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"Focus on glaciers": a geo-photo exposition on the vanishing beauty.

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Abstract. The encounter of scientific research, respect for the environment, and passion for photography created, throughout the years, an exceptional heritage of images shot by researchers and technicians of the National Institute of Oceanography and Applied Geophysics - OGS, during the scientific expeditions all over the world. The OGS researches in the fields of Earth and Ocean Sciences, to widen the scientific knowledge, to raise the environmental awareness and conservation of natural resources, and to mitigate the natural risks.

In this paper, we describe the exposition of artistic pictures that we set up to draw the attention of the general public to the effects of global warming.

In our exhibition, the glaciers run the performance, with the infinite grey-blue shadows, the shapes, worthy of a great sculptor, the contact with the rock or the sea, sometimes sharp and dramatic, sometimes so nuanced to appear as a water-colour. The beauty of the images attracts the attention of the public on unknown realities and allows us to document the dramatic retreat of the Alpine glaciers, and to show the majesty of the Arctic and Antarctic landscapes jeopardised by the climate change. Glaciers are, in fact, almost all in a negative mass-balance, and with the present warming trend, they will vanish.

The authors were present at the exhibition, and the visitors could satisfy their curiosity on the research issues, the context in which the pictures were shot, technical details, or aesthetic choices. The choice of the location allowed to reach a broad public of adults, in the working-age, often challenging to reach. The paper presents a summary of this experience, of importance both for the authors and the visitors.

1 Introduction

In September 2015, the United Nations General Assembly approved the Agenda 2030 for Sustainable Development, i.e., a plan of actions that institutions, stakeholders, consumers, and citizens have to take, over the future years, to achieve sustainable development in 2030. Agenda 2030 is composed of 17 Goals for Sustainable Developments in areas of utmost importance for humanity and the planet. The action against climate change is at the heart of Goal 13 (*Take urgent action to combat climate change and its impacts*), and education and awareness on climate change are among the activities needed to achieve the goal.

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At the end of 2019, the interest in climate change and global warming dangers has become very popular. The actions of Greta Thunberg, and the movement "Fridays for future" played a primary role to increase the awareness of people and to promote the public debate on this issue. A couple of years ago, this was not the case. Even if there was a consensus of over 80% among scientists on anthropogenic global warming (AGW), the public opinion was not aware of such a large percentage. Hence, the primary reason for denying AGW in public debates was the lack of agreement of the scientists (Cook et al., 2014, and references therein). The problem of communication between scientists and the general public is an essential issue in many science fields. The recent paper of Lacchia et al. (2019) analyses the difficulties for the geoscientists to communicate to non-geoscientists. It results that the general public is often more focused on the negative environmental impacts of the geoscience issues than on their role, essential to energy supply, but also environmental protection. Therefore, the authors suggest to the geoscientists to include feelings and affect, as, e.g., their motivations for their research, to reach a broader audience in agreement with the recommendations for science communication (Dahlstrom, 2015). Effective communication with a large audience can ensure the broad support necessary for policy-makers to take the necessary actions, once convinced of the scientific results (Liverman, 2008).

The combination of Science and Art is becoming increasingly popular to improve the ways science is communicated to the public (e.g., Malina, 2010). Among the various communication strategies, photography is a practice of straightforward communication to catch the interest of the public on critical questions easily. Photography is the perfect combination of art and science; it attracts people from all walks of life for all different reasons. The proliferation of smartphones and software applications has made taking photos a big part of our lives. Every image can be seen differently by various people, creating emotional responses in the viewer. Great photos can come from a scientific or artistic approach. The creation of the image requires emotion and imagination, but creativity and beauty can be engineered in post-production using editing software and the knowledge gained from studying what people like. Great photos often come from a combination of both art and science (Stone, 2017).

Hence, considering the large number of pics taken during OGS various scientific surveys, many in the polar areas, and following the recommendation of the Agenda 2030, we thought it could be an excellent opportunity to set up a photographic exhibition to convey a message on the effects of climate change.

