:

In October Ev-K2-CNR signed an agreement with the Sagarmatha National Park Buffer Zone Management Committee (SNPBZMC) to facilitate implementation and coordination of HKKH/Ev-K2-CNR activities carried out in SNPBZ).



2008 HKKH EVENTS

Executive Committee Meeting, Rome, June 30

The Executive Committee meeting was held on June 30 at the CNR Headquarters in Rome.

Objectives of the meeting were to:

- a) share the results delivered by each partner and ensure a common understanding of progress is developed and
- b) discuss and coordinate the planning for the last year and the 5th semester in particular. During the Planning meeting the fourth semester's progress was reviewed.

The Ev-K2-CNR General Director, together with Dr. Franco Salerno and Dr. Bastian Flury participated in the events to represent Ev-K2-CNR.

Workshop at FAO, Rome: Innovative Tools and Experiences in Mountain Ecosystem Management, July 1

At the FAO Headquarters in Rome, the Mountain Partnership Secretariat and the Hindu Kush-Karakoram-Himalaya (HKKH) Partnership Project hosted a workshop in which results of the first two years of the activities were presented. The workshop focused on the most innovative experiences carried out including: Development of a Decision Support Toolbox; Use of system dynamics for developing a socio-ecosystem model of Sagarmatha National Park through a collaborative network of national and international researchers; Implementation of management oriented

research; Application of Scenario Planning as a soft system tool for local level strategic planning; Partnership approach for protected area management planning. Dr. Franco Salerno and Dr. Bastian Flury participated on behalf of Ev-K2-CNR.

GEMM is dedicated to monitoring and environmental research in the Gulf region and takes advantage of the collaboration between established researcher and existing local structures working together in an exchange perspective.



RESULTS ARCHIVED IN 2008



GEMM aims to provide instrumental scientific support in solving the Arabian Gulf's major environmental problems. GEMM's contributions will be characterized by excellence in integrated environmental research and monitoring becoming a point of reference for research in region.

- During 2008, KISR and Ev-K2-CNR continued their relationship in order to define the operational programme for GEMM. Major 2008 milestones towards project implementation include:

- 4 Ev-K2-CNR visits to Kuwait;
- 1 visit to Kuwait by a CNR/Ev-K2-CNR delegation;
- definition of the operational programmes and budgets;
- discussion upon the inclusion of new scientific research;
- discussion about the opportunity to associate a Environmental Technology Park (ETP) ideal output of the scientific research on environment and preparation of a new Memorandum of Understanding to include ETP in the future activities.

- Both Ev-K2-CNR and CNR staffs met their KISR colleagues to define the operational programs and budgets in order to carry out the project as soon as possible.

- Due to some difficulties coinciding with international crisis, all the organisations decided to start with the following projects within the end of 2009:

- Use of Advanced InSAR techniques for evaluating the surface stability in Kuwait;
- Radiochemical approach for the monitoring and management of the environment.

- During the discussions and meetings, both Italian and Kuwaiti researchers agreed on new topics and opportunities of collaboration.

FUTURE PERSPECTIVES:

In the framework of GEMM Project and considering the contribution that this program could give to the environmental research in Kuwait and Arab Peninsula, Ev-K2-CNR and Polytechnic of Milan presented a concept regarding an Environmental Technology Park (ETP) to KISR and Kuwait Government. The ETP is a science and technology park focused on the environment and the techniques of sustainable development, unifying three aspects that are fundamental for the success of a new scientific pole: Research, Business e Entertainment. ETP operates in net with the most advanced environmental research centres of the world and its target is to become the engine of the economical development in the area. Environmental care is a must and will be more and more. This care is linked to an important business with a continuous growing trend. The concept of the Environmental Technology Park includes integration among the following business macro areas:

Delocalized Promotion, Expo Centre, Development & Technology, Meeting Centre, Services to enterprises and Entertainment. ETP configures as a space available to Italian companies and international consortiums committed in industry and environment-correlated services to promote their activities following methods of excellence.





Besides the integrated sustainable development / research projects described above, Ev-K2-CNR continues scientific investigations on specific topics to improve our knowledge in mountain and related fields.

2008 RESULTS

- Publication of the results of the project "Growth and nutritional status of Tibetan children at high altitude", led by Prof. Annalisa Cogo (executed during the scientific expedition on Mount Everest as part of K2-2004 project).

