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ASSESSMENTS IN POLICY- MAKING: CASE-STUDIES FROM THE ARCTIC COUNCIL

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ACRONYMS

ABA	Arctic Biodiversity Assessment
AC	Arctic Council
ACA	Arctic Change Assessment
ACAP	Arctic Contaminants Action Programme Working Group
ACIA	Arctic Climate Impact Assessment
ACS	Arctic Council Secretariat
AEC	Arctic Economic Council
AHDR	Arctic Human Development Report
AIT	Assessment Integration Team
AMAP	Arctic Monitoring and Assessment Programme Working Group
AMSA	Arctic Marine Shipping Assessment
AMSP	Arctic Marine Strategic Plan
AoA	Assessment of Assessments
ARR	Arctic Resilience Report
CAFF	Conservation of Arctic Flora and Fauna Working Group
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EPFR	Emergency Prevention, Preparedness and Response Working Group
GEA	Global Environmental Assessment
HRIA	Human Rights Impact Assessment
IA	Impact Assessment
IASC	International Arctic Science Committee
ISAC	International Study of Arctic Change
LRTAP	Long-Range Transboundary Air Pollution
PAME	Protection of the Arctic Marine Environment Working Group
POPs	Persistent Organic Pollutants
PP	Permanent Participant(s)
PSC	Project Steering Committee
SAO	Senior Arctic Official(s)
SEA	Strategic Environmental Assessment
SEIS	Shared Environmental Information System
SES	Social-ecological system
SIA	Sustainability Impact Assessment
SDWG	Sustainable Development Working Group
SLCF	Short-lived climate forcers
SWIPA	Snow, Water, Ice, Permafrost in the Arctic
TEK	Traditional Ecological Knowledge
UArctic	University of the Arctic
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization

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Part

1

ASSESSMENT OF ASSESSMENTS IN GENERAL





Chapter cover image: Northern Lights.
Photo: GettyImages

I. INTRODUCTION

Global and regional assessments, primarily environmental, have become increasingly common elements in international, national and even local policy and decision making (Clark, Mitchell, & Cash 2006). As large-scale environmental problems and their consequences cross borders and know no jurisdictional limits, addressing them requires cooperation among countries, interaction between scientists and policy makers, and inclusion of actors from all levels of the scale, from the local to the global (Ostrom 1990; Young 2002). One form of responding to these challenges has become assessments as organized efforts to harness scientific information to inform policy makers both from private and public sectors at all stages of decision-making. The increasing role of assessments has had its roots in a view that better and more widely shared information can add to more effective management of complex, transnational interactions between humans and nature (Clark et al. 2006). As examples from the environmental domain have proven, actors from all sides of the stage have an interest in the effective conduct of assessments, from scientists and practitioners willing to contribute their efforts to increase knowledge and improvement of existing policies (Bolin 1994) to decision makers in business and governments looking for scientific data and analysis as a basis for their decisions and pursuit of their policies (Bronk 1994; Carnegie Commission on Science 1994). In addition, the reasoning behind assessments supposes that a better understanding of impacts of human actions, decisions and behaviours, presented with options for alleviation of these impacts, can provide incentives for political, social and economic decision makers to carry out their policies in a more sustainable way (Clark et al. 2006). Therefore, the number and importance of assessments is expected to increase even further in the future along with greater demands put on natural resources by the growing population and effects of industrialization and globalization, thus calling for concerted actions based on sound and scientifically grounded information to mitigate negative effects of these developments.

The assessments are often viewed through products they deliver, frequently in the form of a report or publication. However, they can be better understood as social processes, embedded in particular institutional settings, within which expert knowledge related to a policy problem is framed, integrated, interpreted, and presented in documents to inform decision making (A. E. Farrell & Jäger 2006; A. Farrell, VanDeveer, & Jäger 2001). Assessments constitute communication channels to bridge the gap between scientists and policy makers and are a key interface between science and policy (National Research Council 2007). As such they may influence the formulation, implementation and evaluation of

public policy, hence they are also of interest to business, nongovernmental organizations, regulatory offices etc. (Miller 2006). Yet, assessments may vary to a great extent in what type of influence they exert and the degree to which they affect the policy sphere. Therefore it is not enough to look at the scientific output of the assessment - to evaluate its effectiveness one has to look at the entire process which led to production/collection of research results, both the scientific and political context in which it was carried out, and understand which design features of the process can inhibit or strengthen the assessment's influence.

The aim of this report is to shed more light on the influence of assessments in policy-making. The report consists of two parts. The first one defines the main concepts related to assessments and distinguishes between their various types. It outlines their characteristics and frameworks for their evaluation, followed by the assessments' potential contributions to decision-making and conditions increasing their effectiveness. The second part focuses on the Arctic Council (AC), its role in the knowledge production and the assessment activities conducted under its auspices, with a particular focus on the recent ones: Arctic Marine Shipping Assessment (AMSA), Arctic Biodiversity Assessment (ABA), Arctic Resilience Report (ARR), Arctic Human Development Report-II (AHDR-II), and Adaptation Actions for a Changing Arctic (AACA). On the basis of a designed template the authors of the report seek to evaluate the potential influence of the abovementioned activities, but foremost to provide the reader with a set of tools for deepened understanding not only for the current, but also for the future AC assessments. This report, produced within the framework of the project on Strategic Environmental Impact Assessment of Development of the Arctic, aims to contribute to expertise gathered within the EU on the topic of impact assessments (Berger 2007) and enhance awareness among EU policy-makers of related developments in the Arctic Council realm.





Chapter cover image: Snowstorm.
Photo: GettyImages

II. DEFINING THE ASSESSMENTS

The number of global assessments has been steadily growing in recent years, in part because many existing international agreements and national mandates require regular assessments to support their execution and revision. Due to the amount and variety of their types it is difficult to clearly distinguish elements that correctly define and apply to all of them. In the literature (A. E. Farrell & Jäger 2006; Mitchell, Clark, Cash, & Dickson 2006; National Research Council 2007) the term assessment is generally explained as a collective process that assembles scientific knowledge for the use of decision-makers to address key questions, decisions, or uncertainties.

International organizations carrying out global environmental assessments (UN, UNESCO, EEA) follow the definition of Mitchell et al. and interpret assessment as “formal efforts to assemble selected knowledge with a view toward making it publicly available in a form intended to be useful for decision making” (Mitchell et al. 2006: 3). To fully understand the scope of the definition, the authors further clarify the meaning of its components. Formality of the process refers to its sufficient organization in a way that elements like product, participants and issuing authority can be easily recognized. Selected knowledge recognizes that assessments can vary in respect to what issues are included as well as how knowledge about the issue is collected for the purpose of assessment. In other words, the selected knowledge can refer to both comprehensive and narrow approaches to the problem as well as to the question of the material used – either production of new data, or selection, summary and analysis of the existing information. In addition, the term ‘knowledge’ is interpreted rather broadly, so the information included in an assessment is more empirical than definitional. In the majority of cases it comes from the scientific research, but it may also be combined with local, traditional practitioners’ or indigenous knowledge. Finally, an assessment’s decision-making support function has a public character and encompasses a broad list of actors – governments, private corporations, research laboratories, NGOs, and civil society. In that sense, assessments differ from expertise prepared for decision-makers, the latter having a smaller scope of users and is not always available to the public (Clark, Mitchell, and Cash 2006; UNEP and IOC-UNESCO 2009).

Regardless of their scope, topic or discipline, assessments share some common characteristics and features that were identified as: the ability to connect the domain of science and policy; and public and deliberative processes that interact with social needs to receive decision-relevant information, usually completed in the form of a report that, however, is not necessary to effectively influence the decision-making process (National Research Council

2007). The interface between science and policy is the key factor that contributes to the importance of assessments as a method to inform and consequently potentially influence decision making. Assessments are often viewed through the products they deliver, frequently in the form of a report or publication. However, they should be considered more as both the product (report) and the process which led to its creation. The report (or any other form of delivery of results chosen to inform policy-makers) presents a synthesis of experts’ knowledge and the underlying data and information used in the analysis. The process encompasses institutional settings founded to guide and carry out the assessment, including their mandate, composition and procedures to be followed during the endeavour. There is a consensus in literature that while the product of assessment has a clear value as a presentation of scientific findings, it is the process behind the product that builds an assessment’s influence capacity and effectiveness (A. E. Farrell, Jäger, & VanDeveer 2006; UNEP and IOC-UNESCO 2009).

II.1 TYPES OF ASSESSMENTS

The variety of assessments is an effect of diverse internal design elements, such as: applied data and knowledge, geographic coverage, thematic scope, methodologies, and regularity in the conduct of assessment. For example, the scale may range from local through national to global, while the scope may be defined on the level of broad themes, current situation status, threats, impacts or response measures (UNEP 2007). However, these elements of assessments’ processes and products and the general type of assessment that is to be undertaken are defined early during its inception stage, which in turn depends on factors external to the assessment, namely the scientific, policy, and political context (National Research Council 2007).

The state of scientific knowledge and relevant policy debates create a particular context for an assessment, which is conducted in order to inform certain decisions. The scientific context is comprised of, among others, maturity of the field and amount of data available on the topic, which consequently play a crucial role in the type of assessment that can be undertaken. The political context to the assessment answers the question of what kind of contribution the assessment can deliver, which goals it should accomplish and which decisions it can inform. Furthermore, depending on whether the issue at stake is already a part of the policy agenda or not, the assessment in the former case is contingent upon whose agenda it is and how much attention the issue has gained, whereas in the latter case its goal is to establish the importance of an issue (National Research Council 2007).

Based on mandate and goals, four types of assessments can be distinguished (National Research Council 2007):

1. Process assessments – summarize and synthesize scientific knowledge in order to describe the current status and past trends in relevant processes, as well as characterize the extent and the drivers of the change.
2. Impact assessments – characterize, diagnose, and project the risks or impacts of human activities, or natural pressures (e.g. climate change, pollution) on the social, economic and natural environment. The analysis of impacts is usually focused on some particular sectors or regions and it includes identifying key vulnerabilities and potential strategies to enhance resilience. Impact assessments often draw on results from process assessments, yet they are far more complex as they consider not only impacts themselves, but also interactions among them.
3. Response assessments – identify and evaluate potential responses and adaptations that could reduce human contributions or vulnerabilities to the change at issue. They may evaluate current policy measures as well as recognize new alternative options and assess their feasibility, state of development, and potential contribution to solve the problem.
4. Integrated assessments - examine the links among systems scrutinized in the above forms of assessments. They may involve sequencing activities – process, impact, and response assessments conducted as an iterative cycle. Their integrative aspect is based on taking into account interactions and cumulative effects of all pressures (social, economic, environmental), sectors and ecosystem components.

In theory, the categories of assessments presented above aim at answering different sets of questions and vary in their levels of analytical complexity, applied data and analysis methods, as well as their potential contribution to decision making (Figure 1). In reality however, most of the conducted assessments are hybrids of these presented ideal types (National Research Council 2007).

Additionally, the categorization may be based on the factor that delineates the scope of assessment. In that case, two types – sectoral and thematic - may be distinguished:

- Sectoral assessment is focused on a specific sector of human activities, such as fishing, tourism, energy, etc.
- Thematic assessment covers at least one ecosystem component (e.g. permafrost) or theme (e.g. marine pollution). It can explore impacts of various sectors over that theme and assess how changes in that theme consequently may, in turn, have an effect on the included sectors.

In case of sectoral and thematic assessments it is possible to evaluate processes, impacts and responses within one assessment (UNEP and IOC-UNESCO 2009).

II.2 IMPACT ASSESSMENTS

There are many different kinds of impact assessments (IAs), from which the oldest and probably best-known are Environmental Impact Assessments (EIAs). Yet, they are all in a continual state of evolution. Once dominated by a sectoral approach (i.e. focusing only on environmental issues, health effects, etc.), impact assessments have been moving away from this and toward an integrated approach based on the synergies between the three pillars of sustainability (environment, society, and economy). Perhaps the best example of this integrated approach is the advent of the already-mentioned global environmental assessments that have arisen in response to urgent, worldwide issues such as climate change.

An Overview of Impact Assessments

Environmental Impact Assessment (EIA) is a legal procedure intended to ensure that the environmental effects of individual projects, such as a dam, mine, airport or wind-farm, are taken into account before the government's decision to approve a project is made. Consultation with the public and other relevant stakeholders such as government agencies, local communities or NGOs is a key feature of EIA in most jurisdictions. These constituencies all have an important role to play in defining the scope of the project, commenting on the potential impacts of a project and in proposing appropriate mitigation strategies. The basis for EIA in the European Union (EU) is Directive 2011/92/EU (EIA Directive).

Strategic Environmental Assessment (SEA) focuses on evaluating the effects of plans and programmes on the environment and increasingly on affected communities as well. Similar to the role of stakeholders in the EIA process, SEA is conducted together with the public and relevant government agencies. In the EU, the basis for SEA is Directive 2001/42/EC (SEA Directive).

Sustainability Impact Assessment (SIA) as an integrated assessment tool is another and more recent category of impact assessment that, according to the European Sustainable Development Network (ESDN), can be defined as a “systematic and iterative process of the likely economic, social and environmental impacts of policies, plans, programs and strategies enabling stakeholders concerned to participate proactively” (Berger 2007). SIA is considered an integrated assessment tool because all three dimensions of sustainable development are explicitly integrated into one assessment procedure and their interdependency evaluated before the decision phase.

Human Rights Impact Assessment (HRIA) has emerged recently as a powerful tool for systematically identifying, predicting and responding to the potential human rights impacts of a business operation, capital project, government policy or trade agreement. Its purpose is to complement either a company's or government's other impact assessment processes and it is framed by international human rights standards (NOMOGAIA website).