Since the polar areas and the mountain environments at high altitudes (above 2500 m) have shown to react particularly rapidly to climate change (Shepherd et al., 2018; 2019), we focussed on images of glaciers, ice caps, and icebergs as an efficient way of communicating the perception of the fragility of that environment, jeopardised by the climate changes. The images were taken during the scientific research activity or field activities, and they reflect the intimate attitude of the person in front of nature and the artistic side of the scientist. During the exhibition, the visitors could satisfy their curiosity on the research issues, the context in which the pictures were shot, technical details, or aesthetic choices. This paper presents a summary of this experience, of importance both for the authors and the visitors.

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2 OGS mission and strategic view

The National Institute of Oceanography and Applied Geophysics - OGS is a public research institute sponsored by the Italian Minister of University and Scientific Research (MUR). It is active in the research fields of geosciences of the solid earth and oceans to widen the scientific knowledge, to raise the environmental awareness and conservation of natural resources, in a sustainable development view, and to mitigate geohazards. The OGS employs a staff of approximately 300 people, and it promotes researches through the joint use of its main research infrastructures (i.e., vessels and an aircraft, monitoring networks, onshore and offshore).

Due to its long-term collaboration with the energy industry, the OGS developed high-technology competence and skills in acquiring, processing, interpreting, and modelling onshore (surface and borehole) and offshore geophysical and oceanographic data. The OGS interdisciplinary character gives precious contributions to the challenges of the present time. In particular, both in global and local change studies enables assessing the current and past state of the environment to define future scenarios, considering natural forcing and human activities, also exploiting the most advanced computing technologies for climate model data production and analysis. Analogously, the various disciplines contribute to the studies and activities related to one of the strategies to reduce the greenhouse effects: the CO_2 geological storage.

In agreement with the general principles of the European Charter for Researchers and Code of Conduct, the OGS is extensively engaged in dissemination and communication activities. The OGS strategy of communication includes organizing and participating in public events to maintain a dialogue with the stakeholders, the citizens and the young people and to share knowledge and outcomes that may be of help to society.

3 The visual communication and the exhibition

The main elements of the communication process derive from Shannon's (1948) and Berlo's (1960) models. They are *sender* (the person transmitting the message), *receiver* (the person receiving the message), *message* (the communication subject), *channel* (the communication vehicle), and *context* (where, how, and when the message is sent). The difficulties of the scientific community to communicate their research results and consequences are well known. This is particularly true when the *message* concerns the environmental problems, and it is addressed to the general public or the political class. The photographic books and photographic exhibitions are a precious opportunity for knowledge because they allow observing the images with slower and more reflective reading time. The photography, as a *channel* of communication, uses a universal language that can reach a large number of people, especially in our days, where the bulk of the information passes through images. Indeed, photography is much more immediate than a text, and it provides a quantity of information that can be perceived at one glance, and that can be quickly memorized. Therefore, we considered photography as an efficient *channel* to communicate the need for protecting the environment, jeopardized by global change. When selecting the pictures for the exhibition, we preferred high-quality pictures evoking emotions on the natural beauty that could be lost, more than document in time-lapse the same scene to show the ice melted with time. We aimed to transmit a positive message of hope that

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something we can still do to reduce the climate crisis. On the other side, we could not document the transformation over the years of different places, as photos were often shot during unique short-term scientific campaigns. Among the elements of visual communication, the *context* is as important as the *message* and the *channel*. In our case, the photographic exhibition was set up in a public place very passed through. This choice of location allowed us to reach the working-age public (18-64 years), involving people that generally do not attend public conferences or other dissemination events. The exhibition, intended as a union of multiple images, each of which of easy and quick perception, produces a strengthening of the *message*, even in the face of a fleeting passage as it can be in the public place, we have chosen.

4 The exhibition

The photographic exhibition "Focus on glaciers" took place in Trieste in October 2016, in the lobby of the early-XIX century neoclassical palace, initially seat of the Stock Exchange (established by Maria Theresa of Habsburg), now headquarters of the Trieste Chamber of Commerce. The exhibition was scheduled among the public events of the *Settimana del Pianeta Terra* (Figure 1), (in English *The Week of Earth planet*), an Italian scientific festival that through events diffused all over the Italian territory, aims to promote geosciences and to increase awareness for the reduction of the natural risks.