NEW FINDINGS: Growth and development are clearly affected by high-altitude exposure to hypoxia, nutritional stress, cold or a combination of these factors. Very little research has been conducted on the growth and nutritional status of children living on the Tibetan Plateau. The present study evaluated the environmental impact on human growth by analyzing anthropometric characteristics of Tibetan children aged 8-14, born and raised above 4,000 m altitude on the Himalayan massif in the prefecture of Shegar in Tibet Autonomous Region. Data on anthropometric traits, never measured in this population, were collected and the nutritional status was assessed. A reference data set is provided for this population. There was no evidence of wasting but stunting was detected (28.3%). Children permanently exposed to the high-altitude environment above 4,000 m present a phenotypic form of adaptation and a moderate reduction in

linear growth. However, it is also necessary to consider the effects of socioeconomic deprivation.

- Publication of the results of the project "Relationship between individual ventilatory response and acute renal water excretion in high altitude" led by Prof. Annalisa Cogo.

NEW FINDINGS: the individual ventilatory adaptation to high may influence renal water excretion in response to water loading. In healthy subjects the ventilatory response to high altitude influences water balance and correlates with kidney response to water loading. A higher ventilatory response at high altitude, allowing a more efficient water renal handling, is likely to be a protective mechanism from altitude illness.

- Publication of the results of the project "Acute mountain sickness in a subject with metabolic syndrome at high altitude", led by Prof. Annalisa Cogo.

NEW FINDINGS: Visitors at high altitude are increasing in age and co-morbidities. It has been suggested that hypertensive patients should not climb to an altitude higher than 3,000 m, because long-lasting hypoxia increases blood pressure in healthy volunteers due to sympathoadrenal system activation. However, it has been shown that patients with metabolic syndrome, which is characterized by hypertension, abdominal obesity, and lipid and glucose abnormalities, tolerate chronic exposure to moderate altitude with

SCIENTIFIC AND TECHNOLOGICAL RESEARCHES

MEDICINE AND PHYSIOLOGY



favourable effects on cardiovascular and metabolic variables and without physical problems.

- A new project "Mechanisms of Central Sleep Apnoea at High Altitude" was launched in Nepal under the coordination of Prof. Keith Burgess, Peninsula Health Care Pty Ltd (Sydney, Australia), to investigate the interaction of cerebral blood flow, ventilatory responses and central sleep apnoea at sea level and high altitude, and the effect of sympathetic nerve blockade on ventilatory responses during wakefulness.

- A new project "Effects of Pulmonary Hypertension on Aerobic Capacity in High Altitude", coordinated by Dr. Robert Naeije, was launched in Nepal to test the hypothesis that pulmonary hypertension and associated increase in right ventricular afterload limits exercise capacity in healthy subjects in hypoxic conditions. Secondary purposes were to study the effects of hypoxic exposure on cerebral blood flow autoregulation, renal function and on the membrane and capillary components of lung diffusion capacity. The selective ETA blocker antagonist, sitaxsentan was used to investigate the role of endothelin signalling in altitude related.

- A new project "Acute High-Altitude Effects on Nitric Oxide (NO) Products in Caucasian Low-Altitude Natives", was launched in Nepal under the coordination of Prof. Erzurum C. Serpil, University of

Cleveland, to determine if the production of nitrogen oxide change in Caucasians during the acclimation at high altitude.

- In October the 2nd Course on Mountain Medicine was carried out at the Pyramid Laboratory. 14 Italian doctors, 1 attender and 2 Nepalese doctors participated in the course coordinated by Prof. Corrado Angelini, University of Padua. During the course 10 theoretic lessons were given, together with Prof. Angelini, by Prof. Donatella Noventa and Dr. Andrea Ponchia.

ACKNOWLEDGEMENT:

From 2008 Ev-K2-CNR participates in the Global Alliance against chronic Respiratory Diseases of the World Health Organization (WHO). Prof. Annalisa Cogo, on behalf of Ev-K2-CNR, presented a project on the respiratory health of the high altitude population, during the General GARD Meeting which took place in Istanbul on May 30 and 31.



2008 RESULTS

- The project "Conservation of biodiversity: the large mammal community and the structure of bird Sagarmatha National Park (Solu Khumbu, Nepal) – Vanishing Tracks on the roof of the World", under the coordination of Prof. Sandro Lovari, University of Siena, prosecuted the activities through two missions on the field. In March and April, the researchers divided in Ornithologists and Mammologists carried out respectively the count of 3 species of Galliform (potential preys of snow leopard), and the inspection of the signs of snow leopard presence. In October the research group collected the signs of the presence of the snow leopard *Uncia*, and of the common leopard *Panthera Pardus*, and executed the count of the Himalayan Tahr *Hemitragus*.