Social Impact Assessment, in a simplistic definition, focuses on the effects a project may have on the community. It is a more proactive assessment in that, from very early on, the primary goal is to develop better outcomes and not just identify project effects. IAIA notes that social impact assessment is best understood as "an umbrella or overarching framework that embodies the evaluation of all impacts on humans and on all the ways in which people and communities interact with their socio-cultural, economic and biophysical surroundings" (IAIA website).

Finally, Global Environmental Assessment (GEA) is a highly complex process of assessing the influence of human activities on the ecosystem and vice versa. The end result should be an assessment of either past or future stress factors (chemical contaminants, anthropogenic interventions or natural disasters), their influence on ecosystems and their components (Mitchell, Clark, & Cash 2006).

Major Differences between the Assessments

While all of the above-listed impact assessments differ to some degree, they actually appear to be converging with the goal of sustainability being the common denominator. That said, there are still distinct differences:

- In EIA, it is the company plan that is the basis for the process and the potentially significant environmental effects of individual projects are identified and assessed before a decision is taken. EIA primarily focuses on environmental issues and it is a part of a legal permission process for the proposed investment (although increasingly it is used for social licensing of the project as well).
- SEA assesses government initiated plans and programmes with potentially significant environmental impacts. The focus is on environmental issues and policies as well as on socio-economic effects. Less widespread than EIA, SEA is gaining traction and is now established in an increasing number of national and regional governments.
- SIA assesses strategies, policies, plans, programmes and projects with potentially significant sustainable development impacts. The focus is on the integration of economic, social and environmental policy (Berger 2007);

- GEA differs from local or national assessments in that its focus is on large-scale, cross-border issues. These types of assessments look at environmental problems caused by actors in more than one country; problems that have implications for decision makers in more than one country; or they may simply involve participants from more than one country in the assessment (Berger 2007). In addition, and this is one of the primary reasons why GEAs are so complicated, there is no clear-cut objective to be analysed, such as a company plan or governmental programme or policy.

Stages and Methods Used in EIAs

The basic steps in the EIA process include Screening (to determine whether a project is subject to an environmental assessment), Scoping (during which the project's issues, methodologies, alternatives, possible mitigation measures and public participation plan are developed), preparation of the Draft EIA Report typically followed by a public comment period, and finally, preparation of the Final EIA, which incorporates the public's comments in the draft version.

The environmental analyses in EIAs tend to use methodologies that are more quantitative in nature such as life-cycle analysis, material flow, resource accounting, and ecological impacts. For social impacts, more qualitative methodologies are typically used to better understand sustainable livelihoods, human and social capital measurements, and participatory processes (C. Stevens).

II.3 ASSESSMENT OF ASSESSMENTS

Finally, an Assessment of Assessments (AoA) can be distinguished as a special category that seeks to evaluate assessments themselves in order to improve their functioning as well as increase their support to decision making. The AoA analyses the efficiency of the assessment's production (particularly in light of numerous assessments conducted at the same time and including the same actors or organizations) as well as the effectiveness of its results (whether the increasing number of assessments being carried out actually strengthens the underpinning of policy with knowledge). As such, the AoA consists of two dimensions: (1) concerns related to methodology and applied information, and (2) concerns regarding the importance of the assessed issue at stake. The quality of assessments may be analysed using the following frameworks (EEA 2011):

1. Saliency-Credibility-Legitimacy framework (Mitchell, Clark, Cash, et al. 2006). It evaluates how and for what reason an assessment was undertaken, what the basis and process is for source of information used, and finally what stakeholders were involved

in the process. Therefore, it assesses only the effectiveness of the assessment process, leaving the evaluation of concrete impact and efficiency aspect, aside.

2. Shared Environmental Information System (SEIS) framework. It examines three components – (1) common content (whether the assessment follows a common set of indicators useful in comparing projects, linking with other assessments and making them policy relevant), (2) organizational matters (whether the assessment takes advantage of institutional arrangements to increase access to and transparency of information) as well as (3) available infrastructure and tools (their availability reduces the burden on process participants and helps improve quality). Including all these components in an analysis allows for addressing both questions of efficiency and effectiveness of a given assessment.

Moreover, the European Environmental Agency (EEA) developed two tools to clarify information needs and support improved information collection in the assessment process:

- MDIAK (Monitoring-Data-Indicators-Assessments-Knowledge needs) used to specify and distinguish between different types of information needed for reporting during policy process.
- DPSIR (Driving Force-Pressure-State-Impact-Response) helps to clarify the scope and degree of an assessment's integration across the cause-effect chain (EEA 2011).

Global and regional assessments carried out by various bodies have progressively become an easily accessible source of information about human and natural ecosystems. Due to an increasing number of international agreements and national mandates that require or promote usage of assessments, their number has been steadily growing. Whereas representation and involvement of different interest groups and knowledge holders in the process remains undisputable, such situations when multiple assessments are being carried out without proper coordination can bring about contending demands, lead to redundancies and omissions, and risk lowering the quality of conducted projects. Seeing the number of people involved and resources being spent on assessments, it is reasonable to ask about their usefulness to policy process. Do assessments matter? How can they affect decision-makers and policy choices? Finally, what elements condition their degree of influence? Answers to these questions are far from straightforward, and measuring of the impact of assessments still remains a challenge. Yet, there are elements and features that literature illuminates as critical to the effectiveness of assessments.





Chapter cover image: Sledge dog.
Photo: GettyImages

III. CONTRIBUTION AND INFLUENCE OF ASSESSMENTS ON POLICY-MAKING

As it was defined already, assessment is the collective, deliberative process of summarizing, reviewing and evaluating scientific and local knowledge for the use of decision-making needs to address key problems, issues or uncertainties. The main aim of the assessments is to inform decisions. In other words, being influential in this context means for the assessment to have an ability to affect the issue domain including not only the actors participating in the process, but also their interests, resources, beliefs and applied strategies; the institutional settings; and the behaviours of involved actors such of decisions, agreements and policies, and impacts of these behaviours on the outside world. In evaluation of an assessment's effectiveness, one should not look only at the policy outcomes, so adopted formal legislative or regulatory practices. Change in the issue domain (e.g. environmental policy) is a continuous process that starts primarily by changing the understanding of the issue at stake and the beliefs of process participants, which consequently, with the course of time, may lead to changes in other elements of the issue domain, like interests and goals related to problems addressed by the assessment (UNEP and IOC-UNESCO 2009; A. E. Farrell et al. 2006).

Still, different types of assessments have different abilities to affect. Their diversity comes from the variety of scientific and policy contexts in which they are carried out, the range of goals they aim to achieve, and the scope of their mandates. These differences also depend upon the stage of the issue development within the policy-making process, ranging from identification of the problem to debating it. On the one hand, when the issue is in the early stage of policy-making, previously not discussed on the policy agenda, the assessment can help to introduce the problem to the political debate

rather than change policy immediately and directly. On the other hand, once the problem is in the mature stage, already debated within the policy-making process, the way how various actors and audiences perceive the issue is unlikely to change fundamentally.

In spite of these differences, an assessment's potential contributions to policy debate can be identified as follows. First, the assessment may establish the significance of an issue and elevate it onto the decision-making agenda, especially when the political context for the issue is immature. Second, when already on-going political debate involves some conflicting claims about scientific questions that are seen as important for taking a decision and proceeding, the assessment may provide an authoritative resolution to the issue. However, the conditions for this contribution are related to sufficient scientific knowledge and the political body already dealing with the issue. Third, when the political debate considers alternative options for the issue, the assessment can link alternative actions to consequences and help to reach an agreement on the consequences of these choices. However, such a scientifically funded statement linking decisions with their consequences depends on the willingness of the actors involved to consider the results of the assessment. Fourth, when members of a decision-making body find themselves sharing a specific technical problem, the assessment may recommend common technology alternatives and solutions. Fifth, in case of conflicting instruments and answers to policy-relevant questions, the assessment helps to identify and clarify research priorities on key matters at stake. Finally, it has a potential to demonstrate that policy is providing environmental benefits (National Research Council 2007).

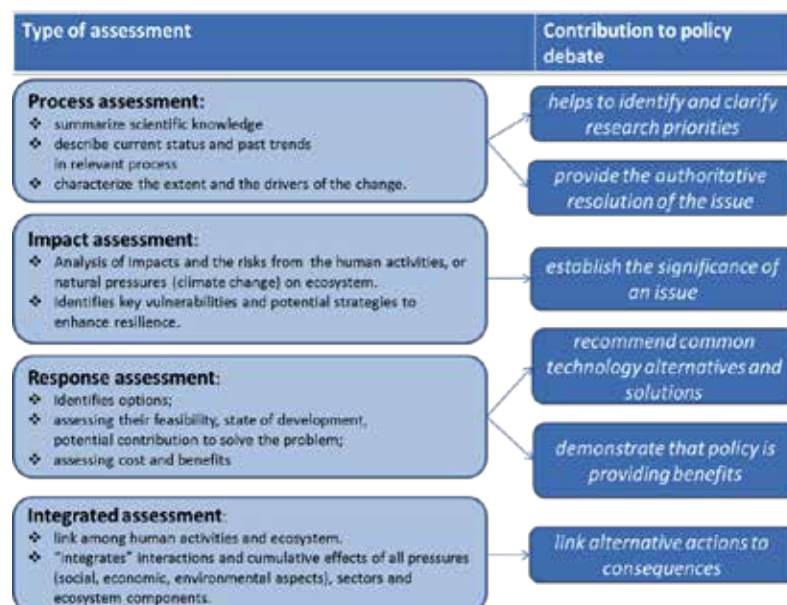


Figure 1.1: Types of assessments and their potential contribution to decision-making.
(based on National Research Council 2007; UNEP and IOC-UNESCO 2009).





Chapter cover image: Arctic Shipping.
Photo: GettyImages

IV. EFFECTIVENESS OF ASSESSMENTS

Defining the effectiveness of assessments is by no means a straightforward task. The problem of agreeing on a single definition of assessments' success stems from the variety of contexts in which the assessments are carried out; the time scale on which the success of assessments is being evaluated (some effects can become visible only in the long-term perspective), the diversity of their goals, applied strategies and potential contributions, and finally, and perhaps most importantly, from a number of different actors who evaluate assessments from their distinct perspectives and interests. In addition, the influence of assessments depends to a large extent on how well they fit within a given scientific and political context (see page 5; National Research Council 2007).

This report follows a simple definition of effectiveness proposed by researchers working within the Global Environmental Assessment Project, so that 'more effective assessments are more likely to have significant influences on the corresponding issue domain and its development' (A. E. Farrell et al. 2006: 7). Still, it is important to keep in mind the relational character of assessments. It means that one can evaluate their effectiveness only in relation to particular targeted audiences. As concerns, perspectives, knowledge, data and assumptions differ significantly among actors, an assessment's results can be accepted or not depending on political, social, economic and other factors beyond the scope of the assessment process and control. Consequently, when evaluating the effectiveness of assessments, one has to ask: effective according to whom? Effective in achieving which goals over what time? (National Research Council 2007).

IV.1 DETERMINANTS FOR ASSESSMENTS' EFFECTIVENESS

Regardless of the intended type of contribution of assessments to policy-making (see Figure 1), research conducted on a number of regional and global assessments related to complex environmental problems has shown that only some of them managed to significantly affect decisions or behaviours of policy-makers, while others had little, if any, impact on their actions. As such the identification of criteria for effective assessment and answering the question of why some assessments have more influence than others have become of crucial importance (Clark et al. 2006; A. E. Farrell & Jäger 2006; A. Farrell et al. 2001; Mitchell, Clark, & Cash 2006). The literature concluded that even though assessments vary in the way they influence the issue/policy domain, general sources of their effectiveness can be found within their attributes of salience, credibility and legitimacy (Mitchell, Clark, & Cash 2006; UNEP and IOC-UNESCO 2009). In other words, an assessment viewed by its audience as more salient, more credible

and more legitimate is more likely to induce change in this audience's beliefs, thus be more influential and effective.

Salience of the assessment is a measure of its perceived relevance to the potential users, whether it addresses their needs and concerns, and provides information in a form and at a time it can be used. The attribute of salience is determined to a large extent during the framing stage so that the problem, its impacts and potential solutions to it are defined and linked to issues over which decision-makers have control and are interested in. Secondly, the geographic scale and timing must meet the needs of the information users. The assessment findings ought to be reframed in a way that is applicable for national and local conditions. In addition, the information has to be delivered at the right time, that is, before decision gets made. On the contrary, an assessment will most likely be ignored by the audience if it does not address a problem relevant for the users or if in discussion of its impacts it fails to identify responses or actions that audiences can undertake to mitigate or adapt to the identified problem. Thirdly, on-going and explicit processes that encourage participation by and are responsive to decision-makers are particularly important to fostering salience. Finally, salience often depends on factors and conditions that go beyond the assessment process - its relevance may be contingent upon external events resulting in the rise or fall of salience of assessments of a particular issue over time (Mitchell, Clark, & Cash 2006).

Credibility of the assessment relates to scientific believability and the quality of data, methods and approaches applied in that assessment. The audience has to be convinced that the scientific content of the assessment is "true" or at least better than competing information. The attribute of credibility should address an assessment's technical and local components. Whereas the former one is often based on credentials of process and participants of the assessment, if they are experts in their field, are trustworthy and provided accurate information in the past; the latter one stems from taking into account local conditions and knowledge, and fitting the higher-scale results into the local context by well-established networks between information providers and users (Jasanoff & Martello 2004; Moser 2006). Furthermore, credibility is a property developed slowly and steadily over time, which confirms the importance of the assessment process during which relevant stakeholders bring in local data and expertise, while gaining a better understanding of the assessment's methods and results. Finally, credibility may depend on a degree of consensus on the debated issue and consistency of new information with already existing knowledge and well-established facts – the more consistent it is, the more credible it may be viewed.

