



**Antarctic Treaty
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Communicating the Science of Climate Change

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Introduction

Why is it important to communicate science, in particular the science of climate change?

Communicating a subject as complex, and frequently technical, as climate science presents significant challenges. Effective communication requires the key messages to be delivered as simply as possible when addressing audiences that vary from policy/decision makers to the general public. In both cases the audiences need to be able to assess what the messages of climate science mean for them on a day-to-day basis and into the future. The process of producing the understandable messages without losing the essence of underlying science is vital to allow these audiences to be properly informed and appreciate the necessity for better science to inform the public debate.

A particular issue for climate science is the notion of uncertainty, specifically the difference between its usage in scientific discussions and reports compared to that used in public and media discussions. While everyone deals with uncertainty in their daily lives, it remains a rather abstract concept to the non-scientist. Scientists tend to have specific and precise definitions of uncertainty, with appropriate language, which is intended to inform scientists. The media and public interpretation of such language can obfuscate the conclusions diminishing the impact of the message being communicated. One way to address this is to focus on the notion of consensus amongst scientists on particular issues and translation of these concepts in language understandable by non-specialists.

The Antarctic Treaty Parties and SCAR recognise the importance of communicating climate science as a fundamental responsibility, in particular after the publication of SCAR's Antarctic Climate Change and the Environment (ACCE) report (<http://www.scar.org/publications/occasional/acce.html>). This paper reports on SCAR's climate communications work, with a focus on the elements that need to be considered in the communication of Antarctic climate change science. It takes into account the recommendations on communication included in the SCAR Strategic Plan 2011-2016, specifically with reference to improving the visibility of Antarctic science and the need for wider appeal targeted for inclusion in the next generation SCAR website.

Background

The Antarctic Treaty Meeting of Experts (ATME) on Implications of Climate Change for Antarctic Management and Governance was held in Norway in April 2010. One of the major recommendations was that the ATCM develop an Antarctic climate change communication plan to bring the findings of the SCAR's Antarctic Climate Change and Environment (ACCE) report to the attention of decision makers, the general public and the media [Recommendation 2].

Following on from this recommendation, and underpinned by funding from Norway, the UK, and ASOC (see also ATCM XXXIV IP 83 *An Antarctic Climate Change Communications Plan*), it was agreed that it would be appropriate for SCAR to lead with this initiative since it was the organisation that organized the review of the science supporting current understanding of climate change in the Antarctic and Southern Ocean region.

Based on this, SCAR has been working on a SCAR Climate Change Communications Plan and is actively implementing innovative ways to improve its communications in this area. This paper summarises progress to date.

Note that as a non-governmental organisation SCAR provides independent, authoritative scientific advice based on best available scientific evidence. With regard to communicating the science of climate change SCAR strives to remain independent and objective avoiding speculation or personal opinions.

Key Goal

The key goal of the SCAR Climate Communications Plan can best be summarised as:

“To effectively communicate the findings of SCAR publications and the science of its community on climate change, building on the foundational work of the ACCE report and its subsequent updates, to a broad audience including policy makers, educators and the general public”.

Following from the key goal are a series of subsidiary objectives. These are consistent with the goal but warrant highlighting as criteria against which to measure the effectiveness of a Climate Communications Plan:

- 1) **Highlight the unique importance of climate change science being conducted in Antarctica and the Southern Ocean.** There is a need to ensure that the communications undertaken encourage support by those that fund science of further critical needs in climate science research in the Antarctic and Southern Ocean region that will incrementally improve our knowledge of Earth’s climate system and enable predictions of plausible and robust future outcomes. Emphasising the unique nature of much of the current investigations in Antarctica and its vital role in and connections to the Earth System will be important to achieve this.
- 2) **Widen the audience for SCAR climate change communications.** This includes expanding exposure within the target audiences already identified but also expanding its reach to new audiences such as the private sector.
- 3) **Add value to existing publications.** This will be achieved through the next generation SCAR website and focused use of social media. The use of consistent SCAR branding and reinforcement of important and timely messages will assist in establishing the SCAR website as a repository of and the place to go to, for the most relevant and latest Antarctic and Southern Ocean climate change information.
- 4) **Develop new channels of communication to reach specific audiences.** In order to test the success of differentiated media outputs it will be important to review the feedback from specific activities, e.g. the participation of younger scientists and the general public through social media channels by targeted surveys, encounter groups of target audiences, rate of citation of the web site, number of visitors to the web site, references to the web site in the lay press, etc.
- 5) **Promote SCAR Climate Science.** By effectively promoting SCAR climate science and the publications and syntheses derived from that science, it is intended that the level of engagement by the public and policy makers will be raised. This will raise the profile of SCAR climate science amongst national and international audiences and feed into setting priorities for science funding. It should also result in a greater appetite for SCAR climate science amongst well-cited journals and improve citation metrics for SCAR climate scientists.
- 6) **Provide public benefits and improve engagement in terms of education and outreach.** By making the materials easily accessible and understandable, the public and educators will benefit from more deeply engaging with climate science from the Antarctic and Southern Ocean region at whatever level and to whatever depth desired.