NOTICE: Though, also in 2008, the Nepali government didn't accord permits to collect and export biological samples from hunted Himalayan tahr and from scats of snow leopards, as well as to trap and satellite radio-tag 2-4 snow leopards, it has been decided the continuation in 2009 emphasizing the impact of climate change on mammal biodiversity, both in the area of Sagarmatha National Park (SNP), in Nepal, and in the Central Karakorum National Park (CKNP), in Pakistan.

ENVIRONMENTAL SCIENCES



EARTH SCIENCES

2008 RESULTS

- The project "Tectonic collisional and post-collisional phases in the Himalayan chain", coordinated by Prof. Rodolfo Carosi, University of Pisa, prosecuted the activities of investigation in Nepal. Within the framework of this study, the sin and the post-collisional tectonic evolution of the Himalayan chain will be reconstructed along representative structural sections located in Nepal, Bhutan and Sikkim.

- Publication of the results of the project "Contribution to the Study of Geological Setting and Continental Collision Process in Northwest Himalaya and Karakorum", led by Dr. Franco Rolfo, University of Torino.



2008 RESULTS

- Publication of the results of the project "Aesthetics and ritual in the Himalayas", under the coordination of Dr. Martino Nicoletti.

- The project has, since 2006, launched several research linked to the following fields: publication of 3 works in the collection Cinnabaris – Series of Oriental Studies, launch the new series Liminalia – Sketches of Visual Anthropology and Aesthetics and research aimed to the publication of the first two works, launch of the ethnomusicological project Sound's Seeds and printing the first CD of the series: "The Path of Light: The Ritual Music of the Tibetan Bon".

THE PATH OF LIGHT: Before Buddhism was officially introduced in Tibet, around the seventh century CE, Tibetans professed an autochthonous religion, generally known as Bon. Ancient religious texts trace Bon's origins back to the figure and doctrines of the Buddha Tonpa Shenrab, who appeared in Olmo Lungring, the invisible realm of light identified with the regions of Central Asia, perceptible and accessible only to Enlightened Beings through the da' lam, the mystic "arrow way". Nowadays the Bon religion still survives, and has seen an extraordinary revival in the past few years thanks the indefatigable work of Tibetan refugees living in India and Nepal. Beyond its apparent resemblance to the Tibetan Buddhist tradition (especially to the ancient school of Nyingmapa), the Bon religion has a specific and autonomous ritual and doctrinal identity, almost wholly unknown to the western world. In bonpo religious culture, the reciting of liturgical texts – almost always accompanied by or with the intercalation of instrumental music – is the main pillar on which monastic ritual practice is founded.

As a rule, recitation follows three different patterns: the recto-tono form without any

specific intonation (sar don), the kind requiring intonation formulae (ke) and, lastly, the one involving the use of singing (gyer). As far as the instrumental dimension itself is concerned, bonpo tradition employs a series of musical instruments – most of which also found in the corresponding Buddhist rituality – that can be split into three main categories: instruments made to resound (trol wa), instruments played by striking (drung wa), and by blowing (bū pa)

- Publication of the results of the project "Aesthetics of Body. Performance and religion in Himalaya", led by Dr. Alessandra Campoli.

NEW BOOK: "Ritual Art on the Kingdom of Mithila. Traditional Paintings by Janakpur Women in Nepal", on iconography and rituals connected to divinities in the Dolpo region to back up and complete testimonies collected on the field in 2007, received final editing and was published in 2008.

- Publication of the results of the project "Tradition and Modernity in Tibet and the Himalayas", under the coordination of Prof. Hildegard Diemberger.

The project aims to make a detailed study on the tradition and modernity concept, through the analysis of the social, cultural and environmental life in the remote areas of Tibet and Himalayas.

- Publication of the results of the project "Gender Identity, Agricultures and Development in Uttarakhand", led by Dr. Federica Riva.

The research, which begins with an anthropological analysis of agricultural rituals, is focused on the symbolic meaning linked to gender roles in the Himalayan rural environment: spaces, images, taboo that define the social values and cultural restriction to the female intervention in agriculture.