Legitimacy refers to the perceived fairness and impartiality of the assessment process, having considered values, concerns, and perspectives of the relevant audience. Legitimacy is linked to questions of who participated and who was excluded from the process; which causes, impacts and policy options were taken into account; and how information was produced and disseminated. Due to the complexity of human-environmental interactions, the assessment producers have to make choices regarding what to focus on and analyse, and what to leave aside. Such selection is inherently, if often implicitly, linked with the promotion of certain goals and values over others (A. E. Farrell et

al. 2006). To ensure that results of the assessment are viewed as fair, relevant stakeholders (so those affected by the policy supported by the assessment) or at least their representatives whom stakeholders believe voice their goals and concerns, should be involved in the process. Otherwise, excluded relevant actors may consequently question the assessment's legitimacy. Yet, even assessments whose results do not correspond with interests of a particular group, can be perceived as fair if views of that group were accurately represented in the assessment process (A. E. Farrell et al. 2006; Mitchell, Clark, & Cash 2006).

Type and aim of assessment:	Main Audience	Sources of credibility and legitimacy
Process assessment To reach scientific consensus about the state of knowledge.	Scientific community	Credibility: established scientific rules, inclusion of peer reviewed material Legitimacy: target group ensures that relevant questions are addressed;
Impact assessment Value analysis – weighting costs, benefits, and risks.	Scientific community Those affected by impacts	Credibility: include local knowledge about places, sectors, activities that may experience impacts. Legitimacy: Local and regional participation. Problem with global scope - lack of experience in ensuring adequate and legitimate participation at that scale. Requirements for value analysis: - Competent with regard to the values, deployed in analysis trade-offs and options. - Complex procedure for assessing values and risks
Response (technology) assessment To reduce human drivers of environmental change; To make technological choices; Scenarios of future situations.	Industries that develop and deploy technology; Those who enforce decisions; The research community that developed them.	Assessment conclusions: Change in technology – impact on economy, regions, and lifestyle; In case of assessments with broader societal implications, broader community involvement may be necessary.
Integrated assessment To produce a synthesis report; To develop and use models that link dynamics of societal, biological, and physical systems.	Policy and decision makers	Credibility: Equity analysis based on broad consensus; Degree and nature of integration with reference to the users and purpose of the assessment; Address multiple spatial scales (local and global), “nested matrix” approach; Multidimensional problem and multi-disciplinary character; Use models that are simplifications of the reality Legitimacy: Social and natural science involved in the assessment process. Local and regional participation.

Table 1: Sources of credibility and legitimacy according to assessment type and targeted audience (based on National Research Council 2007).

Salience, credibility and legitimacy are considered three essential properties of the influential assessment process. However, it should be stressed that these attributions are ascribed to assessments by their users, they are not themselves factors inherent to the process. In other words, they are a matter of subjective judgement and not of an independent reality. Therefore the goal of assessment producers and designers should be to increase the number of stakeholders who find and consider the assessment as salient, credible and legitimate.

Whereas salience is this attribute of assessment which is closely linked to effective communication with its targeted audience, both credibility and legitimacy are fundamentally related to a question of trust, that is, whether people judge that an assessment can be trusted. It is, however, important not to confuse these two kinds of trust since they both are required in the assessment process, but reaching them may come through different design choices and means, often characterized by trade-offs. While credibility is attributed to the assessment by scientific experts on the basis of indicators similar to ones they use to gauge the trustworthiness of other scientific outcomes, legitimacy is attributed to assessment by its stakeholders on the basis of perceived fairness, balance in representation, transparency of process and other criteria similar to those they use to evaluate any other political or administrative practices. In other words, legitimacy answers the question of who has interests at stake in the assessment, while credibility responds to what kind of expertise is demanded to understand the debated issue. It is important to keep this difference in mind since both types of trust may be required in the process, but their earning may come through different means and design choices, in addition to the risk of trade-offs between the two (National Research Council 2007).

One of the challenges associated with a conduct of effective assessment is that the relation between attributes of salience, legitimacy and credibility is characterized by a trade-off, meaning that efforts to maximize one of these aspects tend to decrease the others. For example, actions taken to increase the credibility of an assessment process, like isolating scientists from the policy domain, may result in decreasing its salience, and, consequently, lowering chances for the assessment to be influential. Similarly, enhancing the legitimacy of assessments by inclusion of scientists who represent views of groups that the assessment seeks to influence may risk the credibility of the process in the eyes of the other decision-makers and observers. Methods and factors aiming at resolution of this and other challenges are presented in the next parts of this report.

IV.2 DESIGN FEATURES FOR SUCCESSFUL ASSESSMENTS

As outlined earlier, for the assessment to be effective, its receivers have to view it as salient, credible and legitimate. Yet there are certain challenges in the conduct of assessments that may inhibit their influence on the targeted audience and decision-making processes. Effectiveness of assessments can be lost in many ways: from insufficient control or disagreements over scientific data; through addressing questions relevant only from the perspective of the research community, but not from the viewpoint of the end-users of the produced information; and to finally adopting a 'one-size-fits-all' policy, without localizing synthesized knowledge and tailoring it to local needs and concerns. To avoid such flaws the assessment producers during the design phase should focus on several factors that are of great importance in fostering influence of both process and product of the assessment. These elements encompass, inter alia, framing of the assessment process, the science-policy interface, engaging stakeholders, connecting science with decision-making, the review process, consensus building, characterizing uncertainty and providing a strategic communication plan. Addressing them adequately increases the likelihood that the given assessment will be perceived as salient, credible and legitimate by its intended audience.

Firstly, framing is next to engaging stakeholders and managing science-policy interface as one of the key elements in the design of successful assessment. On the basis of underlying worldviews and beliefs, within particular institutional settings and among diversity of goals of different participants, framing of the assessment determines the problem under examination, which of its elements will be analysed and which will be left outside the scope of investigation, and how different ideas will be used and interpreted. Framing not only guides the everyday activities of practitioners involved in the assessment, but it also defines the selection of people who will be included in the assessment and the design of the entire process. As such, framing is crucial in shaping assessment's credibility and legitimacy, ensuring whether those whose interests are at stake and who will be affected by decisions resulting from the process are involved in it, and whether those who have knowledge on the issue participate in the process in ways that allow their knowledge to influence the debate. For differences in requirements for credible and legitimate assessment according to its type and targeted audience, please see Table 1.

Secondly, science-policy interface is another element of fundamental importance in achieving credibility, legitimacy and salience of the assessment. Forms of interactions between scientists and policy-makers within the process may range from complete isolation of the scientific community from decision-makers, to

institutionalized collaboration and deliberative process between two groups. Yet, regardless of the undertaken approach and preferred type of interaction, both groups have to maintain their respective identities, which are based on completely different goals: finding the truth in the case of scientists, and responsible use of power in the case of policy-makers (A. E. Farrell et al. 2006; Lee, K.N. in: A. Farrell et al. 2001), otherwise they will lose sources of their credibility and legitimacy. Therefore, clearly articulated boundaries are necessary, particularly between those ordering the assessment and those carrying it out. The regulatory body and expert group negotiate boundaries of their interactions and decide upon the issues that each will deal with separately and issues which will be shared between them (Guston, D.H. in: A. Farrell et al. 2001; National Research Council 2007). The assessment in this context can be understood as a boundary organization between two entities where maintaining an explicit boundary is crucial for results of the entire assessment process, including its review stage and acceptance of scientific results by the authorizing body.

Thirdly, stakeholder participation - in recognition of the utmost importance of stakeholder engagement and participation in fostering assessment's effectiveness, this element is the topic of the whole next section of this report (see p. 24).

Fourth, connecting science with decision-making also goes beyond negotiating and maintaining a clear boundary between scientists and policy-makers, and the complexities of stakeholder participation. It addresses a frequently occurring mismatch in scale and timing between information delivered by assessment producers and information needs of policy-makers. Therefore, the ability to connect science with decision-making requires the assessment to be acquainted with given institutional, political and economic contexts and the capacity to develop decision support tools that produce salient, context-specific information, available at right time and scale. For example, on the one hand, tailoring of integrated models to a particular region or decision-making context may enhance the ability of these assessments to be utilized by decision-makers. On the other hand, it also shows how regional assessment can be included, or nested, in a broader framework of national or global assessments - to draw from them, but also enrich them with local knowledge and expertise.

Fifth, transparency, quality control and a review process play a very significant role in establishing legitimacy and credibility of the assessment process. In general terms, transparency means that individuals interested in the assessment can look into its process and evaluate for themselves data, applied methods and taken decisions. In practical terms, the literature highlights two points to increase assessment's transparency and via them its credibility and legitimacy. Firstly, to address the different

information needs of different interested parties (e.g. experts and laymen) the assessment should make available both a summary and its basic data. Secondly, the best way to achieve transparency is the standardization and institutionalization of procedures for availability of necessary information (A. E. Farrell et al. 2006). Quality control describes the process of ensuring that material contained in the assessment report is consistent with the underlying data and analysis, which makes it crucial to the credibility of the assessment. Whether material in the report and underlying data match each other is a matter of experts' agreement. In light of debates on what makes up an expert opinion and to further ensure unbiased presentation of assessments' results, the report goes often through a review process. The review process has a potential to increase both credibility and legitimacy of the assessment thanks to many individuals from a larger range of stakeholders involved in its evaluation. As such, the risk that experts or policy-makers will promote their own agenda can be minimized with the inclusion of a balanced group of reviewers with various viewpoints and multidisciplinary expertise, often outside the field being assessed.

Still, a dissent among numbers of experts with distinct views raises an issue of consensus building between an assessment's participants in order to be able to provide clear guidelines for decision-makers, necessary for fostering the effectiveness of assessment. There are many definitions of consensus in the realm of assessments. One way to achieve the agreement is to explain differing opinions as inherent uncertainties of the state of knowledge or as alternative interpretations of available information. Another is inclusion, though it is rather rare, of 'minority reports' of those with dissenting views. Furthermore, to incorporate differing perspectives of participants, some assessments widen their parameters of uncertainty, while others, most often perhaps, simply avoid areas where the greatest discords prevail, like in the case of extremities of possible outcomes (for consequences of such choices see below). Finally, from the perspective of achieving greater assessment legitimacy, it is not only a question of how differing opinions are included in the report, but also how the consensus itself is defined and on the basis of which rules it has been reached. Consensus can mean a majority of votes or the lowest common denominator, but also that 'nobody spoke loudly enough against a point' or powerful actors did not oppose the issue. In addition, consensus often reflects agreement only of those present and participating, with the exclusion of opinions of those who were unable or not invited to join the process (A. Farrell et al. 2001). Instead of reaching the consensus by all means, the assessment report could, for example, provide for fair presentation of all sides of the argument, with clear explanation of how each conclusion has been drawn, and to allow information users to evaluate it on their own (National Research Council 2007). Regardless

of the preferred solution, addressing the above points at the outset of the assessment process is important to enhance its legitimacy, thus its impact and influence.

The seventh design feature is the treatment of uncertainty. Assessments are often meant to inform decision-makers about matters that are to them either new or controversial for reasons of their policy implications. Yet, research synthesized for the purpose of assessments is frequently characterized by uncertainty that cannot be reduced or eliminated in the short-term and even in a longer time perspective. To differentiate it from undesired ambiguity about research results, the effective assessment should describe the level and sources of such uncertainty in order to deliver more confident and reliable results of the analysis to decision-makers, to help them understand the present state of knowledge and assess the potential effectiveness and risk associated with certain policy decisions. The uncertainty can be treated both through quantitative and qualitative methods (see Table 2), with the latter ones applied often in cases where an objective measurement of uncertainty is not possible due to the complexity of the issue at stake (like in climate change). In such situations the characterization of uncertainty is based on experts' opinions and qualitative metrics such

as 'likely' or 'highly probable' to which experts agree in the assessment process.

In case of assessments whose primary goal lies in reporting on the scientific consensus of a particular issue, the experts representing a broad spectrum of stakeholders and disciplines gathered in a panel must reach an agreement on what to include in the assessment and how to present its results. This type of consensus-seeking assessment is more prone to ignore the occurrence of extreme events and exclude them from the scope of analysis. However, attention should be paid to the fact that purposeful omission of extremities may not be serving the long-term interests of the policy-community as it risks the mischaracterization of a problem as a whole, and can in the long-term undermine credibility and salience. To avoid such a situation, the literature recommends stressing the participatory side of assessments, instead of reliance only on the final product for delivery of the assessment's results. Engagement of decision-makers in the stages of the assessment process where consensus on uncertainty is being discussed can improve their understanding of presented outcomes and contribute to the design of more sustainable policies. (Patt 2006: 119)

Methods	Description	Limitations
Statistical methods	Probability distribution	Assess random error in the measurements, but not systematic error that comes from artefacts in instrumentation. Not applicable for complex synthesis and analysis, including many factors and parameters.
Model simulations	Range of probable model outcomes using a series of model realizations with a range of values for various inputs.	This method can deal with complex analysis, but if the model omitted some important process, the results can be misleading.
Sensitivity analysis	Assess sensitivity of the model to various parameters, therefore it tests scenarios.	
Monte Carlo simulation	MC analysis merge the sensitivity analysis and probability distribution.	
Expert judgment	Consensus of experts to develop qualitative metrics ("likely", "virtually certain")	Participants must share and accept the meaning intended by those metrics
Scenario analysis	Clarify the importance of alternative assumptions and resolve conflicts by illustrating a range of potential outcomes	Information intensive and require internally consistent data; Require appropriate ways of communication to interpret the results.

Table 2: The approaches and methods to characterize uncertainty in the assessments (based on National Research Council 2007).

Finally, to understand scientific findings by the targeted audience, a strategic communication plan is necessary. The objective of the plan is to stimulate individuals to think about problems, risks, solutions, and consequently influence policies, decisions, and behavior. To reach this goal it should recognize and respond to interests, motivations, and values of an assessment’s audiences, and address their knowledge base, barriers and possible resistance.