The pictures of the exhibition were selected after an OGS internal call to collect photos focused on glaciers, shot during scientific expeditions and field trips in the polar areas, or other regions. Indeed, the OGS researchers and technicians, throughout the years, collected an exceptional heritage of pictures, working as both scientist and artist. For each shot, with the time and scientific context, the authors had to provide their motivations and a comment. A committee, formed by geoscientists expert in photography and with communication skills, selected the photos best suited to the exhibition, following the principles expressed in chapter 3. Aesthetic and technical criteria lead the choice of the pictures, and particular attention was also paid to the message that the image could convey to the public. The pictures of the showing were 26, partly from the two polar regions, but also from the Alps and other mountainous regions. The exhibition was freely accessible to whom every day attends or works at the Chamber of Commerce. At the exhibition opening and, on the occasion of some conferences, the authors of the photos were present, and direct interaction with the public was possible (Figure 2). In the following, we present the areas were the pics were taken, grouped in two main domains: the polar regions, and the mountain chains (Figure 3).

4.1 The polar regions

Polar amplification - i.e., a more significant climate change near the poles than in the rest of the hemisphere - has been documented in climate change studies, both from historical observations and model simulations and its causes are still matter of discussion (see Stuecker et al., 2018 and reference therein). In Antarctica, from 1992 to 2002, the total average ice loss was 43 gigatons per year, but from 2012 to 2017, it has accelerated to an average of 220 gigatons per year (Shepherd et al. 2018). The Arctic region is warming even faster: the Svalbard Archipelago has experienced the fastest air temperature

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increases in recent decades (Nordli et al., 2014), and climate model projections show this trend will keep going until the end of the XXI century (Førland et al., 2012). Further, it has been estimated that glaciers in western Svalbard are losing mass at an accelerating rate, which implies an increased contribution to sea level (Kohler et al., 2007; Nuth et al., 2010). In a few years, the Arctic sea ice will disappear during the summer months, opening new routes: the routes from the Far East to Europe can be shortened by sailing along the Siberian coast instead of via the Suez Canal. The easy access to the Arctic Sea also makes the oil fields beneath its waters very attractive, although their exploitation can pose high environmental risks. The melting of the ice in the Ross Bay in Antarctica, testified by the OGS researchers in 2018, enabled the acquisition of data in areas never explored before. However, the polar sea ice helps to regulate Earth's climate, reflecting more of the Sun's energy into space than does dark water. Without sea ice, Earth absorbs more solar radiation, implying an even warmer climate. Nordic peoples, such as the Eskimos, risk seeing their livelihoods compromised, and animal species such as the white bear are threatened with extinction (Giovannini and Speroni 2019), while the Svalbard Global Seed Vault (a seed-bank to prevent accidental loss of diversity) is in danger.

4.1.1 Antarctica

The OGS has researched in Antarctica continuously since 1988, with funding from the *Programma Nazionale di Ricerche in Antartide* or PNRA, directed by the MUR and from Europe within the programs of the *Scientific Committee for Antarctic Research* (SCAR) and the *International Arctic Science Committee* (IASC). High skills in the geological, geophysical, and biological fields have matured during many geophysical campaigns in Antarctica with the research vessel (R/V) *OGS Explora*, or with other research vessels. In 2019 the OGS acquired the R/V "Laura Bassi", ruled in cooperation with the *Consiglio Nazionale delle Ricerche* (CNR) and the *Agenzia Nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile* (Enea). Still, the OGS participated to several international projects on the plateau, in remote field operations, at the Italian Bases (Mario Zucchelli and Concordia), and ruling, in collaboration with the Argentine Antarctic Institute, the Antarctic Seismographic Argentinian Italian Network since 1992 (Russi et al., 2010).

In Antarctic campaigns, the researchers and technicians stay on board for about two months, and together with data or samples, they bring home many pictures of the beautiful landscapes met during the cruise or the fieldwork. Our exhibition included pictures from the XXI, XXVIII, XXIX, XXX, XXXI campaigns (Figure 3a, Figures 4-7). The icebergs, seracs, and ice fronts are the main characters (Figures 4-6), with the alternation of blue ice, due to the compaction and compression of the air bubbles, with snow and white ice (Figures 4a, d; 5; 6a-c). Figure 7 shows the single animated subject of the whole exhibition: a lonely, small penguin on an iceberg, in the mid of Antarctica.