These objectives are intended to complement the communications element of the SCAR Strategic Plan 2011-2016 (specifically the linkage between Antarctica and global climate) and the 2006 SCAR Communications Plan (scheduled for an update in response to the outcomes and lesson learned from the climate communications initiative).

Important audiences

The audiences for SCAR climate communications follow those previously identified by the SCAR Communications plan (2006) i.e.:

Key audiences: Policy makers, national governments and funding agencies, science media, and SCAR scientists

Secondary audiences: Educators, the general public, and the private sector.

SCAR uses its position as a provider of aggregated and consensus scientific opinion to engage in dialogues with policy makers to ensure that it is providing the information that each audience is seeking. With regards the Antarctic Treaty System this is done through the submission of papers to ACTMs (for example annual updates to the ACCE report) and engagement with Parties through meetings and workshops. Use of the Environmental Portal being developed by New Zealand, Australia and SCAR is potentially a powerful new means of disseminating and making easily available such information (see WP057). SCAR also makes use of ICSU's observer status to the Intergovernmental Panel on Climate Change (IPCC) to directly participate in relevant workshops and international mechanisms addressing climate change and its impacts on society.

As pressures increase on scientists to fulfil more roles within limited time and to make their work more relevant, it is particularly important that those who contribute to the generation of the ACCE and its updates, as well as the wider SCAR scientific community, perceive the effort to be useful, effective, objective and authoritative. This emphasizes the need to not only effectively communicate but also to provide feedback to the scientists, to add value to and improve how assessments are communicated. Where possible, SCAR will facilitate dialogues between science media and scientists to enhance the impact of its publications and the profile of scientists in these activities.

Climate science has become an increasingly popular and important topic in the curricula of many schools and educators play an increasingly decisive role in the communication of climate science to the next generation. Many young students are initially attracted to climate science through the efforts of enthusiastic educators and SCAR, through the new website, will provide a portal to educational resources, such as lesson plans and activity sheets, relevant to Antarctic and Southern Ocean climate science.

Social media has become an increasingly essential outlet for communications and SCAR is developing a social media policy document to strategically organize these activities. Effective use of social media requires specific focus on the individual channels, e.g. Twitter, that are useful for timely and immediate alerts on available material but is not suitable for hosting the material itself. For climate science communications it will be important to make appropriate use of the SCAR Facebook group, which already reaches a wide audience of SCAR scientists and interested members of the public.

The private sector has not been usually considered as a primary audience for SCAR material but this sector will become more important to SCAR as they exert significant influence on policy makers and funding agencies as focus turns to mitigation of risk associated with climate change. For example, the re-insurance industry is interested in how to narrow the range of future climate scenarios so premiums can accurately reflect risk on multi-decadal timescales. Emphasising the central nature of Antarctic climate science to these calculations will widen and improve understanding of potential societal impacts (i.e., the role that the Antarctic Ice Sheets play in future sea level rise). Targeting representatives of industry, unions and private research, SCAR strives to increase its profile with these audiences.

Key messages

SCAR initiates partnerships and facilitates and coordinates research, but does not carry it out or fund it directly. There is a need to emphasise the benefits of the roles that SCAR does play. The production of specific materials will be dependent on the nature of the report or material to be communicated and the target audience. This will be best remembered by a catch phrase that emphasizes the most positive aspects of the role that SCAR can play, "Antarctic Climate Science that is Comprehensive, Consensus-driven, Independent, and Authoritative".

"Antarctic Climate Science" - The science of climate in Antarctica and the Southern Ocean and its critical linkages to the Earth System.

"Comprehensive" Emphasises that the breadth of SCAR science gives a comprehensive view of all aspects of the science of and the response to climate change in Antarctica and the Southern Ocean (as exemplified by the ACCE report).

"Consensus-driven" Underlines the role SCAR fulfils in publishing reports that represent the community-wide consensus in areas of climate science and as such have greater impact than individual studies alone.