The effective communication plan is based on frequent consultations with stakeholders, media outreach, engaged dialogs and meetings with key audiences, and, finally, diversity of publications tailored to meet multiple audiences. The successful outreach strategy should be characterized by flexibility – so it can vary with objectives and audiences and deliver products differing in complexity, policy relevance, geographical scope, and technical emphasis.

Salience	Credibility	Legitimacy
Participation Efforts to bring local information and concerns Information brokers – link local and global knowledge	High quality science Building “record of honesty” Ensuring that potential users sufficiently understand data, methods, and models.	Building trust through extended interactions with assessment producers Overcoming deep, pre-existing distrust between information producers and its potential users.

Table 3: Mechanisms to foster the effectiveness of assessment. Based on (Clark et al. 2006).





Chapter cover image: Puffin.
Photo: GettyImages

V. STAKEHOLDER PARTICIPATION

V.1 THE ROLE OF STAKEHOLDER ENGAGEMENT IN ASSESSMENTS

Broader stakeholder engagement, extending outside of the science-policy nexus, is currently a clear trend in assessment work and constitutes a basis for assessments' relevance, salience, and credibility (although not without trade-offs). Experts claim that "establishing trust and credibility with stakeholders requires sustained interaction as well as demonstrated openness to incorporating stakeholders as full partners in the assessment effort" (Lemos & Morehouse 2005). In that way, the traditional information flow from producers to users shifts from one-way to two-way communication, thus enhancing mutual understanding and the coproduction of knowledge.

If assessment is to be policy-relevant and publicly accepted, different values associated with issues under discussion have to be taken into account. That is especially true regarding the inclusion of participants from organizations the assessment hopes to influence, as decision-makers are more eager to listen to assessment in which they participated. For the same reasons, in case of integrated assessments, public involvement is a particularly effective way to integrate environmental, cultural, social and economic considerations.

Benefits from broader stakeholder engagement are twofold. First, for the immediate assessment outcome,

engagement contributes to the opening of an assessment to different types of knowledge and information coming from outside of science, as well as raises the interests of various groups in the assessment, the understanding of the process and trust in the balanced character of the final product. Second, in the long-term perspective – primarily in connection with the assessment process itself – stakeholder participation builds trust and a shared knowledge base, as well as enhances general awareness of the existence of multiple perspectives on the issues in question. Participation in assessments can be seen as a capacity-building and empowering process (equipping participants with new knowledge in assessment methodology and tools), as well as, in general terms, contributing to democratic society and responsible decision-making. Properly conducted consultations augment the development of long-lasting partnerships between researchers, decision-makers and stakeholders, which is vital in future cooperation (Arctic Environmental Protection Strategy 1997; National Research Council 2007; Therivel 2010).

A wider participation of stakeholders is particularly important in the case of impact assessments that result in value-burdened outcomes and choices. This is connected with a greater diversity of opinions, affecting assessments' legitimacy and credibility (National Research Council 2007: 60-61).

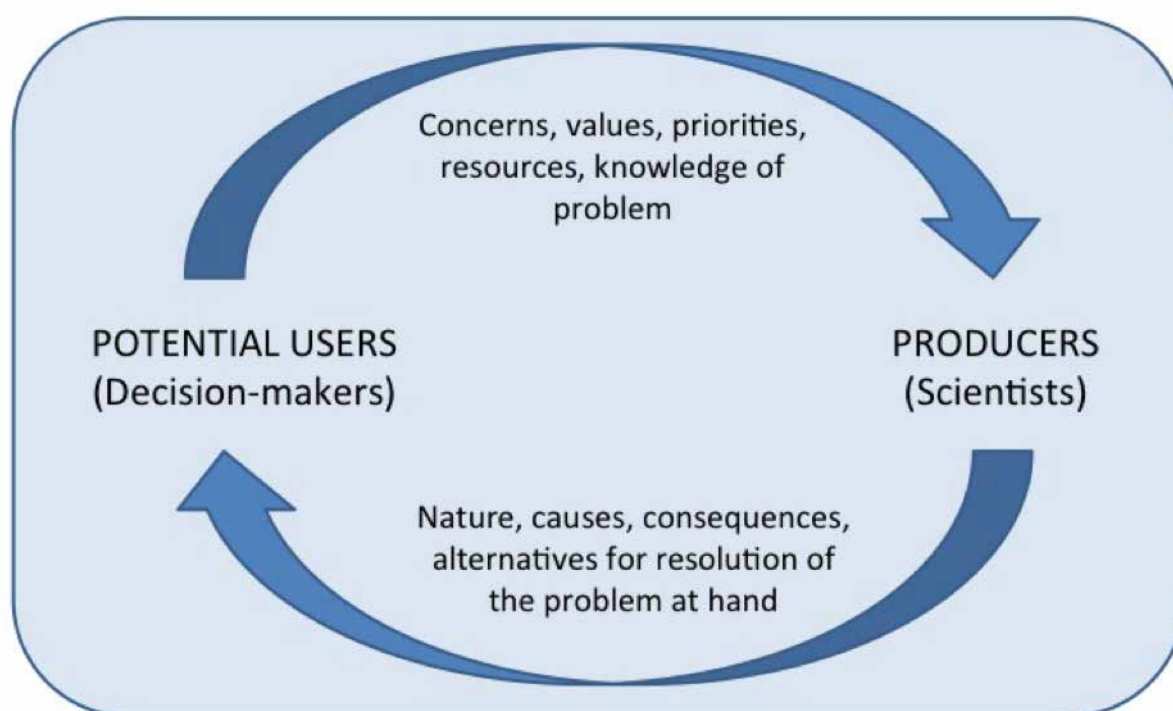


Figure 2: Two-way communication between assessment producers and users. This relation is the basis for the process of coproduction of knowledge (based on Mitchell, Clark, Cash, et al. 2006).

The aims of public involvement in assessment processes include:

- Acquiring baseline information by taking advantage of locals, practitioners', traditional and indigenous knowledge, skills and resources;
- Taking into account and expanding the 'decision environment' in which the policy developments (expected to be driven or supported by the assessment) are formed and implemented;
- Integrating the multiplicity of values into assessment work;
- Allowing for more sensitive consideration of themes/ impacts/issues and ensuring that important ones are not overlooked;
- Raising awareness and building support for the assessment process, leading to more socially and politically acceptable outcomes and resulting policy decisions;
- Raising transparency, credibility, political legitimacy and (depending on the nature of stakeholder involvement) the notion of independence of the assessment process, making it thus more likely to influence decision-making;
- Building scientific community sensitiveness to societal needs;
- Building trust between various categories of users and participants;
- Creating an environment in which vulnerable and marginalized voices can be heard;
- And finally, identifying and raising awareness among stakeholders of uncertainties in policy-making (Abaza, Bisset, & Sadler 2004; Ahmed & Sanchez-Triana 2008; Arctic Environmental Protection Strategy 1997; EEA 2011; Gauthier, Simard, & Waaub 2011; Knigge & Leipprand 2003; National Research Council 2007).

In a broader sense, stakeholder engagement should lead to the actual co-production of knowledge, allowing especially those commissioning the assessment and those who are using its results to influence the assessment process and its outcome. Consequently, the assessment can be better aligned with decision-making processes and have a structure adjusted to decision-makers' ways of thinking and needs. This concerns the accurate timing of delivering relevant information, their format and scope, as well as determines the need for broader public participation. However, if the concrete outcomes of assessments are influenced by specific stakeholder groups, difficult trade-offs between scientific credibility and policy-making salience may arise.

V.2 IDENTIFICATION OF STAKEHOLDERS

Stakeholders include all those who are interested in and affected by the assessment process, which is partly dependent on the identification of the target audience of the assessment. For the purpose of this report, stakeholders can be seen as coming from two angles (from the perspective of assessment process):

- internal to the assessment process: those conducting, commissioning the assessment or using its results within policy-making;
- external to the assessment process: those possibly affected by policy developments or decisions influenced by the results of assessment work (based on Abaza et al. 2004).

Markedly, some bodies or groups, like indigenous organizations in the Arctic Council, may be considered both internal and external stakeholders.

With regard to internal stakeholders, engagement is a key aspect of the science-policy interface, determining the level of fit and facilitating the co-production of knowledge and policy. Extending stakeholder outreach beyond the internal group is an element of a larger democratic process, broadening the audience of assessments, helping to build capacity of various groups but also inviting a wider spectrum of values, concerns and understandings, and providing non-scientific information (Abaza et al. 2004: 68-76; A. Farrell et al. 2001: 327; National Research Council 2007).

Stakeholders include (United Nations Environment Programme 2009):

- those likely to be positively or negatively affected, with special attention to the poor and marginalized;
- intermediaries in the policy-making process and its implementation – those who have critical interests, knowledge and expertise;
- those able to significantly influence the policy-making process and generally having much power.

The following criteria need to be considered in the identification of stakeholders: stakeholders' position, representativeness (especially in the case of NGOs), interests, power, role in the policy-making process, the value of possible contribution, willingness to engage, and potential negative or positive impacts on the theme discussed (Abaza et al. 2004).

V.3 METHODOLOGICAL BASES FOR STAKEHOLDER ENGAGEMENT

There is no single correct methodology for stakeholder involvement. Methods and tools for engaging stakeholders and conducting consultations depend on the type and purpose of an assessment, issues under consideration, expected inputs, social, cultural, political and institutional context, as well as available human

and financial resources of the team conducting an assessment. In general, stakeholder engagement should be:

- effective: allowing stakeholders to voice their concerns and views as well as providing those asking questions with the input and information they need in decision-making;
- efficient: the costs of consultations are proportional to the input received;
- meaningful: not only provide the public with detailed and comprehensive information, but also create an opportunity to influence decisions;
- transparent and characterized by openness: enhancing acceptability, accountability and credibility of decision-making, as well as building understanding and trust between stakeholders, decision-makers and experts (Arctic Environmental Protection Strategy 1997; National Research Council 2007; Partidário 2007; Therivel 2010; United Nations Environment Programme 2009).

For example, on the one hand, consultations limited to a basic ‘informative’ level (e.g. hearings) are often seen as ineffective. The comments are few, unhelpful, untargeted, either too specific or too general. On the other hand, tangible inputs are usually based on more “targeted and intensive” consultation methodology. The specific techniques and tools include public hearings, workshops, focus groups, questionnaires, calls for statements, anthropological methods (e.g. visits and interviews), online tools or establishment of a stakeholder advisory committee (European Commission 2009; Therivel 2010).

Engagement of stakeholders, especially those external to the assessment, may require proactive reach-out and capacity-building. Acquiring meaningful input from groups and organizations that have limited human and financial capacities to participate in the process is challenging. That is the case especially with marginalized and vulnerable groups (e.g. women, youth, indigenous peoples, disabled persons, the poor), who are often the ones affected the most by environmental, economic or social changes that are assessed or policy developments that the assessment is about to trigger. Thus, capacity building may refer not only to gaining understanding of the scientific background, but also to support in terms of human or financial resources (National Research Council 2007: 118-120).

The United Nations Environmental Programme (UNEP 2009: 25; Abaza et al. 2004: 75) identified some practical guidelines for public consultation in assessment processes:

- All relevant target groups should be consulted;
- Sufficient publicity needs to be ensured;
- Chosen consultation tools should be adapted to the

target group;

- Stakeholders should have sufficient time for participation;
- Results need to be published and responses acknowledged, which also includes providing feedback (report on the process and how the consultations affected it). This is particularly important if the public confidence in participation is to be maintained and long-term partnerships with stakeholders established;
- Consultation organizers should make sure not to be unduly influenced by one stakeholder group;
- It should be remembered that consultations are never a substitute for an analysis of an issue;
- Stakeholder engagement should be adjusted to local conditions and capacities and based on carefully prepared planned and commencing at earliest stages.

V.4 KEY CHALLENGES, CONSTRAINTS, AND PROBLEMS

Stakeholder engagement certainly makes the process of conducting assessment more complex and resource intensive. In addition to managing cooperation between scientists coming from various disciplines and negotiating with those who have commissioned and provided funding for the assessment, values and perspectives of a broader spectrum of users and actors somehow affected by the assessment need to be taken into account.

The main difficulty connected with stakeholder engagement is balancing between acquiring meaningful involvement of stakeholders (especially including decision-makers) and the type of stakeholders’ influence over the process, which skews the scientific outcomes. Whereas the former one ensures assessment’s salience, the latter may undermine its credibility.

Another balancing act needs to be performed between the ideally as-broad-as-possible stakeholder involvement and the capacity of the assessment team to incorporate stakeholder input, to avoid the entire process becoming too complex, inefficient and costly.

A major constraint in conducting consultations is lack of actors’ interest in and capacity to participate. Personnel, time and financial costs (both for consultation organizers and stakeholders) may limit participation, adversely affecting the bias, quantity and quality of received input. Limited participation may also be caused by “participation overload” or “consultation fatigue”, as the resources of many smaller organizations become stretched (Abaza et al. 2004: 71-72; Gauthier et al. 2011: 51; Knigge & Leipprand 2003).

Assessment capacity refers to the ability of relevant groups or organizations to meaningfully engage and

participate in the assessment and to sustain that ability over time. It requires possessing necessary linguistic, technical, and material capabilities and human resources (A. E. Farrell et al. 2006)(A. E. Farrell et al. 2006). As such resources are not always present, either the stakeholder engagement has to be adjusted to the existing capacities, or capacity-building actions need to be taken. This can be done by fact-findings efforts, development of goals and objectives for specified assessment activities, training in the use of specific decision-support tools, and use of various engagement strategies, for example, focus groups (A. E. Farrell et al. 2006).