ANTHROPOLOGICAL SCIENCES

SCIENTIFIC PUBLICATIONS

PUBLICATIONS FOR RESEARCH FIELD



Environmental Sciences 67%



Earth Sciences 10%



Anthropological Sciences 10%



Medicine and Physiology 10%



Multidisciplinary 3%

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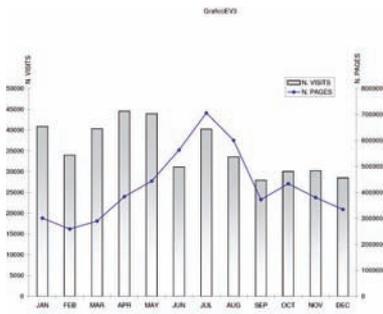
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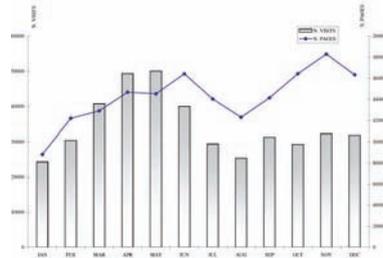
OUR WEBSITES

Ev-K2-CNR Press and Communications office manages a total of seven websites.



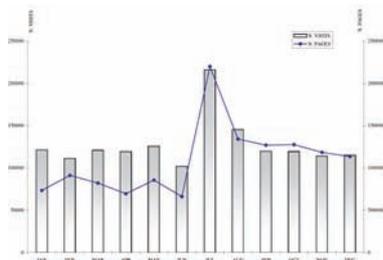
www.evk2cnr.org

It is the Ev-K2-CNR institutional website, available in English and Italian. It contains all the information on projects, activities and initiatives carried out. During the last months of the year, its graphical format has been revised and reconstructed.



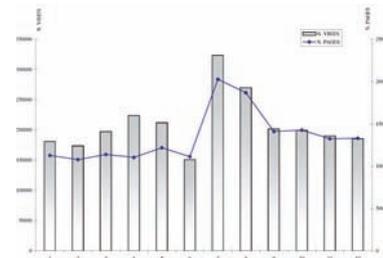
www.scienze.tv

The sites contains news, information and videos concerning a variety of disciplines, including: environment, energy, technology, IT, health and medicine, plants and animals, earth sciences and space.



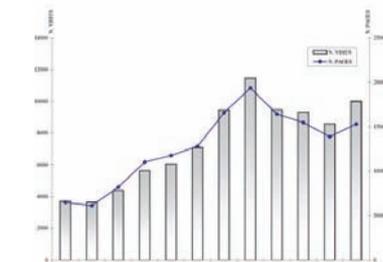
www.montagna.org

This portal dedicated to mountain enthusiasts contains useful information on all things mountain-related: high altitudes sports, hiking itineraries, traditional food, mountain medicine, mountain book.



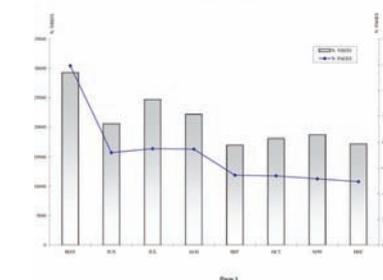
www.montagna.tv

The Italian web-TV dedicated to the world of mountains. It provides news, information and videos covering everything from mountaineering expeditions to mountain-related politics.



www.nepalmountainnews.com

One of the most visited websites in Nepal, this sites provides information on Nepal, local, politics, mountain tourism, expeditions.



www.share-everest.org

Managed from Ev-K2-CNR and inaugurated on April 1, this web-site is completely dedicated to the Share-Everest expedition. It provides generic information on the project itself, about the expedition team and news. The data registered from the South Col Automatic Weather Station installed are also available.



EV-K2-CNR ORGANIZATION



Ev-K2-CNR
THE ASSOCIATION
EXECUTIVE COMMITTEE



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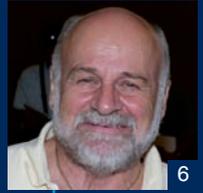
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EXECUTIVE COMMITTEE MEMBERS

- 1 Agostino Da Polenza**
President
- 2 Davide Zulian**
Vice President
- 3 Andrea Lami**
Scientific Coordinator
- 4 Marcello Mora**
Administration & Finance