4.1.2 Svalbard Islands

The OGS started research activity in the Svalbard archipelago already in 1971. Then, since 2001, its researchers were involved in several research cruises (four with the R/V OGS Explora, but also with Norwegian, German, Spanish vessels,

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also thanks to the Eurofleets project), as well as on land, within international projects (Figure 3 b). The Svalbard treaty bans military activity in the Arctic, but not the research bound to mining or hydrocarbons exploration. It is the case of the research project funded by Industry & the Norwegian Research Council "Paleokarst Reservoirs: An integrated 3D approach to heterogeneity, reservoir and seismic modelling", aimed to study the structure and physical properties of an onshore proxy of the reservoirs at depth below the Barents seafloor. Within this project, the focus was on the study of the permafrost, and the researchers were on a remote camp onshore (Figures 8b,d). Other projects focussed on the present and past dynamics of ice-streams (fast-flowing ice on continents) and glaciogenic system, on the reconstruction of the palaeoclimate, and the identification of biological oasis associated to seepages and/or presence of gas-hydrates. In most of these cases, the photos were taken from research vessels, during transfers or sailing back to land, after days or months spent on-board, often with rough sea or blind in the thick fog, with the snowy mountains appearing like a mirage (Figures 8a, c; 9a, b).

During a field camp in the Skanskbukta bay (Figure 9 c), encircled by breathtaking mountains, with small waterfalls and creeks, the OGS researchers also witnessed several huts, vivid memories of the human activities at the beginning of the last century.

4.2 Mountain chains: the Alps and the Rocky mountains

For the first time, the International Panel on Climate Change (IPCC) has released in 2019 a report on the present impacts of climate change in the world's mountains. The mountain surface air temperature in Western North America, European Alps, High Mountain Asia increased at an average rate of 0.3°C per decade over recent decades, hence, outpacing the global warming rate (IPCC, 2019). The snow-cover duration, depth, and extent reduced on average by 5 days per decade, especially at lower elevations. In 2006–2015, the mass change of the glaciers in all the mountain regions (excluding the Canadian and Russian Arctic, Svalbard, Greenland, and Antarctica) was about -490 ± 100 kg $m^{-2}yr^{-1}$ (123±24 Gt yr^{-1}). The regionally averaged mass budgets were mostly negative (less than -850 kg $m^{-2}yr^{-1}$) in the southern Andes, Caucasus and central Europe, and least negative in High Mountain Asia (-150±110 kg $m^{-2}yr^{-1}$). Sparse and unevenly distributed measurements show an increase in permafrost temperature, for example, by 0.19±0.05ºC on average for about 28 locations in the European Alps, Scandinavia, Canada, and Asia during the past decade.

4.2.1 The Alps

Between the end of the 19th and the beginning of the 21st century, the average air temperature in the Alps rose by about 2 °C, more than twice the temperature observed in the entire northern hemisphere. Over the same period, rainfall has shown an increasing trend in the northern part of the Alps, and a decreasing trend in the southern sector.

Since the end of the Small Ice Age (around 1850), there has been a general retreat of glaciers in the Alps, interrupted by two short-lived phases in the 1920s and 1970s. Overall, it has been estimated that the glacial areas in the Alps have been reduced by about half since 1850. The rate of reduction has accelerated since the 1980s, overall on the southern side of the chain.

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According to the cadastre of Italian glaciers, completed in 2015, in fifty years, the total area has decreased from 527 to 368 square kilometres. This has led to the extinction of 180 glaciers. Nigrelli et al. (2015) related the recent evolution of glaciers with the climatic variations documented by the meteorological stations, providing an accurate picture of the fast regression of the glaciers, and quantifying the relationships between climate and glaciers.

However, we can hypothesise that, at least in some cases, the combined action of the increase in temperature and the decrease in precipitation after 1980 influenced the evolution of glaciers. The extent of glacier decline in the face of the observed climatic trends allows us to assume a further regression of glacier fronts in this sector of the Alps in the near future.