Finally, the engagement of the private sector is seen in literature as critical but at the same time particularly challenging, as business' interest in assessments operating at high levels of generalization may be limited. The private sector has different information needs, working modes, and it operates under market conditions, thus, to ensure its involvement, sector-specific engagement strategies may be required to encourage its participation. In contrast to broad public engagement, private sector involvement is often very specific regarding discipline or issue. Consequently, on the one hand, business may contribute significantly with technological expertise to the assessment process, while on the other hand, there is a risk that engagement would serve an individual company's interests (National Research Council 2007).





Chapter cover image: Solar panels with wind turbine in the background.
Photo: GettyImages

VI. EVALUATION OF ASSESSMENTS

The increasing interest in global and regional assessments of different kinds stems primarily from concerns for better-informed, more effective, more efficient and more transparent policy-making (Berger 2007). As it was outlined in earlier parts of this report, due to their fundamental role in bridging the gap between scientists and policy-makers the assessments, understood not merely as their final products or reports, but more as social processes and communication channels, can influence the formulation, implementation and/or evaluation of public policies, though in different forms and to various extent. Regardless of the given context and particular issue at stake, three major properties of salience, legitimacy and credibility were identified as critical in raising the likelihood that the knowledge contained in the assessment can prove to induce change in the policy domain. Yet, salience, legitimacy and credibility are not factors per se, but attributions made by the information-users often on the basis of the process that led to the information or knowledge creation. In order to encourage recipients to label the assessment as relevant, legitimate and credible, those designing and carrying it out should pay attention to features like framing, science-policy-interface, stakeholder participation, transparency, consensus building, treatment of uncertainty and a comprehensive communication plan, which were all described in greater detail in former sections. In addition to already-mentioned elements, very practical (therefore perhaps sometimes underestimated) are also time constraints for completion of the project vs. timeline consistent with the state of underlying knowledge base, as well as the scope of planned works and human resources dedicated to the project (A. E. Farrell et al. 2006). Besides, as part of an adequate framing, the assessment should include a well-articulated mandate with clearly defined and realistic goals and objectives corresponding with needs of policy-makers. The mandate should encompass a detailed implementation plan, guidance on what decisions the assessment is meant to inform, and material on how progress towards prescribed goals will be gauged (NRC 2005 in: National Research Council 2007). Furthermore, an appropriate framework ought to be developed to ensure that the assessment will be able to deliver answers to posed questions, feed the information needs of its target users and safeguard that the scope and scale of the assessment will match the scope and scale of the choices made on its basis. Last, but definitely not least, resources and funding dedicated to the assessment should correspond with its mandate and defined goals and include often overlooked means to support proper stakeholder participation and communication activities (National Research Council 2007).

All these elements are of fundamental importance in the

conduct of assessments and they have been identified in literature on the basis of analysis of both global and regional assessments, conducted in many parts of the world and in many environments, focused on various elements and including representatives of numerous disciplines. They provide lessons for the conduct of future assessments and offer potential for raising their effectiveness, thus their greater impact and contribution to better-informed policy-making. As the next part of this report is devoted strictly to the Arctic Council (AC) and its assessment record, from the number of above-listed properties and design features will be selected and developed those of particular relevance to the Arctic environment, to its governance and institutional settings. By doing this the report aims to inform and equip the reader with a set of basic tools for a deepened and more thorough understanding of assessments in the Arctic, which have been the core of the Arctic Council's activities and also played an essential role in establishing the Arctic as a distinct region in the realm of international relations and in international political consciousness. Before moving to evaluation of the most recent AC assessments, the following section will open with a general introduction to the Arctic Council and its modes of operation.



The background of the entire page is a close-up, slightly out-of-focus photograph of snow and ice. The snow is white and textured, with some small, dark, reddish-brown objects (possibly dried plant matter or debris) scattered throughout. A solid blue horizontal bar spans the width of the page, positioned behind the title text.

Part

2

**ASSESSMENT
OF THE ARCTIC
COUNCIL
ASSESSMENTS**





Chapter cover image: Seal.
Photo: GettyImages

VII. ARCTIC COUNCIL

VII.1 GENERAL INTRODUCTION

The Arctic Council (AC), established in 1996 as a successor to the Arctic Environmental Protection Strategy (AEPS), is a primary circumpolar forum dealing with matters pertaining to the Arctic. Its main focus has been issues of sustainable development and environmental protection in the region, with matters related to military security being outside of the scope of the AC's mandate. The Arctic Council operates on a high-level intergovernmental stage and is intended to promote cooperation, coordination and interaction among the Arctic states – Members of the Arctic Council (Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States), with the involvement of representatives of the Arctic indigenous peoples who in the AC are recognized as Permanent Participants (PPs)¹. As such, Permanent Participants are entitled to attend all the AC's meetings and undertakings, and the Ottawa Declaration calls for their full consultation in the entirety of the AC's activities, though without providing them with a right to vote (Declaration on the Establishment of the Arctic Council 1996). Inclusion of the PPs category is an innovative and largely unprecedented governance arrangement (Arctic Governance Project 2010), with similar arrangements established only in the UN bodies specifically dedicated to indigenous issues or to some extent in Barents cooperation. Recognizing the special importance of indigenous peoples in the Arctic has certainly served the AC's legitimacy (Koivurova & Heinämäki 2006).

All decisions of the Arctic Council are made by consensus of all eight Arctic states. As the Arctic Council is a soft-law body, its decisions commit states politically but they are not legally binding (for more on soft-law cooperation see Hasanat, 2012). The chairmanship of the Arctic Council rotates among Arctic states biennially, with the chair country convening the Ministerial Meeting – the highest policy-making body of the AC - which includes the member countries' Ministers for Foreign Affairs. The Ministerial Meetings are a platform for accepting the work conducted in between the ministerial sessions, approving new projects and for discussing the future policy direction of the Arctic with a broad and diverse group of participants (Koivurova 2009). In addition, to raise the political role of the Council, in between ministerial meetings, deputy ministers and ministers from other departments convene to discuss issues of common concern. Furthermore, selected senior officials

from each Arctic state act as Senior Arctic Officials (SAOs) and meet at least twice per year. In practice they constitute the main AC's body responsible for overseeing the activities of its subordinates: they receive and discuss reports from Working Groups (WGs, see below) and task forces (TFs), coordinate, guide and monitor activities of the Arctic Council, and finally review and make recommendations on proposals raised by Arctic states and Permanent Participants to be submitted to a ministerial meeting.

Since January 2013, the AC also has a standing Secretariat (ACS) located in Tromsø, Norway to enhance the Council's administrative and work capacities. The ACS is tasked with providing organizational support to the Arctic Council's members and Permanent Participants. In its role, the ACS is responsible for, inter alia, arranging meetings, circulating reports among the AC's bodies as well as Observers, assisting the AC's Chair in drafting meeting documents including final reports, and adequate communication and outreach. The Secretariat is expected to give more institutional memory and operational efficiency to the main circumpolar forum with the growing number of observers and outside actors interested in developments in the Arctic region. In addition, the Indigenous Peoples' Secretariat (IPS) supports activities of Permanent Participants within the Arctic Council, in particular via facilitating exchange of information.

The Arctic Council may also grant Observer status to non-Arctic states, global and regional inter-governmental and inter-parliamentary organizations, and non-governmental organizations that are capable of contributing to its work. The entities that have been awarded this status can attend meetings and other activities of the AC unless SAOs decide otherwise. Their observer status continues as long as there is consensus on it among Arctic states' ministers and it can be suspended if the observer engages in practices being at odds with the Ottawa Declaration or the Revised Arctic Council Rules of Procedure from Kiruna, May 2013. Observer status is presently the only way for non-Arctic actors to get formal (albeit largely symbolic) recognition of their role and involvement in the Arctic Council as well as to gain access to its proceedings (Graczyk & Koivurova 2013).

The Arctic Council prepares and carries out its programmes and projects through various Working Groups (WGs) and Task Forces (TFs)², all being subject to the guidance and direction of SAOs. Content proposals and suggestions for the Arctic Council activities can

1. Presently there are six Permanent Participants: Arctic Athabaskan Council (AAC), Aleut International Association (AIA), Gwich'in Council International (GCI), Inuit Circumpolar Council (ICC), Russian Association of Small-numbered Indigenous Peoples of the North, Siberia and the Far East, and the Saami Council. Their number can still grow up to seven, in accordance with provisions of the Declaration on the Establishment of the Arctic Council which states that the number of PPs should at any time stay smaller than the number of the AC members.

2. The Task Forces are appointed at the Ministerial meetings to work on specific issues for a limited amount of time and comprise experts from the WGs and representatives from the member states. There are currently four active Task Forces in the Arctic Council: Task Force on Arctic Marine Oil Pollution Prevention (TFOPP), Task Force on Black Carbon and Methane (TFBCM), Scientific Cooperation Task Force (SCTF) and Task Force to Facilitate the Circumpolar Business Forum (TFCBF).

be made by Arctic states, Permanent Participants, and Observers through Arctic states or PPs. Proposals are often put forward at WG meetings, but they may also be placed directly on the agenda of SAO meetings. The decisive drafts of declarations for ministerial acceptance are prepared at SAO sessions where the PPs have the equal right to take part in the debate with Arctic States (Kankaanpää 2012a).

Reports on the AC's activities are made primarily by SAOs and WGs. Firstly, the WGs send their individual reports to SAOs detailing their actions, progress on them, and their future plans. The WGs may publish results of their works and projects only once they are approved by SAOs. Secondly, on the basis of information provided by the WGs, SAOs prepare reports for the ministers, including a number of recommendations for approval at the Ministerial meeting. Whereas SAO's reporting to ministers could be regarded as background information, to enable the ministers to make decisions on behalf of the Arctic Council, the information provided by WGs and Task Forces is useful and valuable for Arctic governments and inhabitants of the region.

The AC does not have a general budget but recently a Project Support Instrument (15.9 m€)³ aimed at supporting AC's priority projects has been launched under the auspices of the Nordic Environment Finance Corporation. The AC members are responsible for directing resources to common activities and/or seeking and coordinating financing from other sources. Arctic states voluntarily commit resources to projects that they want to support or they participate in specific initiatives. The resources brought in are either 'in kind' human resources or facilities, or directed project funding from state budgets. The projects may also seek external funding from, for example, the Nordic Council of Ministers, the National Science Foundation or the EU Framework Programmes (Kankaanpää 2012a).

Currently, there are six Working Groups: Arctic Contaminants Action Programme (ACAP), Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), and Sustainable Development Working Group (SDWG). Each WG has a specific mandate under which it operates, its own meeting schedule, a chair, management board or a steering committee, and is supported in its functions by its own secretariat.⁴ The WG's management boards are typically comprised of representatives of national governmental agencies of the Arctic states connected to the mandates of the Working Groups as

well as representatives of the Permanent Participants. In addition, the AC's observer states and organizations can attend sessions of the WGs and participate in their specific projects. In meetings to which the observers have been invited, they may, at the discretion of the chair, make their statements after AC members and PPs, present written statements, submit relevant documents and provide views on the issues under discussion. Furthermore, observers can also submit project proposals via Arctic states or Permanent Participants but the total financial contribution from all observers to any given project cannot exceed the financing from Arctic countries, unless SAOs decide otherwise. Finally, it has been the practice of the WGs to also invite to their meetings guests or experts on the deliberated topics.

The Arctic Contaminants Action Programme (ACAP) is responsible for increasing efforts to limit and reduce emissions of pollutants into the environment and promoting the international cooperation in this respect. The AMAP Working Group's principal task is monitoring and assessing the status of the Arctic region with regard to pollution and climate change issues. The AMAP documents their levels and trends, pathways and processes, effects on ecosystems and humans, and is aimed to propose actions to reduce associated threats for the governments' consideration. The Conservation of Arctic Flora and Fauna (CAFF) WG is responsible for addressing conservation of Arctic biodiversity. Its most recent and by far the most comprehensive product is the Arctic Biodiversity Assessment (ABA), which will be a subject of more detailed analysis later in this report. Furthermore, the Emergency Prevention, Preparedness and Response (EPPR) group is charged with addressing various aspects of prevention, preparedness and response to environmental emergencies in the Arctic, whereas actions of the Protection of the Arctic Marine Environment (PAME) are concentrated on policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from land and sea-based activities. Last, but not least, the Arctic Council's Sustainable Development Working Group (SDWG) through its projects and undertakings seeks to advance sustainable development in the Arctic and enhance the environment, economies, culture and health of indigenous peoples and Arctic communities by implementing projects on various sectors of governance other than environment.

The conduct of sound, science-based and policy-relevant assessment and delivery of outreach materials to inform decision-making processes has been at the core of the Working Groups' activities. However, the Arctic Council does not carry out research itself. Its reports are based on existing scientific information collected from various institutions conducting proper Arctic research. Some assessments go under peer review and follow strict scientific procedures, others are written by highly ranked

3. http://www.nefco.org/financing/arctic_council_project_support_instrument

4. Secretariats of the Arctic Council's WGs are located respectively: AMAP – Norway, CAFF and PAME – Iceland, and SDWG – Canada. The ACAP and EPPR have had temporary secretariats but soon there will be a person appointed in the ACS (as Working Group Coordinator) to support these WGs in their functions.

specialists but with no further revision. The assessments' chapters are written by scientific 'lead authors' in collaboration with researchers representing at a minimum three Arctic countries. Key scientists who may be coming from non-Arctic states are invited to participate along with indigenous peoples' representatives, and the progress must be reported to SAOs throughout the entire project duration (Kankaanpää 2012a). Whereas earlier AMAP has been tasked with a large number of Arctic Council projects and was the most productive WG, over time other groups have launched their own major assessments. Even though mandates of the Working Groups are formulated in different manners and mostly vary with regard to their spatial coverage or focus of their attention, there are certain potentially overlapping areas concerning the scope or themes of the WGs' activities, like the focus on human health between the SDWG and AMAP. With increasing recognition of the complexities of and interlinkages between humans and ecosystems in the Arctic, there is a growing need not only for including more disciplines in Arctic research, but also for closer cooperation and better communication between the Working Groups (Nilsson, 2012) which would result in projects managed by more than one Working Group or building on the outcomes of the work conducted in other WGs. There have been suggestions on restructuring the work of the Arctic Council, whereby, for instance, the SDWG could become a mechanism for strengthening the AC in the field of sustainable development. In order to accomplish this goal it would, rather than dealing with a bunch of largely unrelated projects, manage interactions across different sectors, facilitate the participation and dialogues with representatives of various interest and knowledge groups, and ensure that ecosystem-based management and environmental impact assessment principles are applied in all AC activities (Kankaanpää & Young 2012).

