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Contribution of information to inform State of the Antarctic Environment Reporting (SAER): a potential new SCAR initiative

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Working Paper submitted by SCAR

Summary

This paper describes the outcomes of a recent SCAR workshop to consider the potential provision of information to inform elements of ‘State of the Antarctic Environment Reporting’ (SAER). SCAR recommends that the Committee:

- Notes the recent SCAR workshops held to consider how best the scientific community might contribute to SAER (see the Workshop Report at [Attachment A](#) to this Working Paper).
- Considers the proposal by SCAR to develop a mechanism for the provision of information relevant to SAER; and
- Requests the views of CEP Members regarding (i) the usefulness of this proposal and (ii) if considered beneficial, what information would be most useful for supporting the Committee in their provision of advice to the ATCM on the state of the Antarctic environment.

Background

Article 12 (1) of the Protocol on Environmental Protection to the Antarctic Treaty sets out the functions of the Committee for Environmental Protection (CEP), i.e.:

‘...to provide advice and formulate recommendations to the Parties in connection with the implementation of this Protocol, including the operation of its Annexes, for consideration at Antarctic Treaty Consultative Meetings, and to perform such other functions as may be referred to it by the Antarctic Treaty Consultative Meetings.’

The Protocol goes on to state that amongst other things, the Committee shall provide advice on ‘the state of the Antarctic environment’ (Article 12(1j)). Annex II (Article 6) identifies a requirement to obtain information on the status of native animals in Antarctica, and the extent to which any population needs protection.

The CEP has identified monitoring and state of the environment reporting as a Priority 2 issue in its 5-Year Work Plan. Specified actions include:

- Identify key environmental indicators and tools;
- Establish a process for reporting to the ATCM;
- SCAR to support information to COMNAP and CEP.

Reporting concerning the state of the Antarctic environment is likely to further support the work of the Committee (see also ATCM XXII IP46¹). Such information could potentially be utilised to:

- (i) inform the development of the Antarctic Protected Area System,
- (ii) increase understanding concerning environmental monitoring needs;
- (iii) identify sites where management could be used to improve environmental state, such as by reducing pollution; and

¹ ATCM XXII IP46 *Ross Sea Region State of Environment Report*

(iv) highlight gaps in scientific knowledge.

Earlier CEP discussions on SAER

SCAR has been engaged in discussions concerning SAER since before the Protocol entered into force (ATCM XX Final Report, para. 164; ATCM XXI WP19²). However, recent CEP discussions of SAER have been limited, with the last paper submitted to the CEP on this topic dating from 2008.

Earlier considerations of which information could be usefully synthesised for SAER are provided in several CEP documents (see ATCM XXI WP19; ATCM XXII IP46; and ATCM XXV IP54³) along with information on the development of state of the environment reports for the Arctic (ATCM XXII IP40⁴), the Ross Sea Region (ATCM XXIII IP1⁵; ATCM XXV IP7⁶; ATCM XXV WP12⁷); and the European Arctic, India, New Zealand, Norway and the United Kingdom (ATCM XXVI WP21⁸).

Earlier Intersessional Contact Groups (ICGs) on SAER were established to consider how uncertainties about the focus of a State of the Antarctic Environment Report and the methodology of production might be resolved (see ATCM XXII WP11⁹) and further clarify the report framework, resource implications and the role of SCAR and other experts (see ATCM XXIII WP5¹⁰). The ICGs largely agreed that the audience should be environmental managers, and decision- and policy-makers, including governments and the CEP (ATCM XXIII WP5). A possible focal area for SAER was considered to be the area south of the Antarctic Convergence (ATCM XXI WP19). This is an environmental boundary that includes all of the Antarctic Treaty area, and most of the areas subject to the CAMLR Convention. The contact groups suggested that SAER could be based on existing research results and the synthesis of existing knowledge (ATCM XXI WP19).

In ATCM XXVI WP21, the intersessional discussion group recognised that indicators of change could be considered under two categories:

Pressure indicators: (i.e., measurements of activity levels or outputs which may affect environmental condition) relate to many of the requirements under the Protocol (e.g., waste management), and may have immediate management implications for Treaty Parties.

Condition indicators: (i.e., measurements of the physical or biotic environment, such as air temperatures or sea ice extent) reflect significant aspects of the Antarctic environment but may have less-immediate management implications.

The discussion group recommended that a set of 10-15 pilot indicators should be developed as the first in a step in developing a SAER system. It was also considered that a system with devolved responsibilities (i.e., where experts in each indicator, rather than the CEP, handle data and generate regular report information) would be of great advantage.

² ATCM XXI WP19 *State of the Antarctic Environment Report*

³ ATCM XXV IP54 *Antarctic State of the Environment Reporting*

⁴ ATCM XXII IP40 *Development of "State of the Environment" Reports in the North - Experiences with the EEA and AMAP processes*

⁵ ATCM XXIII IP1 *Ross Sea Region State of the Environment Report: An Update on Progress*

⁶ ATCM XXV IP7 *Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica*

⁷ ATCM XXV WP12 *Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica*

⁸ ATCM XXVI WP21 *Report of the Intersessional Discussion Group on State of the Antarctic Environment Reporting*

⁹ ATCM XXII WP11 *Report on the Work of the Intersessional Contact Group on a State of the Antarctic Environment Report*

¹⁰ ATCM XXIII WP5 *Report on the Work of the Intersessional Contact Group on SAER*

Intersessional-discussion participants advocated the establishment of a web-based SAER system that is relevant to and easily accessible by all national Antarctic programmes and Parties to the Protocol (ATCM XXV IP54¹¹; ATCM XXVI WP21). Consequently, a SAER pilot system was developed using temperature as an initial example indicator (ATCM XXVII WP20¹², Annex 3). The intersessional discussion group considered the use of reporting templates (ATCM XXVIII WP10¹³, Annex 4), as well as the use of a summary page where the state of the Antarctic environment might be gauged “at a glance”.