“*Authoritative*” The picture of climate change being pieced together by SCAR scientists provides a consistent framework based on the best available and unbiased science in which to consider the impact of, in many cases, unprecedented change.

Within each of these themes different levels of detail will be added to address differing audiences. Another positive over-arching principle that will be emphasised in communications is the notion of “Open Science”, whereby the open exchange of data and results is enshrined in the Antarctic Treaty and by SCAR’s parent body, ICSU, and reflected in all of the activities that SCAR undertakes.

SCAR embraces the ICSU “*Principle of Universality of Science: the free and responsible practice of science is fundamental to scientific advancement and human and environmental well-being. Such practice, in all its aspects, requires freedom of movement, association, expression and communication for scientists, as well as equitable access to data, information, and other resources for research. It requires responsibility at all levels to carry out and communicate scientific work with integrity, respect, fairness, trustworthiness, and transparency, recognising its benefits and possible harms. In advocating the free and responsible practice of science, ICSU promotes equitable opportunities for access to science and its benefits, and opposes discrimination based on such factors as ethnic origin, religion, citizenship, language, political or other opinion, sex, gender identity, sexual orientation, disability, or age.*”

Critical messages for individual instances of communication will be tailored to the receiving audience. From the next major ACCE update, to be available in 2012 for instance, there will be a series of related but independent issues that are either new or relate to updates of issues previously identified that should resonate with the press, the public or policy/decision makers. These can be derived from the same base documents but be tailored to match the interests and needs of different stakeholders. From the previous ACCE report for example it was found that the link between the Antarctic ice sheets and sea level rise was particularly interesting to the press generating significant coverage.

In preparing materials, and the messages they contain, to target different audiences the tone will also need to be appropriate. While the material to be highlighted will maintain a rigorous approach to accuracy, the tenor used in social media releases advertising the availability of the material will be refined to be as inclusive as possible, with an emphasis on positive and understandable language. This has been shown to be important when communicating with general audiences.

Improving Climate Communications

There is a need to assess the impact of all levels of media produced, and distribution channels used, to focus on those proven to be effective. As outlined earlier, SCAR will use a series of criteria to judge effectiveness. There are also increasingly useful web-based tools available to provide metrics not just for the SCAR website but for wider online assessments and these will be used. These measures will be combined with the usual metrics, such as citation indices. This is especially important given the “value-add” nature of the strategy to maximise the resources available and optimize impact.

Some key ways in which SCAR climate communications will be improved include:

Website re-development with effectiveness for multiple audiences a unifying element.

The new SCAR website is being designed with a vital element being its attractiveness to a wider audience. From the point of view of climate science communications there is a need to produce differentiated material and allow easy access to these materials to target audiences. Examples will include Q. and A.s on climate change from the Antarctic perspective and hosting rich media such as short video summaries, similar to the APECS “frostbyte” presentations, by scientists that have been highlighted in the press releases and other distributions (see e.g. <http://apecs.is/events/montreal2012/frostbytes>). The role of SCAR as a conduit for Antarctic scientists highlights the need to keep early career scientists enthused and to ensure that they can see their own and collaborators work appreciated and effectively communicated. The new website will be a natural medium to aid this on-going role.

Repository of resources and best practice for SCAR Climate Science Communications.

SCAR needs to maintain a database of exemplar media-specific resources that can be accessed by SCAR scientists to help improve the impact of their work. This can be as simple as a list of science-focused

organisations (e.g. the Science Media Centre network), but also tutorial guidance documents on producing media friendly distillations of their work and other resources of general use. This will be important for those who do not have access to press officers or media professionals at their home institutions and it is likely to become more of an issue as available resources are directed to front line science in the face of economic challenges. As well as being highlighted in internally generated SCAR documents, these could also assist individual scientists in generating greater global impact with their own individual efforts.

Action plan for each instance of communications-related requests.

This would cover a range of sources such as media enquiries, proactive stories, topical issues, crisis communications, media monitoring and evaluation and public enquiries. The actions and responsibilities expected in each case would be specified and should lead to clearer and more consistent communications in general.

Translation for high impact documents.

Where possible, SCAR publications should be available in as many languages as possible and economically feasible. For media communications this will be especially important to ensure wide coverage and uptake to reach under-represented groups. Translating press releases for instance should not provide a major resource expense but could provide a significantly larger prospective audience. SCAR will engage national members whose first language is other than English to assist.

Target an effective presence at interface meetings

SCAR will target opportunities to present its climate science at key meetings that combine the policy and academic arenas. While the audiences are both important targets, it also provides a platform to advertise and reinforce the role of SCAR.