In the frame of the WISSLAKE project, financed by the PNRA, the OGS researchers performed geophysical tests on the Alpine glaciers to evaluate the feasibility of the methods in quantifying the glacier thickness and structure (Figures 10a, b, c; Picotti et al., 2017). The geophysical methods have been used on the glaciers of the Adamello and Ortles-Cevedale massifs (Italy) and the Bernese Oberland Alps (Switzerland), as well as on the Whillans Ice Stream (West Antarctica). Many site inspections were done in the Alpine chain to find suitable sites for the application of these techniques. The retreating glaciers bare their structure and crevasses, creating fascinating graphic effects (examples from the Mont Blanc, Figures 11 b, c).

4.2.2 Canada

The annual and seasonal average temperatures across Canada increased, with the most significant warming in the winter season. In particular, northern Canada recorded an increase in 1948-2016 of 2.3° C compared to the 1.7° C of the whole country.

Unlike the Alps, the precipitation averaged over the country has increased by about 20% from 1948 to 2012 (Vincent et al., 2015). Already in 2007, the volume loss of glaciers was estimated as 22.48 ± 5.53 $km^3 yr^{-1}$, but recently the retreat further accelerated, so that a glacier as the Peyto Glacier in the Rocky Mountains and part of Banff National Park has lost about 70 per cent of its mass in the past 50 years. To use geophysical methods to study the retreat of glaciers around the world, the OGS researchers performed some site inspections also in Banff National Park (Figure 11 a).

5 Final remarks

The IPCC assessed that limiting global warming to 1.5º C requires rapid, far-reaching, and unprecedented changes in all aspects of society (IPCC, 2013). Limiting global warming to 1.5ºC compared to 2ºC would imply clear benefits to people and natural ecosystems while ensuring a more sustainable and equitable society. The route towards a sustainable world requires a profound change in the way we deal with the planet's resources, which involves everyone: institutions, businesses, consumers, citizens, called upon to create together a new model of development. In 2020, it is there for everyone to see that an increasing number of people are making small, but effective, steps in the direction of plastic and emission reduction, energy-saving, and environment protection. The so-called 'Greta effect' led wealthy philanthropists and investors from the

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United States, donating almost half a million pounds to establish the Climate Emergency Fund (e.g., Taylor, 2019). The idea is to spread the money widely, to lots of groups, in relatively small increments for small but effective actions.

The OGS exhibition "Focus on glaciers" anticipated this philosophy using the beauty of the pictures, the impression of majesty, and peace that the glaciers inspire in the visitors to vehiculate the message of environmental protection. In the past years, the OGS has already participated in photographic exhibitions of research activities in Trieste, for the Night of Researchers (2013) and in Rome, to celebrate the first 30 years of the Italian research in Antarctica (2015). The present one was the first time that the OGS research pictures were used for sensitising people on climate change themes. A critical aspect was that the scientists engaged with the arts to improve the ways science is communicated to the public, but also they were actors in the artistic production, following one of the ways that art and science can work together (Malina, 2010).

The message was vehiculated through the emotion of single, high-quality images, representing the beauty in danger of vanishing. The criterion of high-quality from a technical point of view, but also of impact strength drove the accurate selection of the images. This choice was aimed to obtain a fast and immediate reading of the message by the receivers. It is the case of the collapsed icebergs shown in Figure 5a and 5d and of Figure 6a, of the blue-ice iceberg in the rough sea of Figure 4d; and the lonely penguin of Figure 7, a symbol of all the animal species in danger of extinction due to the climate crisis. The picture of Figure 8d and the graphic effects shown in Figures 11 b, c well represent the glacier melting and future aspect. The multiple vision of the 26 pictures produced a strengthening of the *message* that the viewer perceives, even in a fleeting passage in a public place.

The exhibition was opened in 2016, from October 17th to October 31st (i.e., one week beyond the end of the "*Settimana del pianeta Terra*"- *The Week of Earth planet*). The location seat of the lobby of the Chamber of Commerce of Trieste was an excellent choice: about 100 people every day visit the place for their business so that we can quantify the engaged audience in about 2000 persons (working-age population) of different cultural level and nationalities. Moreover, during the opening of the exhibition and some conferences, 250 people had the unique opportunity of interacting with the authors directly. People typically ask how climate change will affect their life. Although the immediate answer may be that climate change is now a crisis, the last thing to do, as a communicator, is making people feel powerless. The message of equal importance is: 'we have to act fast, and we can do it!'. Vivid conversations occurred near the panels hosting the pictures, while the visitors satisfied their curiosity both on the research and the climate change studies and the context in which the geoscientists took the picture, as on technical details on the exposure, or the eventual post-processing, or aesthetic choices.