The Arctic Council has been a central element in the emerging governance system in the Arctic based on soft-law and political cooperation. Yet, as apparent with the increasing number of political statements of both Arctic and non-Arctic actors, media coverage and growing investments in exploitation of natural resources, the Arctic is no longer a 'frozen desert' in the realm of international relations as it was at the time of the inception of its predecessor, the Arctic Environmental Protection Strategy, in the early 1990s. As a result of globalization and consequences of climate change, it has moved closer to the centre of global political and commercial interests. These developments put pressure on the AC and raise questions about its future profile and structure as to be able to meet challenges stemming from the heightened connectivity between the Arctic and the global system. Among other issues remain a way of meaningful engagement and constructive participation of Observers who have both legitimate interests in the Arctic and significant capacities to address many of

Arctic issues. Also important is the negotiation of two legally binding agreements initiated and negotiated under the auspices of the AC, namely the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic from 2011, and the Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic from 2013.

Irrespective of other important developments in the Council, it is still the scientific assessments that have, for already over the two decades, been the core activity of the Council and the Rovaniemi Process⁵, and have played a key role in raising the AC's profile within and beyond the region. They have been instrumental in identifying Arctic pollution problems, influential in international environmental policy-making processes (Reiersen, Wilson, & Kimstack 2003) and paved the way for recognition of the Arctic as a distinct region in the international political consciousness (Nilsson 2012). Finally, they have been regarded as the most effective products of the Arctic Council (Kankaanpää & Young 2012). As such they are also likely to be highly important in shaping of the region's future.

VII.2 THE ARCTIC COUNCIL'S ROLE IN KNOWLEDGE PRODUCTION AND POLICY SHAPING

The Arctic Council is the only international body to offer a platform for multilevel and cross-sectoral cooperation in the Arctic. It provides a mechanism for integrating multiple ways of producing information and knowledge for governmental and scientific assessments, as well as for various other interest groups. The AC has produced a wealth of science-based information in various formats. Among others, its output encompasses assessment and overview reports, brochures, guidelines and political recommendations, but also contact networks, capacity building and acting as an 'Arctic voice' in national and global arenas (Kankaanpää, 2012a). In the large survey conducted during autumn 2010 and winter 2011 among participants of the AC and WGs meetings, respondents almost unanimously regarded scientific assessments as the most effective products of the AC, followed by the AC's overview assessments, popular reports and environmental monitoring efforts. Furthermore, more than half of respondents to the questionnaire listed the Arctic Climate Impact Assessment (ACIA) at the top of the Council's products that have made a difference in enhancing sustainable development and environmental protection (Kankaanpää & Young 2012). From the mid-2000s onwards, as the impacts of climate change in the region started to become obvious, the focus on the Arctic grew along with the increasing demand for natural and energy resources from developing countries. In

5. The implementation of the Arctic Environmental Protection Strategy got to be known under the name of the Rovaniemi Process, from the name of the city in which the process was launched in 1991.

response to this interest the Arctic Council followed the global trend in carrying out environmental assessments and launched several processes (e.g. AHDR, ACIA, AMSA) whose results, once published, contributed to changing the image of the “frozen desert” to the one of the “Arctic in change”. Not only did especially ACIA turn the attention to the profound consequences of climate change for the Arctic and its indigenous peoples, but it also coined the view of a region undergoing a thorough transformation process and started to influence the perceptions of the Arctic among the AC actors themselves, even before the report was released in 2004 (Koivurova 2009).

Further examples of influential Arctic assessments include works of AMAP on the monitoring of persistent organic pollutants (POPs) and their contribution to negotiations of POPs protocol to the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution (LRTAP), and consequently the Stockholm Convention on Persistent Organic Pollutants signed in 2001 (Downie & Fenge 2003; Nilsson 2012).

The Arctic Council has been widely acclaimed for its achievements in terms of knowledge generation, identification of emerging issues, framing them for further consideration and setting the policy-agenda. It would not have accomplished that without providing a stable, long-term platform for the interaction of science and policy among representatives of governments, indigenous peoples and scientists. It has been shown that science, technology and knowledge can make substantial, or indeed essential, contributions to sustainability across a wide range of places and problems if, as it was described in the first part of this report, the information contained in the assessment is perceived by its users as salient, credible and legitimate (William, 2007; Cash et al. 2003 in: Kankaanpää, 2012a).

Still, policy and science vary greatly in their norms and expectations as to what constitutes persuasive argument, trustworthy evidence, procedural fairness or adequate treatment of uncertainty. In consequence, both domains have difficulties in effectively communicating with one another (Cash et al. 2003). It is through interactions among groups of people and organizations concerned with a given policy issue that shared understandings of a problem may be produced, its definitions agreed on and actions to be taken approved. Collective efforts to gather information reduce suspicion that some interest groups or states manipulate and take advantage of the produced information – or at least attempt to. Policies, thus, develop out of on-going interactions between different stakeholders (Mitchell et al. 2006, Sabatier, 1988; Jenkins and Smith, 1999 in: Mitchell, Clark, Cash, & Dickson, 2006) and this is also the case for the Arctic Council. It has been exactly through the production of its scientific assessments that the AC enhanced its role in bridging the gap between science and policy and

strengthened its profile in the circumpolar cooperation. In the survey mentioned earlier, dialogue among different knowledge groups within the Council was pointed to by respondents as the most important factor contributing to the effectiveness of the AC, followed by the specific importance of participation of indigenous peoples’ organizations as Permanent Participants (Kankaanpää & Young 2012).

The involvement of indigenous peoples and the inclusion of their traditional ecological knowledge (TEK) seem particularly important in light of the argument that combining different knowledge systems may be a key component of creating systems of adaptive governance (Nilsson 2007). Studies have found that local knowledge is often more accurate or complete, even by conventional scientific standards, than the knowledge imported by experts and both can be complimentary to each other in numerous ways. TEK refers to the knowledge base acquired by indigenous and local people over hundreds of years through their direct contact with the environment, observation of the land, or spiritual teachings, and which has been handed down from one generation to another (Inglis, 1993; Northwest Territories, 2005 in: Kankaanpää, 2012a). For example TEK was regarded as vital in forming a more comprehensive picture of the status and trends of Arctic biodiversity (CAFF 2004) and was actively sought out and incorporated into the Arctic Biodiversity Assessment (ABA) report (CAFF 2013). Of course, major cultural differences contribute to problems in connecting science, knowledge, society and policy and sometimes even when scientists try to reach out for local knowledge, they may lack important skills crucial for success, like the willingness to engage the ‘other’ in a respectful manner over long periods of time (McNie, 2007; Song and M’Gonigle, 2001 in: McNie, 2007). Furthermore, as research on knowledge structures of the Arctic Council has shown, the involvement of indigenous peoples may vary significantly not only between different projects, but also within their parts as exemplified with the Arctic Climate Impact Assessment where indigenous engagement was low apart from the chapter dedicated explicitly to indigenous issues and which, nevertheless, did not reflect the actual distribution of the indigenous population around the Arctic, as it clearly under-represented the overall populations of Greenland and Russia (Kankaanpää 2012b).

An important feature of the Arctic Council is that next to collection of scientific knowledge it also develops recommendations on means of improving the AC capacity as well as adaptation strategies for governments of the Arctic countries faced with the challenges of rapid change. In general, science-policy dialogues in the Arctic Council aim at achieving the credibility of science while simultaneously guaranteeing the relevance and legitimacy of national policies and indigenous peoples’ perspectives when the policy recommendations and

conclusions of reports are developed for approval of the ministers. Not surprisingly, representatives of Arctic state governments are the primary actors in the AC's decision-making meetings, while the science sector⁶ is the most prevalent group in production of reports such as the ACIA or other assessments' results.

Yet, whereas the interplay of government officials, scientists and indigenous representatives is nearly routine in works of the Arctic Council, the up-to-now involvement of local and regional administrations and the private sector in AC activities has been marginal, with potential hampering consequences on influence and effectiveness of the Council as a whole (Kankaanpää 2012b).⁷ Presently, the Arctic Council is addressing the question of its cooperation with the business sector⁸ and its Circumpolar Business Forum Task Force⁹ is debating the scope and mandate of the body which will come under the heading of the Arctic Economic Council (AEC). Still, the lack of formal representation and the actual participation of regions unavoidably hinders the effectiveness and influence of the Arctic Council as implementation of AC recommendations depends to a large extent on communication with local and regional officials as well as with national officials, and eventually on their decisions. Among other factors limiting the effectiveness of the AC activities have been lack of reliable source of funding and no follow up on the implementation of recommendations flowing from assessments and on the use of AC products (Kankaanpää & Young 2012).

Finally, the involvement of non-Arctic states in works of the Arctic Council presents at best a mixed record up to now. With the great attention paid to results of the Ministerial Meeting in Kiruna, Sweden in May 2013 and inclusion of new observers to the Council, among them China, India, Italy, Japan, South Korea, and Singapore, there are expectations that the AC will now further address the issue of effective involvement of observers in its works on relevant matters. Were the non-Arctic states not integrated into structures of the Arctic Council, the influence of the AC could be significantly decreased in the global arena. On the contrary, if the Council managed to develop the effective mechanism for engaging non-Arctic actors, it could become an increasingly relevant body in Arctic affairs and beyond (Kankaanpää & Young 2012). At the same time the AC needs to avoid a risk that inclusion of an increasing number of actors

would undermine in practice the unique position and involvement of Permanent Participants.

The current interest in the Arctic and the debate on its governance is, inter alia, the result of AC scientific assessments stressing the region's rapid and profound transformation. The Arctic Council's assessments have coined and are further consolidating the perception of the 'Arctic in change', which has consequently led actors from and beyond the region to actively redraw and adapt their Arctic policy in the face of potential regime change (Koivurova 2009). Even though the Arctic Council has been designed as a soft-law body to facilitate consultation and promote cooperation, its assessments contributed to and have proved to have had important influence on some international treaties (Downie & Fenge 2003; Nilsson 2012; Reiersen et al. 2003) and the AC has achieved clear success in identifying emerging issues, framing them for consideration in policy venues and raising their visibility on the policy agendas (Kankaanpää & Young 2012). Yet, under conditions arising in the Arctic today, the future effectiveness of the AC is far from certain unless the forum addresses its flaws and weak points, like more constructive engagement of non-Arctic actors and closer collaboration with local and regional officials and representatives which could be undertaken, inter alia, within the scope of assessment activities. How the Arctic Council addresses these and other factors able to foster or inhibit the impact of its assessments is the point of the next section.

6. Science representatives participate in Arctic Council activities in three ways: at the organizational level as Arctic Council observers, within national delegations, and as individual experts to projects (Kankaanpää 2012a).

7. As research has shown also humanities and technological and engineering sciences have been seriously underrepresented in assessment processes dominated mostly by environmental specializations (Kankaanpää 2012b).

8. The series of events on Corporate Social Responsibility and Sustainable Business was organized already under the Swedish Chairmanship, in collaboration with the Arctic Council's SDWG.

9. The Task Force is chaired by Canada, with Iceland, Finland and Russia as co-leads.





Chapter cover image: Reindeers.
Photo: GettyImages

VIII. ANALYTICAL FRAMEWORK FOR EVALUATION OF THE AC'S ASSESSMENTS

VIII.1 EVALUATING THE ASSESSMENTS' INFLUENCE

As outlined in the first part of the report, influence of the assessment refers to its ability to lead state and other actors to adopt policies and behaviours different to the ones they would undertake if no assessment was conducted (Clark et al. 2006). However, at best only sometimes assessments lead to discernible changes of policy-makers' behaviours, and even less often the assessment factor can be easily distinguished from others that also affect the policy domain. Therefore, rather than focusing on strict policy outcomes such as legislative instruments, government's authoritative decisions or other regulatory tools, studies of assessments' influence stress the need to examine the entire issue domains encompassing different actors involved, their interests and ideas, institutions within which they operate, and how they evolve over time. Actors respond to assessments in ways that reflect their concerns, values, stakes and policy preferences, which frequently makes the acceptance of assessment dependent to a large extent on non-scientific and not explicitly related to assessment political, social and economic factors (Mitchell, Clark, & Cash 2006). The complex interplay between all these elements often makes causal influence indirect and requires a longer time perspective to become evident. Moreover, development of policy responses is a result of on-going interactions between various groups of people and organizations, and in that puzzle, scientific information is just one element among many other forces. Therefore, evaluation of the effectiveness of assessment cannot be reduced simply to the report itself and the information it contains because the influence of this information does not depend on 'getting the science right' (Mitchell, Clark, Cash, et al. 2006). Finally, it is difficult to assess the immediate impact of assessment works of the Arctic Council as often issues covered by assessments 'exhibit long periods of relative stability punctuated by shorter episodes of rapid change' (Baumgartner and Jones 1993 in: Mitchell, Clark, & Cash, 2006: 312) and 'new ideas must often "incubate" for a decade or more before they have much influence on behaviour' (Weiss 1975; Sabatier 1993 in: Mitchell, Clark, & Cash, 2006: 312).