Consistency in publications.

When SCAR publishes material relevant to climate science it will ensure that there are always links and references to the other relevant publications and website areas creating a networked resource so people can explore topics on their own to the depth desired. This will ensure maximum exposure and provide a multiplier effect for each instance of communication.

Next steps

In order to begin the process of developing new communications strategies and a Climate Communications Plan (which will likely be part of an update of the SCAR Communications Plan as the lesson learned apply far beyond climate science) the 2012 update to the ACCE Executive Summary has been identified as an opportunity to test various aspects of a new and improved climate communications strategy (see IP XX).

The Executive Summary included as part of the original ACCE report contained 80 points covering a broad range of science topics. While producing a second ACCE report would be an expensive exercise in terms of time and resource, updating the Executive Summary (while maintaining the critical aspects of wide consultation and consensus that gave the report authority and acceptance) is seen as balancing the breadth of coverage and timeliness with manageable size and workload. Previous annual updates to the ACCE report have highlighted individual areas of research. The advantage of a more comprehensive document will be to reinforce the idea of consensus in order to combat the often-misunderstood aspect of uncertainty, which is vital to placing conclusions in a proper context. In practical terms this means engaging a wide range of experts and making them available to the media at the time of publication and also emphasising the number of contributors to the overall ACCE update as well as topic specific updates.

This update is currently being finalised for publication in a peer-reviewed journal. The following actions are intended to coordinate with the publication to maximise impact.

Post-Finalisation: Discussions with the editors to identify the highest interest and most important topics within the update to be candidates for key messages. Consult with Science Media specialists as to newsworthiness and best options for maximum impact, e.g. press conference, individual interviews etc.

Pre-publication: Embargoed copies of the update will be sent to influential media Science and Environment specialists. Press release and pamphlet versions of the update will be prepared to coordinate with press briefings.

Post-publication: The SCAR website will highlight press and media coverage of the update. It will also provide follow up pieces as a continuing narrative. Links will be provided to allow access to materials ranging from a summary of the important messages to the full report itself. It is intended that once produced for the ACCE Executive Summary update, these materials will become templates for future events to a greater or lesser extent dependent on the nature of the material, the intended audience and the prior record of impact and distribution.

There will also be major reports from the next generation of SCAR Scientific Research Programmes (see SCAR Annual Report), in particular *Antarctic Climate in the 21st Century (AntClim21)* if approved, which is another opportunity to prepare and test multiple media presentations and distribution channels.

In the context of the next IPCC report it is likely that many SCAR scientists will be preparing and releasing significant new publications in time for consideration in the report (material must be published or in review by July 2012). Individual institutions and publications are likely to take the lead in publicising these releases but SCAR might also play a role in maximising the impact of this new science. In these cases it is likely that the website and social media outlets will be prominent tools for broadening audiences. In particular, SCAR will present scientists with the opportunity to produce accompanying material to add a human element to the published science through blogs and/or video interviews. If properly prepared, SCAR can effectively use the “coat-tails” of the next IPCC report, which is sure to garner intense governmental, public, and media attention.

Concluding Remarks

Implementing the SCAR climate change communications plan will be led by the SCAR Secretariat in partnership with national programmes, the Association of Polar Early Career Scientists (APECS), IASC, COMNAP, CCAMLR, the ATS, and others. It should be recognised that the SCAR Secretariat has limited human resources, but does have access to additional assistance and advice through its national members, many of which have dedicated communication experts which will be an important resource. An important objective is to establish a robust network for communications that leverages limited SCAR funds through partnerships. The Climate Communications Plan should also be a primary target for the SCAR Development Council for soliciting external funds.

Acknowledgements

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Appendix A: Communications materials produced in preparation for the plan

1. Public lecture: Introduction to SCAR and its role in climate change science

“The Role of the Antarctic in Climate Science” – Dr Eoghan Griffin, Dr Renuka Badhe

Available at http://www.scar.org/communications/otherpresentations/Antarctic_climate_science.ppt

Presented at OneWorld Bath on 28th November 2011.

2. Poster presentation on climate communications:

“Effectively Communicating Antarctic Climate Change Science” – Dr Eoghan Griffin, Dr Mike Sparrow, Dr Renuka Badhe

Available at http://www.scar.org/communications/IPY_CCAntarctica_poster.ppt

Presented at IPY 2012 conference Montreal, April 23rd.

3. Promotional material for ACCE report:

Available at http://www.scar.org/publications/occasionals/ACCE_top_10_promo_2012.pdf

Distributed at IPY 2012 conference Montreal April 2012.