The feedback received confirmed the Dahlstrom's (2015) recommendations and the observations of Lacchia et al. (2019) about the importance of including in the science communication a touch of feeling, as the research motivation, or anecdotes on the life on board or in extreme contexts. The exhibition "Focus on glaciers" can be considered as the first event of a new way of communicating for the OGS, on the themes of climate change, and other themes of utmost importance for our society. In this perspective, we think that adding multimedia supports, also showing life moments of the fieldwork or episodes related to the scientific campaigns, would be of importance to catch the visitor's attention and communicate more

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effectively. Moreover, also showing pictures of the environment closest to us, the Alps, helps to make the researcher experiences nearer to the ones of other people and to pass the message that climate crisis is a problem for all of us, but we all can do something.

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310 **Figure 1: A sample of the flyer that reports some of the events organized by the OGS during the Settimana del Pianeta Terra (Planet Earth Week, https://www.settimanaterra.org). The opening of our exhibition "Obiettivo Ghiacciai: una bellezza che sta scomparendo" took place on October 17th**, 2016.

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Figure 2: Some pics taken during the exhibition.

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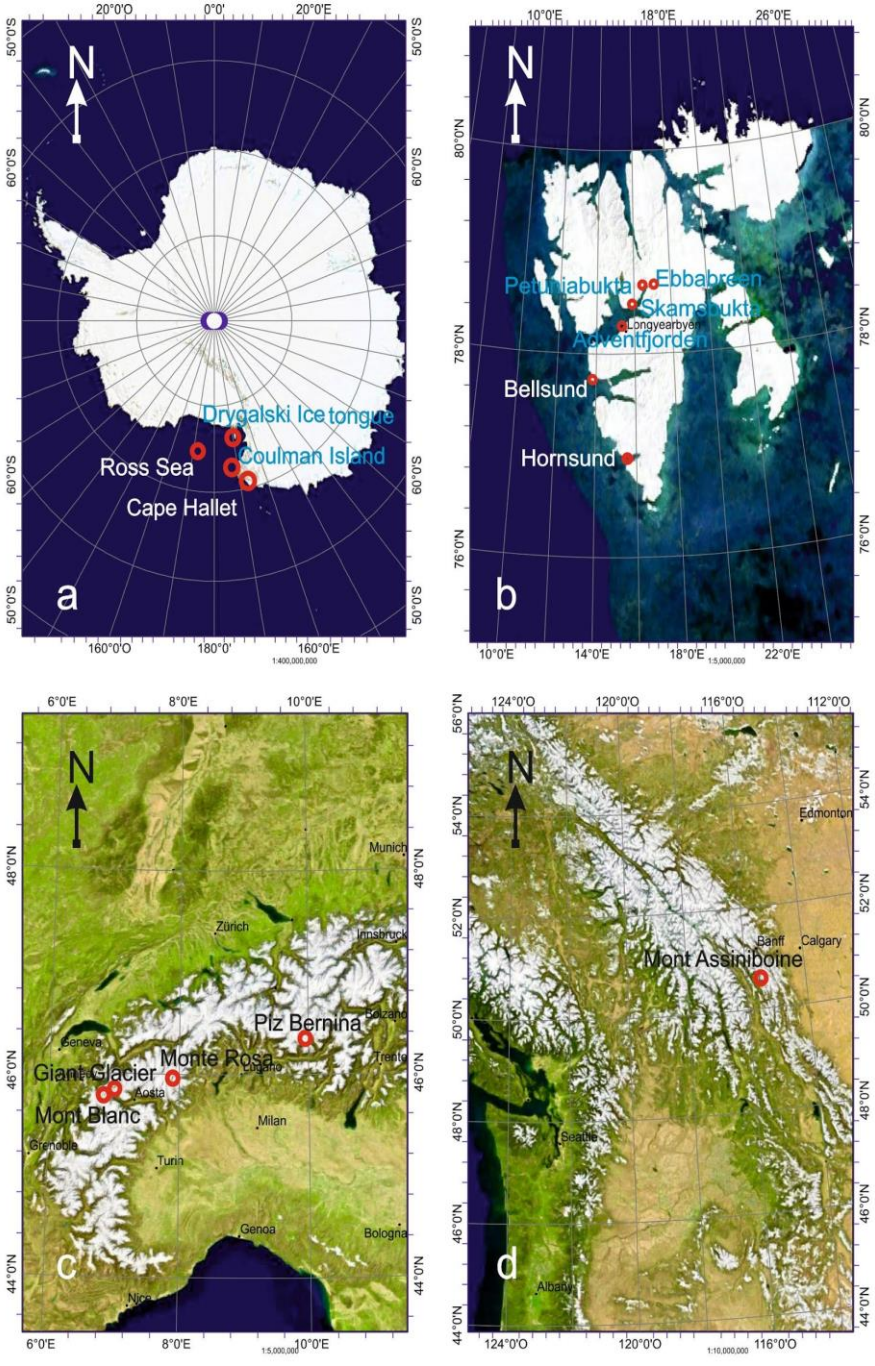