In light of the above argumentation, the authors of this report are not aiming at an evaluation of influence of most recent assessment activities of the Arctic Council as these are highly compound processes with many actors of different character and levels involved, and deal with matters of great complexity. In addition, many of them are still on-going, with some even in their initial phases. Instead, the authors propose a set of indicators developed with a particular focus on the Arctic region

and assessments carried out under the auspices of the Arctic Council, to provide a reader with tools for a deepened understanding and analysis of the potential influence of the AC assessment projects. The selected features should enable us to examine the process of the given assessment in order to evaluate whether it contains elements likely to foster its impact and effectiveness.

VIII.2 INDICATORS PARTICULARLY RELEVANT TO THE ARCTIC

Building on the above-described academic work and literature review, six elements were identified as particularly relevant to the potential influence of the AC assessments:

1. Ownership of the process
2. Level of fit and time congruence
3. Identification of the target audience
4. Methodology
5. Stakeholder participation/ engagement
6. Follow-up activities

To assess each of the above factors the authors defined a list of auxiliary questions on which basis they attempted to examine the potential impact of AMSA, ABA and other AC assessments. The ownership of the process refers, inter alia, to legitimacy and salience of the project. It allows investigation of whether the assessment came from the broad consensus of all the Arctic states and Permanent Participants, or if it was perhaps more an initiative of a narrower group that defined goals of the process, which can consequently impact the effectiveness of the whole activity. This indicator thus includes the participation in the process of stakeholders internal to the assessment (policy-makers who sponsor the assessment and experts conducting the work). To address the question of the ownership of the process in the Arctic Council context, the authors looked at: Who are the leaders of the process? Who is the chair? Who are the authors and contributors to the assessment? Which WG or body is a head of the process? Is there any leading individual (which background/ institutional affiliation he or she has)? Does the project span across different WGs or bodies? If yes, which ones? What is the timeframe of the project (does it exceed a single AC chairmanship)? When possible, where did the idea for the assessment come from?

The level of fit and time congruence looks at whether the assessment seeks to be salient to its users by including the information responsive to local and regional conditions and specificities (so not only adopting the circumpolar perspective), focusing on issues over which the decision-

makers have control, and taking into account the time factor, so correspondence with other policy-making processes or larger developments in the issue domain (like works on new international arrangements or a review of already existing ones). To answer this point in the AC context one can ask, among others, whether any chapters or parts of the project take into account the local and regional level (e.g. differences between North American and Eurasian parts of the Arctic), if assessment was designed with a bigger (e.g. international) policy-making or assessment process in mind, and whether its recommendations are targeted only to the ministers or also to decision-makers of other stages, and if they point to issues over which the target group has control.

The next point of target audience is closely linked to communication and outreach strategies. Whereas in the case of most Arctic Council assessments their target group are ministers attending the Ministerial Meeting and approving their final reports, many projects seek to also address broader audiences. As such they widen their communication strategies, attempt to diversify its products (e.g. by publication of summaries for policy-makers, synthesis of scientific reports, production of documentary films, public presentations and release of materials in different languages) and present their findings in forms attractive to media. To understand the potential scope of assessments' impact and its resonance with Arctic communities and broader international society, it is worth looking at the techniques used and reflect on it, particularly if we take into account the great experience of the Arctic Council in 'learning by doing' of various assessments and the fact that the AC is considered a cognitive forerunner (Nilsson 2012).

The element of methodology is related to assessment's scientific credibility and legitimacy in the eyes of its users. It comes from answers to, *inter alia*, following questions: What is the geographical scope of the assessment? What are the sources of information and how was it accessed or obtained? Does the assessment or its summary describe treatment of uncertainty? Is TEK mentioned in the methodology of the assessment? Is the assessment based on any new concepts or rather well-established models and standards? Does it follow a more disciplinary approach or seek to promote an integrated one? In the case of continuous assessments, is the methodology the same as before? Does assessment provide information on how consensus on contentious points was established? Was there a review of the assessment product? Often, giving answers to all these interrogations is not possible. Nevertheless, it is worth to keep them in mind when investigating the Arctic Council assessments and searching for the foundation of their potential impact.

As such, one of the most relevant elements comes next, namely stakeholder participation, which in the literature has been described as one of the most significant factors

affecting the effectiveness of assessment. Involvement of stakeholders in the process allows not only for incorporation of their knowledge and expertise (often very precise and context-specific) in the process, but also leads them out of the role of mere objects of the given impact.

It is also true in the context of the Arctic Council, in particular with its innovative and unique form of inclusion of representatives of indigenous peoples' organization as Permanent Participants to all, AC works and activities, as well as the close interaction between administration and science within the Council. There are also regional and local decision-makers, non-indigenous inhabitants of the Arctic, civil society organizations and representatives of business and the private sector. The definition of a stakeholder depends to a large extent on the assessment domain and focus. However, it should be remembered that involvement of representatives of certain groups or organizations (like in case of Permanent Participants) is often the minimum option and it is not necessarily synonymous with the engagement of indigenous peoples' or whole communities in the stakeholders' consultations. This indicator therefore focuses primarily on stakeholders external to the assessment (from outside of the Arctic Council decision-makers or involved experts), although distinction between internal and external stakeholders is often difficult. In light of the above arguments the subsequent questions could be raised with regard to AC assessments: Were there stakeholder consultations organized at all in the process? If yes, how were they organized and how were the results documented? Who was identified as a stakeholder (and e.g. invited to the consultations)? Were other interactions with policy-makers and representatives of civil society and communities organized in the process? If yes, in which form? Eventually, were representatives of indigenous peoples involved in the assessment process, and if yes, how?

The last relevant feature concerns proposed and implemented follow-up activities. Quite often it is the element that does not get sufficient attention in the assessment design due to, for example, lack of proper funding or difficulties in keeping people involved in the process upon completion of the final report. Still, without an adequate follow-up the assessment's impact may be severely inhibited and as such deserves to be addressed. To this end one should ask: Is the assessment a concrete part of a regular or semi-regular process? Are any follow-up activities planned? Even more importantly, is there a follow-up on the implementation of assessment's recommendations? Finally, is there any follow-up on the use of assessment's reports to ensure they are distributed in a decent manner and reach the targeted groups and audiences?

The following section presents an analysis according

to the six above-listed indicators of five of the recent assessment activities of the Arctic Council: Arctic Marine Shipping Assessment (AMSA), Arctic Biodiversity Assessment (ABA), Arctic Resilience Report (ARR), Arctic Human Development Report II (ADHR-II), and Adaptation Actions for a Changing Arctic (AACA). The assessments have been selected to present a wide spectrum of the Arctic Council's activities and topics taken up in the Council's work. Moreover, each of the analysed assessments was or has been conducted under different AC Working Groups (or outside of the WG structures - in case of the ARR). The chosen assessments represent a broad variety of key concepts used, different methodological approaches and various aims. For example, while AMSA is a sectoral assessment with elements of a broad impact assessment, AHDR-II constitutes an overview of human development similar to the work conducted by the UN Development Programme, the AACA focuses on the adaptation, and the ARR adopts a resilience lens to provide an outline of Arctic realities.

The sources for this analysis are mostly comprised of the project's products, like final or interim reports (when available), documents from meetings of Senior Arctic Officials and respective AC Working Groups, progress reports, projects' websites and all other official publicity material available. As a result, the presented study should not only provide the reader with information on the assessment itself but also point to its potential strengths and weaknesses in exerting influence in further policy-making process.





Chapter cover image: Geothermal Power Station.
Photo: GettyImages

IX. THE ARCTIC COUNCIL ASSESSMENTS

IX.1 ARCTIC MARINE SHIPPING ASSESSMENT (AMSA)¹

AMSA Overview of the assessment

The Arctic Marine Shipping Assessment (AMSA), in line with the general mandate of the Arctic Council, addressed marine safety and environmental protection in relation to shipping activities in the Arctic and its scope included primarily ships, their infrastructure needs and environmental impacts of shipping in the Arctic Ocean. The assessment studied shipping volumes for various sectors (for a chosen year - 2004) and provided an overview of possible future developments. The assessment covered a broad array of shipping activities (not only commercial transport, but also fishing, research or icebreaking).

The assessment was one of the strategic actions identified in the AC Arctic Marine Strategic Plan (AMSP, endorsed at the 2004 Reykjavik Ministerial Meeting) and built on the Key Finding 6 of the Arctic Climate Impact Assessment (2004) that: “reduced sea ice is very likely to increase marine transport and access to resources”.

AMSA has been chosen as an example of Arctic Council assessment activities as it represents a type of sectoral assessment (and regional impact assessment for the whole sector) within the Council’s work and as a part of the on-going work of the Arctic Council on Arctic marine environment, but also due to the unique (and on-going) process of monitoring implementation of its recommendations.

AMSA Ownership of the process

The Arctic Marine Shipping Assessment was conducted under the Protection of the Arctic Marine Environment Working Group (PAME) with leadership from Canada, Finland and the United States (with respectively Victor Santos-Pedro, Kimmo Juurmaa and Lawson Brigham serving as country representatives). Ben Ellis (at the time Managing Director of the Institute of the North) and Lawson Brigham (University of Alaska Fairbanks, with an educational background from the US Coast Guard Academy, the US Naval War College and the University of Cambridge) were report co-editors. Lawson Brigham played a key role in defining the scope and direction of work. Through Kimmo Juurmaa, AMSA built on the EU-funded (Fifth Framework Programme) ARCOP project and was connected to the shipyard company Kvaerner Masa Yards Technology.

Within the Arctic Council, the assessment was linked with experts from Emergency Prevention, Preparedness and Response WG (regarding issues related to spills and response infrastructure needs) and with the Sustainable Development Working Group (regarding AMSA’s human dimension).

As a part of the Arctic Council’s efforts, AMSA enjoyed a pan-Arctic ownership. The project was launched at Reykjavik Ministerial Meeting (2004) and spanned across Russian and Norwegian chairmanship periods.

However, the involvement of Russian partners in the project was comparatively weak, even though the Northern Sea Route and the Barents/Kara Seas were taken up as cases for sub-regional assessment. Numerous Russian contributors were involved in the process, but no Russian scholar was among the lead authors of the assessment, none (of 14) of the town hall meetings and only one out of 13 AMSA workshops took place in Russia (and focused on the Northern Sea Route specifically). Neither did Russian participants take part in the first meeting of the assessment team. Based on PAME meeting reports, it is clear however that the leads made significant efforts to engage Russian experts. Eventually, Russia offered to assist in the preparations of several report chapters.

Interestingly, the assessment, apart from funding from the Canadian, Finnish, Norwegian and US governments, as well as from the Institute of the North, also received funding from the private funder: BP shipping.

1. Material retrieved from: Arctic Marine Shipping Assessment 2009 Report. Arctic Council, April 2009; Status on Implementation of the AMSA 2009 Report Recommendations, Arctic Council, PAME, May 2011; Status on Implementation of the AMSA 2009 Report Recommendations, Arctic Council, PAME, May 2013; Arctic Ocean Review. Report. Phase II 2011-2013. Kiruna, May 2013; Protection of Arctic Marine Environment; AMAP/CAFF/SDWG. Identification of Arctic marine areas of heightened ecological and cultural significance. Arctic Marine Shipping Assessment IIC. 2013; Arctic Council Reykjavik Declaration 2004; Arctic Council Tromsø Declaration 2009; SAO Meeting reports (including minutes): Selfoss, Iceland. May 2004; Reykjavik, Iceland. November 2004; Svolvær, Norway. April 2008; Kautokeino, Norway. November 2008; Copenhagen, Denmark. February 2009; PAME Meeting Reports: 22-23 February 2005, Copenhagen, Denmark; 19-20 September 2005, Aalborg, Denmark; 1-3 March 2006, Oslo, Norway; 29-30 August 2006, Murmansk, Russia; 6-7 March 2007, Copenhagen, Denmark; 26-27 September 2007, Reykjavik, Iceland; 2008, 31 May -4 June, St. John’s, Newfoundland, Canada; Presentation by Lawson Brigham on AMSA scenario-building methodology and experience, Brussels, April 2010; Piotr Graczyk, “The role and potential of the Arctic Council in Arctic marine shipping governance,” Arctic Frontiers, 24 January 2013, Tromsø, Norway; Piotr Graczyk (2014). “Institutional interplay in Arctic shipping governance: role of the Arctic Council in the development of the IMO’s Polar Code” Presentation at the Arctic Frontiers Conference “Humans in the Arctic”, 22 January 2014, University of Tromsø. Arctic Council website at www.arctic-council.org, Protection of Arctic Marine Environment working group website at www.pame.is.

AMSA Level of fit / time congruence

The Assessment Team, from the beginning of its work sought interaction with international processes (especially within the International Maritime Organization – IMO – in regard to development of Guidelines for Ships Operating in Ice-covered waters, adopted as bi-polar in 2009, later Polar Code). Although to a lesser extent than originally intended (based on early PAME meetings), the IMO has been involved in the assessment.

Within the work of the Arctic Council, AMSA constituted an integral part of planned assessment work within PAME: AMSA was preceded by AMSP and followed by the Arctic Ocean Review (which was also one of strategic actions within AMSP).

AMSA recommendations are directed exclusively to the Arctic states, although refer to their activities within global forums and are relevant for various ministries and state agencies, not only those directly involved in the work of the Arctic Council.

AMSA, even though it aimed at pan-Arctic assessment, focused part of its analysis on a sub-regional level and have taken account of the diversity of Arctic sub-regions. The 2020 future of shipping was discussed for three distinctive areas: the Bering Strait region, the Canadian Arctic and Northwest Passage, and the Northern Sea Route and adjacent areas. The examination of environmental impacts was conducted as a series of case studies, examining specific impacts in the Aleutian Islands (Great Circle Route), the Barents and Kara Seas, the Bering Strait, and the Canadian Arctic. Specific case studies, highlighting social diversity in the Arctic, were additionally taken up in the section on human dimensions.