HONORARY PRESIDENTS

- Paolo Cerretelli** **5**
- Kurt Diemberger** **6**



MEMBERS

- 7 Massimo Antoninetti**
- 8 Claudio Smiraglia**
- 9 Gianni Tartari**
- 10 Anna Milvia Boselli**
- 11 Annaluisa Cogo**
- 12 Michele Comi**
- 13 Hildegard Diemberger**
- 14 Andrea Laganà**
- 15 Sandro Lovari**
- 16 Giorgio Poretti**
- 17 Gian Pietro Verza**
- 18 Martino Nicoletti**

NEW SCIENTIFIC COUNCIL



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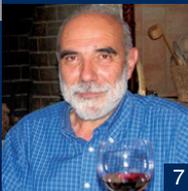
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CO-CHAIRS

- 1 Riccardo de Bernardi**
CNR – ISE
- 2 Leonardo Gastaldi**
CNR



MEMBERS

- 3 Tommaso Anfodillo**
Padua University
- 4 Paolo Bonasoni**
CNR – ISAC
- 5 Francesco Bosello**
Foundation ENI Enrico Mattei, University of Milan
- 6 Silvano Cavalli**
Dionex S.p.A.
- 7 Sergio Chiesa**
CNR – IDPA
- 8 Annalisa Cogo**
University of Ferrara
- 9 Hildegard Diemberger**
Cambridge University
- 10 Maurizio Gallo**
Ev-K2-CNR Committee
- 11 Francesco Loreto**
CNR – IBAF
- 12 Maria Teresa Melis**
University of Cagliari
- 13 Claudio Smiraglia**
University of Milan
- 14 Gianni Tartari**
CNR – IRSA
- 15 Elisa Vuillermoz**
Ev-K2-CNR Committee

BILATERAL TECHNICAL COMMITTEE



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MEMBERS

- 1** Andrea Lami
- 2** Gianni Tartari
- 3** Giorgio Poretti

EV-K2-CNR EXTERNAL RESEARCH UNIT MANAGEMENT COMMITTEE



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RESPONSIBLE EXTERNAL
RESEARCH UNIT

- 1** Andrea Lami
CNR - ISE



MEMBERS

- 2** Giuseppe Cavarretta
CNR – DTA
- 3** Franco Prodi
CNR – ISAC
- 4** Agostino Da Polenza
Ev-K2-CNR Committee
- 5** Riccardo de Bernardi
CNR - ISE

EV-K2-CNR COLLABORATORS



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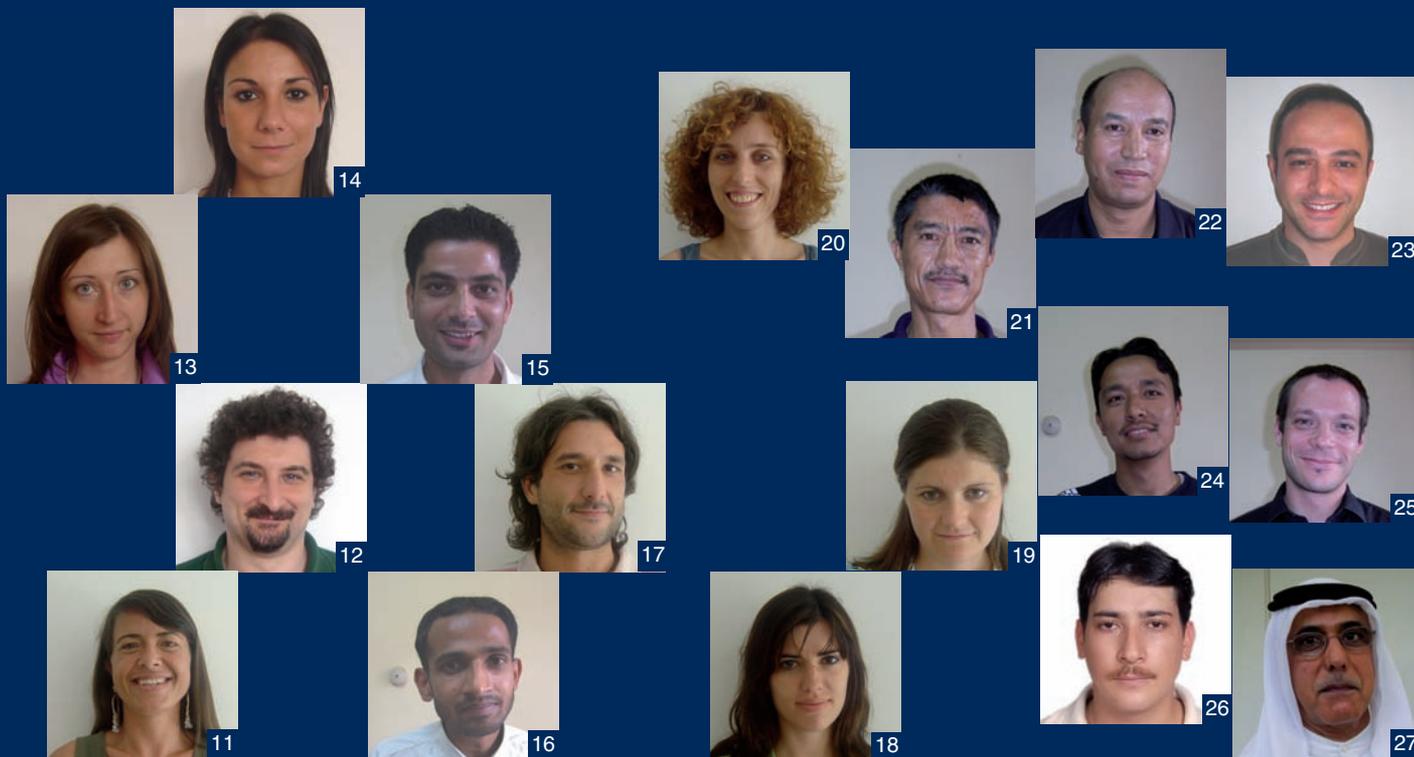
TOP MANAGEMENT