Figure 3: Maps of the geographical domains where the pictures of the exhibition have been taken. a) Antarctica; b) Spitzbergen island in the Svalbard Archipelago; c) The Alpine chain; d) Rocky Mountain chain, in Canada (for the topography Bright Earth eAtlas base map v1.0 (AIMS, GBRMPA, JCU, DSITIA, GA, UCSD, NASA, OSM, ESRI), CC BY AU 3.0.).

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325 **Figure 4: Icebergs in Antarctica. a) Iceberg, XXI PNRA Antarctic expedition, project WISE; b, c) Sea ice view during the shipping (Ross Sea). XXI PNRA Antarctic expedition, project WISE; d) Floating blue iceberg (Ross Sea). XXVIII PNRA Expedition, ROSSLOPE II project.**

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Figure 5: Icebergs and ice tongues in Antarctica. a) Collapsed iceberg (Ross Sea). XXIX PNRA Expedition, ROSSLOPE II project; b) Iceberg wall (Ross Sea). XXI PNRA Antarctic expedition, project WISE; c) Floating blue iceberg (Ross Sea). XXVIII PNRA Expedition, ROSSLOPE II project; d) Drygalski ice tongue (Ross Sea). XXXI PNRA Expedition, HOLOFERNE project.

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Figure 6: Antarctica landscapes. a-c): XXVIII PNRA Expedition, ROSSLOPE II project. a) Iceberg stacked in Cape Hallett (Ross Sea); b) Campbell glacier detail (South Western Ross Sea); c) Floating blue iceberg (Ross Sea); d) Drygalski ice tongue (Ross Sea). XXXI PNRA Expedition, HOLOFERNE project.

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Figure 7: A lonely penguin on a drifting iceberg (Ross Sea). XXI PNRA Antarctic expedition, project WISE.

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Figure 8: Svalbard landscapes (Svalbard archipelago, Norway). a) Longyearbyen Bay, Tundra landform. R/V Polarstern expedition PS99-1a, BURSTER project; b) A view from the Wordiekammen plateau toward the Ebbabreen, with the nunatak Bastonfjellet. Paleokarst project; c) Front of the Bellsund ice stream (SW Svalbard). RV Ian Mayen 2009 expedition, UiT-GLACIBAR project; d) From the Wordiekammen plateau toward the Petunia Bukta, with the waters of Paleokarst project.

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Figure 9: Svalbard landscapes. a) Hornsund Fjord, Spitsbergen. RV G.O. Sars, expedition 191, PREPARED project; b) Ice coverage of the Svalbard Islands' northwestern coast. R/V OGS Explora, PANORAMA project; c) Skanskbukta Bay (on the left), Billefjorden (centre) with Bünsow Land cliffs (front). Field trip "Skanskbukta basecamp", the "Northern Rangers" group.

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Figure 10: Mountain landscapes. a) Piz Bernina (Italy); b, c) PNRA-WISSLAKE project: b) Monte Rosa (Italy); c) Giant Glacier, Mont Blanc (Italy).