In ATCM XXXI WP24¹⁴, New Zealand suggested that some key, achievable improvements to the way that the CEP works would allow the CEP to have a more systematic approach to fulfilling its functions to provide advice on the state of the Antarctic environment to the ATCM. These improvements included regularly reviewing priority work, improving working relationships between CEP participants, and implementing new ways of working, such as utilising web-based approaches.

Recent developments

For many decades, SCAR has provided Antarctic policymakers with information relevant to SAER, but generally on an *ad-hoc* basis (e.g., ATCM XLIV WP30rev.1¹⁵; ATCM XLII WP68¹⁶; ATCM XXIX WP37¹⁷). Today, SCAR provides independent, relevant and up-to-date scientific information on Antarctic environments and human activities in the region through Information Summaries posted on the SCAR Antarctic Environments Portal. However, there may be an opportunity to provide policymakers, and other stakeholders including COMNAP, with further and potentially more-detailed and area-specific information, with scope to report on environmental change and trends in Antarctica. With this in mind, the SCAR Scientific Research Programme (SRP) ‘*Integrated science to inform Antarctic and Southern Ocean Conservation*’ (Ant-ICON) has proposed a community-led initiative to provide information relevant to elements of SAER, in order to support the work of Antarctic policymakers.

The project proposes the development of a framework and platform for provision of best-available science on selected topics to inform policymakers’ advice on the state of the Antarctic environment. The initial focus would be on ‘drivers of change’ in Antarctica (or pressure indications, as described in ATCM XXVI WP21). To gauge community interest in such a project, two online community workshops were held on 25th and 26th October 2022. In large part, the views of many of the workshop participants were similar to those expressed during intersessional discussion on SAER in the early to mid-2000s (see the Workshop Report in [Attachment A](#) to this Working Paper).

Main points discussed at the workshops included:

- Identifying the primary target audience for the reported information as (i) the decision-makers participating in the policy organisation of the Antarctic Treaty System (i.e., the ATCM, CCAMLR and CEP), (ii) national governments, and (iii) national Antarctic programmes and COMNAP. However, other stakeholders, operating within Antarctica and globally, may also find the information useful. The area under consideration for reporting could include the Antarctic Treaty area, the CAMLR Convention area and, as relevant, other dependant and associated ecosystems.

¹¹ ATCM XXV IP54 *Antarctic State of the Environment Reporting*

¹² ATCM XXVII WP20 *Towards a CEP State of the Antarctic Environments Reporting System: Report of the Intersessional Contact Group*

¹³ ATCM XXVIII WP10 *State of the Antarctic Environment Reporting System: Report of the Intersessional Contact Group*

¹⁴ ATCM XXXI WP24 *Improving the CEP’s Role in Advising the ATCM on the State of Antarctic Environments*

¹⁵ ATCM XLIV WP30rev.1 *Antarctic Climate Change and the Environment: A Decadal Synopsis. Findings and Policy Recommendations*

¹⁶ ATCM XLII WP68 *Anthropogenic Noise in the Southern Ocean: an Update*

¹⁷ ATCM XXIX WP37 *Biodiversity in the Antarctic*

- Drivers of change in the Antarctic environment that could be considered under this project include: (i) human activities and land use; (ii) non-native species; (iii) pollutants; and possibly (iv) extraction of resources. Consideration of climate change and the synergistic/cumulative impact of multiple drivers of change will be integral to the project.
- The various drivers of change do not influence all parts of Antarctica equally, resulting in the need for information provision at different spatial scales (i.e., local, regional, and/or continental). As far as possible, information should be provided at a spatial scale appropriate to the needs of policymakers.
- An online and updatable reporting format may be most appropriate. An interactive online map or Geographic Information System (GIS) may facilitate effective representation of information at different spatial scales.
- The reporting outputs should be presented in an independent and objective, policy-ready format with source information subject to peer-review, to the maximum extent practicable. The SCAR Antarctic Environments Portal (<https://environments.aq/>) provides an existing platform for delivery of policy-relevant information to decision-makers and could prove an effective and updatable mechanism for delivery of information.

Several challenges and risks have been identified that will each need to be managed in order to deliver a successful outcome. Advice from several workshop participants with experience of large collaborative projects was to ‘start small and build up slowly’. To maximise the chances for success, it was agreed by workshop participants that feedback from stakeholders, including ATS policymakers, should be taken into consideration.

Recommendations

SCAR recommends that the Committee:

- Notes the recent SCAR workshops held to consider how best the scientific community might contribute to SAER (see the Workshop Report at [Attachment A](#) to this Working Paper).
- Considers the proposal by SCAR to develop a mechanism for the provision of information relevant to SAER; and
- Requests the views of CEP Members regarding (i) the usefulness of this proposal and (ii) if considered beneficial, what information would be most useful for supporting the Committee in their provision of advice to the ATCM on the state of the Antarctic environment.