- 1 Agostino Da Polenza**
President
- 2 Beth Schommer**
General Director
- 3 Elisabetta Rossoni**
Secretary to the President
- 4 Emanuela Brindisi**
President Assistant



LOGISTIC AND ADMINISTRATION

- 5 Alberto Cortinovis**
Sole administrator
- 6 Angela Milesi**
Head Administration Office
- 7 Elena Vismara**
Administration Office Assistant
- 8 Gian Pietro Verza**
Ev-K2-CNR Technical Office
- 9 Daniela Milanesi**
Logistics and Secretariat
- 10 Maurizio Gallo**
General Logistics Manager



PRESS AND COMMUNICATIONS

- 11 Francesca Steffanoni**
Director
- 12 Wainer Preda**
Editorial Director
- 13 Sara Sottocornola**
Editor in Chief
- 14 Valentina D'Angella**
Editorial Staff
- 15 Surendra Paudyal**
Nepali website journalist
- 16 Suvash Sharma**
Nepali website journalist
- 17 Valerio Carne**
Communication Office Assistant

RESEARCH AND DEVELOPMENT

- 18 Chiara Belotti**
Executive Director
- 19 Elisa Vuillermoz**
SHARE Executive Cordinator
- 20 Emanuela Manfredi**
CEOP-HE Secretariat
- 21 Krishna Das Shrestha**
Nepal Resident Office Assistant
- 22 Hari Shrestha**
Nepal Resident Representative
- 23 Luca Listo**
KT Project Coordinator
- 24 Sudeep Thakuri**
HKKH Partnership Technical Support Staff
- 25 Bastian Flury**
Nepal Activities Coordinator
- 26 Riaz UI-Hassan**
Pakistani Resident Representative
- 27 Abdulmagid Alsheikh**
Kuwait Resident Representative

PYRAMID STAFF



TECHNICAL STAFF

- 1 Laxman Adhikari**
Manager of Nepali Staff
- 2 Kaji Bista**
Manager of Nepali Staff
- 3 Pema Sherpa**
Pyramid Technician
- 4 Lhakpa Tshering Sherpa**
Pyramid Technician
- 5 Lhakpa Tenzi Sherpa**
Pyramid Technician
- 6 Tenzing Sherpa**
Pyramid Technician

LODGE STAFF

- 7 Kesar Bahadur (KC)**
Cook
- 8 Raj Bahadur Rai (Jettha)**
Lodge Staff
- 9 Vesh Magar**
Lodge Staff
- 10 Dorje Tamang**
Lodge Staff



BECOME OUR SPONSOR

From its establishment, the Ev-K2-CNR Committee has been making collaboration with the private sector a strong point of its activities. Thanks to the development of projects with technological spin-offs in various fields and successful co-marketing initiatives, the image of the Pyramid – associated with some prestigious Italian brands – has traveled around the world.

Ev-K2-CNR offers a unique opportunity for private companies who believe in our value and want to support research which benefits humankind and the environment: transform science into a business opportunity.