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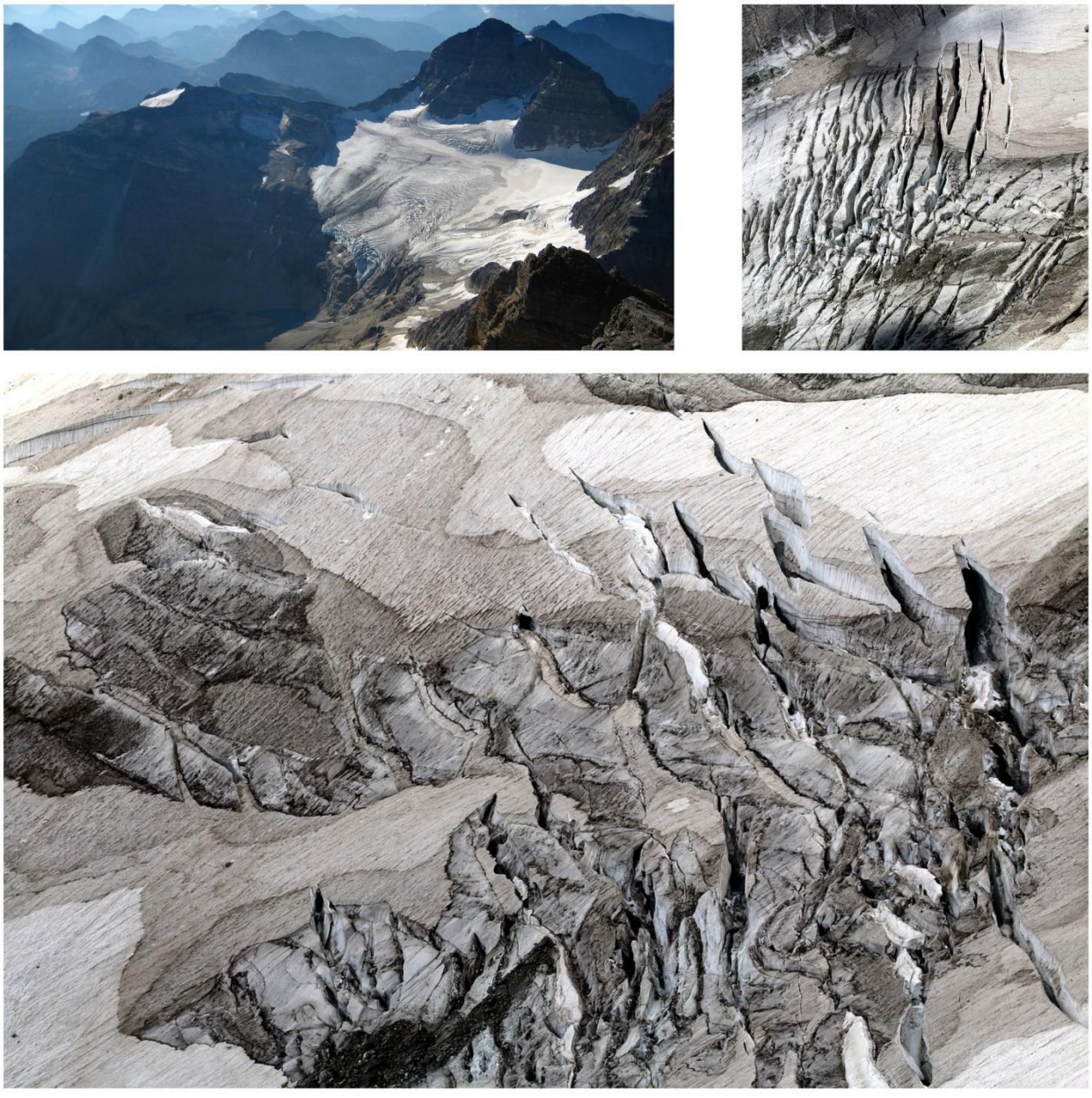

Figure 11: a) A glacier of Mount Assiniboine, British Columbia, Canada. Field trip in the frame of the SEG 2009 Summer Research Workshop on CO2 Sequestration Geophysics; b, c) A minor glacier in the Mont Blanc group (Italy). Field trip in the frame of the 21st European Meeting of Environmental and Engineering Geophysics - 2015.