How you can help us / How we can help you:

1. support to our projects as part of a Corporate Responsibility initiative, communicating your responsible actions to the public and shareholders;

2. cause-related marketing, where commercial and social objectives meet;

3. joint research applied to your business: use our know-how, facilities and two decades of experience to develop, test and improve your products.

For more information, contact corporate@evk2cnr.org.

HOW TO SUPPORT OUR WORK

STATEMENT OF ASSETS AND LIABILITIES

ASSETS	2008
Intangible fixed assets	370.088,66
Tangible fixed assets	3.604.486,57
Participations	502,00
Medium and long term credits	1.200,00
Credits from state	7.189,00
Sundry credits	544.690,17
Accrued income and deferred expenses	4.620,00
Banks current accounts	197.558,26
Cheques, money and cash values	4.981,84

TOTAL ASSETS 4.735.316,50

LIABILITIES	2008
Devaluation fund / intangible fixed assets	27.110,42
Devaluation fund / tangible fixed assets	225.111,83
Capital and reserves	3.798.938,15
Debts to suppliers	495.602,63
Debts to in land revenue	3.783,35
Sundry debts	37.130,53
Accrued expenses and deferred income	137.152,45

TOTAL LIABILITIES 4.724.829,36

Tied surplus for projects 10.487,14

TOTAL BALANCE 4.735.316,50

All amounts in Euro

PROFIT AND LOSS ACCOUNT

EXPENSES	2008
Purchase of goods and services	2.230.602,52
Amortization	45.362,78
Personnel	9.317,58
Various management burdens	44.501,82
Financial burdens	18.070,68
Other extraordinary burdens	22.507,04
Fiscal burdens	591,72
TOTAL EXPENSES	2.370.954,14
Tied surplus for projects	10.487,14
TOTAL BALANCE	2.381.441,28

INCOME	2008
Contribution from Italian organization	1.694.552,66
<i>CNR Share Project</i>	553.798,30
<i>CNR Karakorum Trust Project</i>	1.128.754,36
<i>Other public contribution</i>	12.000,00
Contribution from international agencies	539.027,66
<i>UNEP Share Project</i>	47.388,55
<i>UNEP Karakorum Trust Project</i>	23.951,00
<i>IUCN - DSS HKKH</i>	467.688,11
Contribution from private donors	135.971,74
Other income	2.176,50
Financial income	2.282,63
Other extraordinary income	7.430,09
TOTAL INCOME	2.381.441,28

All amounts in Euro

NATIONAL AND INTERNATIONAL COLLABORATING ORGANIZATIONS:

- Aga Khan Rural Support Programme – Pakistan
- Al-Arfaj Group of Companies – Kuwait
- Albert-Ludwigs University, Faculty of Forest and Environment - Germany
- Alpine Club of Pakistan
- CESVI - Italy
- Climate Prediction Program for the Americas (CPPA) NOAA Climate Program Office, Silver Spring, Maryland, MD - USA
- CNES, Service DORIS – France
- CNR - Institute for Atmospheric and Climate Sciences – Italy
- CNR - Institute for Coastal Marine Environment - Italy
- CNR - Institute for Electromagnetic Sensing of the Environment – Italy
- CNR - Institute for the Dynamics of Environmental Processes – Italy
- CNR - Institute of Atmospheric Pollution - Italy
- CNR - Institute of Ecosystem Study – Italy
- CNR - Institute of Inorganic Chemistry and of the Surfaces - Italy
- CNR - Institute of Intelligent System for Automation - Italy
- CNR - Institute of Marine Sciences – Italy
- CNR - Institute of Molecular Bioimaging and Physiology – Italy
- CNR - Methodological Chemistry Institute - Italy
- CNR - Water Research Institute – Italy
- CNRS, Laboratoire de Glaciologie et de Géophysique de l'Environnement – Grenoble, France
- CNRS, Laboratoire de Météorologie Physique - Clermont-Ferrand, France
- Department of Geography, College of Science, University of Idaho, Moscow, ID - USA
- Department of Hydrology and Meteorology – Nepal
- Department of National Parks and Wildlife Conservation – Nepal
- Environment Public Authority – Kuwait
- Environmentalist Association “Umana Dimora” – Italy
- Erasme Academic Hospital, Department of Cardiology - Belgium
- Free University of Brussels, Faculty of Medicine, Department of Pathophysiology - Belgium
- Friends of Lorenzo Fellowship - Italy
- Institute of Geographical Sciences and Natural Resources Resource, Chinese Academy of Sciences, Beijing - China
- Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing - China
- International Centre for Integrated Mountain Development– Nepal
- Italian Glaciological Committee – Italy
- Italian Institute for Africa and East (ISI AO) - Italy
- Italian National Research Council – Italy
- Karakorum International University, Gilgit – Pakistan
- Kathmandu University – Nepal
- Kuwait Institute for Scientific Research – Kuwait
- LSI Lastem – Italy
- Manly Hospital, Department of Critical Care, Manly - Australia
- Ministry of Culture, Tourism and Civil Aviation – Nepal
- Ministry of Education, University and Research – Italy
- Ministry of Environment – Italy
- Ministry of Environment – Pakistan
- Ministry of Environment, Science & Technology – Nepal
- Ministry of Foreign Affairs – Italy
- Ministry of Forest and Soil Conservation – Nepal
- Ministry of Kashmir Affairs and Northern Areas – Pakistan
- Ministry of Minorities, Culture, Sports, Tourism and Youth Affairs – Pakistan
- Mongolia and Inner Asia Studies Unit, University of Cambridge– UK
- Mountain Glacier Protection Organization - Pakistan
- NASA Commercial Space Center – Washington D.C., USA
- National Institute of Oceanography and Applied Geophysics – Italy
- National Metrological Research Institute – Italy
- NCAR/Earth Observing Laboratory (EOL) – USA
- Nepal Academy of Science & Technology – Nepal
- NOAA, Surface Radiation Research Branch, Air Resources Laboratory – Boulder, CO, USA
- Northern Areas Department of Forests – Pakistan
- Pakistan Meteorological Department - Pakistan
- Polytechnic of Milan - Department of Architecture – Italy
- Resources Himalaya Foundation – Nepal
- Rural Support Programmes Network - Pakistan
- Sagarmatha National Park – Nepal
- Sagarmatha Pollution Control Committee – Nepal



- School of Chemistry, University of Melbourne, Melbourne - Australia
- Scripps Institution of Oceanography (SIO), La Jolla, CA – USA
- St-Elisabeth Hospital, Department of Pneumology- Belgium
- The World Conservation Union
- Tribhuvan University – Nepal
- Uganda Meteorological Department, Kampala – Uganda
- Uganda Wildlife Authority, Kampala – Uganda
- United Nations Environment Programme
- University College London, London - UK
- University of Brescia - Department of Civil Engineering, Architecture, Land and Environment – Italy
- University of Cagliari - Department of Earth Sciences - Italy
- University of Chile, Department of Geophysics, Santiago – Chile
- University of Ferrara - Department of Respiratory Diseases - Italy
- University of Innsbruck - Institute of Zoology and Limnology - Austria
- University of Milan “Bicocca” - Department of Environment and Earth Sciences - Italy
- University of Milan - Department of Biomedical Sciences and Technologies - Italy
- University of Milan - Department of Earth Sciences “Ardito Desio” - Italy
- University of Milan - Department of vegetable production - Italy
- University of Milan - Institute of Human Physiology – Italy
- University of Milan - Institute of Respiratory Diseases – Italy
- University of Otago, Department of Physiology, Dunedin - New Zealand
- University of Napoli “Federico II” - Department of Arboriculture, Botany and Plant Pathology - Italy
- University of Padova - Department of Environmental Medicine and Public Health, Hygiene Division - Italy
- University of Padova – Department of Human Geography – Italy
- University of Padova - Terrestrial and Agro-Forestry Systems Department - Italy
- WWF Pakistan
- University of Pavia - Department Geographic History; Medical Clinic 1 - Italy
- University of Perugia - Department of Economy, Finance and Statistics - Italy
- University of Pisa - Department of Earth Sciences - Italy
- University of Siena - Department of Environmental Sciences - Italy
- University of Sydney, Department of Medicine – Sydney
- University of the Witwatersrand - School of Geography, Arch. & Environment Studies – South Africa
- University of Tokyo, Department of Civil Engineering - Japan
- University of Torino - Department of Mineralogical and Petrologic Sciences - Italy
- University of Trieste - Department of Mathematics – Italy
- University of Tsukuba, Graduate School of Life and Environmental Science – Japan
- University of Urbino - Department of Chemical Sciences – Italy
- World Meteorological Organization
- WWF Nepal



Ev-K2-CNR Committee

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