AMSA Identification of the target audience

The AMSA report stated that the authors have a much broader audience in mind than the Arctic Council or Arctic states' governments: "the AMSA 2009 Report is designed to educate and inform the Arctic Council, the Arctic community, the global maritime industry and the world at large about the current state of Arctic marine use and future challenges" (Arctic Marine Shipping Assessment 2009 Report: 14).

Consequently, the report (containing a concise executive summary with recommendations) was given a visually rich and attractive layout. However, the report lacked the intense, multilingual dissemination via various forms and channels characteristic of ACIA (which can be seen here as a template for the Arctic Council in terms of quality and breadth of dissemination strategy). A major disadvantage of AMSA is the lack of translation into Russian. Only some AMSA documents were translated into Russian, namely brochures on the AMSA process (in French and Inuktitut, too), the 2006 progress report and overview of scenarios, partly because some of these materials were used during the AMSA workshops.

AMSA Methodology

The geographical scope of the assessment was defined as the Arctic Ocean and adjacent seas (incl. e.g., the Aleutian Islands) in general following the definition from PAME Offshore Oil and Gas Guidelines (although that is not stated clearly in the final report).

The methodology was founded on collecting data on shipping activity in the region, which allows for assessment of environmental impacts. That has been done through the Ministries of Foreign Affairs of the Arctic States, which guaranteed their credibility. However, no specific comprehensive methodological framework (similar to, for example, DPSIR) has been followed.

Within the Marine Activity Database, the data for a single year (2004) has been collected (which proved to be fairly challenging) from Arctic states based on a specially designed questionnaire. In addition, data on accidents (from Member States) and ice conditions (based on earth observation) were assembled. In order to understand local and indigenous marine use, the AMSA team conducted a series of town hall meetings.

Scenario development constituted one of the main pillars of the assessment. It was based on the participatory workshop method in order to arrive at the key drivers of Arctic shipping.

AMSA Stakeholder participation and engagement

The AMSA assessment team attempted to reach out to stakeholders relevant for Arctic shipping (including those from outside of the Arctic region), like the Arctic Council observer states' governments, shipping companies, ship designers, shipbuilders, classification societies, insurers, environmental NGOs as well as local, including indigenous, actors. A number of workshops (inter alia, a stakeholder-based scenario-building workshop) and town hall meetings were organized in order to facilitate engagement and input from stakeholders. Apart from general discussions within PAME, where permanent participants influenced the planning of work on the assessment, the indigenous participation focused on the human dimension chapter. Funding of indigenous participation was an on-going challenge throughout the process, as is often the case within Arctic Council's work.

However, apart from a general summary of town hall meetings specifically regarding the human dimension of shipping, the final AMSA report includes only limited information on the kind of input that was received and how the stakeholder involvement influenced the assessment – a characteristic of a participatory assessment that is important for sustained dialogue with stakeholders.

AMSA Follow-up activities

The Arctic Council established a follow-up mechanism for implementation of AMSA recommendations, with monitoring of implementation becoming an on-going part of the PAME agenda. The implementation reports that followed publication of AMSA (2011, 2013) provide an overview of progress at national (Arctic states), regional (Arctic Council structures) and international (primarily, but not exclusively, IMO) levels.

Apart from following-up of the recommendations of AMSA, the Arctic Council and especially PAME continued the line of assessment work of which AMSA was an element. In 2009, Arctic Ocean Review (AOR) was commenced, which: analysed status and trends in the Arctic marine environment, global and regional conservation and sustainable use measures in place, and provided advice on how management of the Arctic marine environment can be strengthened. Especially in the work on marine operations and shipping, the AOR was built on AMSA findings. One of AOR's recommendations was in support of completion and implementation of the Polar Code, thus following earlier recommendation by AMSA. As the part of the AMSA follow-up (and a result of the AMSA recommendation), the Arctic Indigenous Marine Use Survey (implemented by Saami Council and Aleut International Association) has been commenced, as well as work on the use of heavy fuels in Arctic waters. Another follow-up activity was the 'Identification of Arctic marine areas of heightened ecological and cultural significance' with a report produced jointly by AMAP, CAFF and SDWG.

AMSA Influence potential

The Arctic Marine Shipping Assessment stands out among Arctic Council activities as being considered one of the most influential in regard to policy-making. It benefited greatly from the time congruence with increased interest in Arctic issues, Arctic shipping and resource opportunities in particular, but its effectiveness stemmed as well from:

- the comprehensive scope of the assessment, and the clear and straightforward methodology;
- the established relatively efficient (and unique) follow-up mechanism,
- alignment/time congruence with the IMO "Polar Code process" and national developments regarding regulations and investments.

Stakeholder outreach is a main element in making AMSA influential as many political, legal and economic developments driving, conditioning or regulating Arctic shipping take place outside the Arctic or within international venues.

AMSA recommendations were formulated after intensive discussion within the Arctic Council. Some of

the recommendations have indeed been implemented, although in light of multiple processes occurring at the same time (and AMSA recommendations being a result of these processes), pinpointing a clear link between AMSA recommendations and actual decisions is difficult. Key examples of AMSA recommendations that have been implemented include: Search and Rescue Agreement (2011) and Oil Spills Preparedness and Response Agreement (2013) negotiated under the auspices of the Arctic Council, and on-going work in the IMO on making the Polar Code mandatory (including personal overlaps between IMO committees and PAME). Arctic states have made visible progress in addressing infrastructure deficit and they have worked on improving production of and access to hydrographic, meteorological and oceanographic data. Some Arctic Council members ratified the Ballast Water Management Convention, which is one of AMSA recommendations. PAME has conducted an exploratory work regarding designating sensitive areas in the high sea area of the Arctic Ocean, with possible IMO's Particularly Sensitive Sea Areas in mind. IMO has also expanded its activities regarding ice and snow conditions, but influence of AMSA or the work conducted in PAME and EPPR is presently highly unclear.

In general, it is difficult to judge the actual role of AMSA in triggering certain developments, especially those occurring outside of the Arctic Council structures (such as the BWM Convention). In the case of actions within the Arctic Council, the connection between states' actions and AMSA recommendations is more visible, although it can be said that AMSA recommendations played some part in facilitating the decisions, rather than being their main trigger.

Relatively limited involvement of Russian partners and outreach to Russian stakeholders adversely affects the influence potential of AMSA on Russian national policy-making, which is a major shortcoming considering the importance of the Northern Sea Route and Russian shipping in the context of Arctic maritime transport.



IX.2 ARCTIC BIODIVERSITY ASSESSMENT (ABA)²

ABA Overview of the assessment

The Arctic Biodiversity Assessment (ABA) was developed in order to synthesize and assess the status and trends of biological diversity in the Arctic. The need for such an assessment had been discussed for a long time within CAFF, and finally it was launched with the proposal of the AC 'Focal Point for ACIA Follow-on Activities' which in its presentation to SAOs in April 2006 recommended the conduct of ABA to support Key Findings of ACIA, particularly ones with a high likelihood of shifting Arctic vegetation zones and changes in Arctic animal species' ranges, distribution and diversity. In response to calls from ACIA for an expansion and enhancement of the Arctic biodiversity monitoring, the Conservation of Arctic Flora and Fauna (CAFF) Working Group established the Circumpolar Biodiversity Monitoring Program (CBMP) and followed with ABA whose goal was to create a baseline on Arctic biodiversity for use in future regional and global assessments, and inform and guide future works of the Arctic Council.

To this end ABA aimed to provide up-to-date knowledge collected from scientific publications and combined with insights from traditional ecological knowledge, identify the existing gaps in the data record, describe key mechanisms driving changes in the region, and present science-based suggestions for action on addressing major pressures on Arctic biodiversity.

Here, the ABA was selected as an example of the most recent, scientific assessment of the Arctic Council and the major one ever carried by the CAFF Working Group.

2. Material retrieved from: CAFF 2013. Arctic Biodiversity Assessment. Status and trends in Arctic biodiversity. Conservation of Arctic Flora and Fauna, Akureyri, Iceland; Conservation of Arctic Flora and Fauna (CAFF). 2013. Arctic Biodiversity Assessment. Status and trends in Arctic biodiversity: Synthesis.; Conservation of Arctic Flora and Fauna (CAFF). 2013. Arctic Biodiversity Assessment: Report for Policy Makers. CAFF, Akureyri, Iceland; CAFF 2010. Arctic Biodiversity Trends 2010 – Selected indicators of change. CAFF International Secretariat, Akureyri, Iceland; Status Report Prepared by the Arctic Council "Focal Point for ACIA Follow-on Activities" for Presentation to Arctic Council Senior Arctic Officials April 26, 2006; CAFF. The Arctic Biodiversity Assessment. Work Plan and Financial Strategy. Narvik, Norway, November 2007; CAFF Progress Reports to SAOs meetings: Tromsø, Norway, April 2007; Narvik, Norway, November 2007; Kautokeino, Norway, November 2008; Copenhagen, Denmark, November 2009; Illulissat, Greenland, April 2010; Tórshavn, The Faroe Islands, October 2010; Luleå, Sweden, November 2011; Stockholm, Sweden, March 2012; Haparanda, Sweden, November 2012; CAFF Memorandum to Senior Arctic Officials, ABA Implementation: Approach and Early Implementation. Process, Timeline, Milestones and Products. September 2013; SAO Meeting reports: Narvik, Norway, November 2007; Svolvær, Norway, April 2008; Kautokeino, Norway, November 2008; Copenhagen, Denmark, November 2009; Illulissat, Greenland, April 2010; Tórshavn, Faroe Islands, October 2010; Copenhagen, Denmark, March 2011; Luleå, Sweden, November 2011; Haparanda, Sweden, November 2012; Stockholm, Sweden, March 2013; Whitehorse, Canada, October 2013; SAO Report to Ministers: Tromsø, Norway, April 2009; Nuuk, Greenland, May 2011; Kiruna, Sweden, May 2013; Documents from the AC Ministerial Meetings: Salekhard Declaration on the occasion of the tenth anniversary of the Arctic Council, Salekhard, Russia, October 2006. Kiruna Declaration, Kiruna, Sweden, May 2013. <http://www.arctic-council.org/index.php/en/document-archive>; <http://www.arcticbiodiversity.is/>; <http://www.caff.is/>

ABA Ownership of the process

The Arctic Biodiversity Assessment has been the main assessment carried out by the AC Conservation of Arctic Flora and Fauna (CAFF) Working Group, which delivered the project's final report in May 2013 at the Kiruna Ministerial Meeting. The assessment was one of the key deliverables during the Swedish chairmanship but the process began already in 2006 when the Ministerial Meeting in Salekhard, Russia endorsed the activity.

The ABA process has been led by Canada, Finland, Greenland, Sweden and the United States, with Greenland/Denmark providing the Chief Scientist (Hans Meltofte) to the process and the USA being the Vice Chair of the project's steering committee. The steering committee comprised of representatives from national governmental agencies from Arctic states, the CAFF Executive Secretary (Tom Barry), representatives of Permanent Participants, and members from UNEP/GRID-Arendal and UNEP WCMC. The chairing of the steering committee was rotating.

Overall ABA included contributions from 253 scientists from 15 Arctic and non-Arctic states. The lead authors for chapters were appointed in a manner to strike a balance between North American and Eurasian representation, and two traditional ecological knowledge (TEK) coordinators were selected in the same way to inform ABA chapters with the TEK material. The ABA has received financial support from Canada, Greenland/Denmark, Finland, Norway, Sweden, the USA and the Nordic Council of Ministers, along with in-kind support from other CAFF Countries, Permanent Participants and some Observers.

ABA Level of fit/ time congruence

The ABA process began in 2006 and lasted until 2013. Its work plan and financial strategy were approved by SAOs in November 2007. The project itself was run in three phases. Phase one was completed with the release of the report, Arctic Biodiversity Trends – 2010: selected indicators of change³ in the AC Deputy Ministers meeting in May 2010 and during the International Polar Year (IPY) conference in June 2010. Phase two encompassed development of a full scientific report on Arctic biodiversity, and phase three was devoted to formulation of policy-recommendations on the basis of collected scientific data. Both documents were eventually delivered to the eighth AC Ministerial Meeting in Kiruna, May 2013.

The ABA project also corresponded with larger processes and developments concerning the domain of biodiversity. The preliminary product of the ABA process, its 2010 report, was thought as the contribution of the Arctic Council to the United Nations 2010 Biodiversity

3. In February 2009 the Nordic Council of Ministers provided funding of 500,000 DKK to support the development of this report.

Target, to the International Biodiversity Year in 2010, to the Convention on Biological Diversity (CBD) as a tool to measure progress towards the United Nations 2010 biodiversity target, and to the CBD's third Global Biodiversity Report.

ABA Target audience

The results of the assessment and recommendations developed within ABA aim primarily at the Arctic Council, governments of its member states and Permanent Participants. As such, many of them correspond with recommendations coming from other AC projects and assessment efforts, either by reinforcing or by building upon them. Still, inclusion of ABA into global biodiversity initiatives has also ensured a wider audience to the project and its outreach beyond the Arctic Council processes. Not only the science part of the report is of great value for the academic community as a baseline for further research on Arctic biodiversity, but the number of various formats used for publication and distribution of ABA main findings can strengthen its resonance with the broader public.

All materials produced to date within ABA are available through its website (www.arcticbiodiversity.is). Whereas the ABA full scientific assessment and its synthesis are available only in English, a report for policy makers delivered with a movie on status and trends in Arctic biodiversity is accessible in English, French, Inuktitut and Russian, and a series of promotional postcards detailing ABA key findings has been designed in English, Even, Finnish, French, Icelandic, Inuktitut, Russian, Sakha and Yukagir. Furthermore, the Arctic Biodiversity Trends 2010 report was presented at the Convention on Biological Diversity COP10 in Japan in October 2010 and its summary has translations in Chinese, English, Swedish, Danish, German, Greenlandic, Icelandic, Russian and Norwegian, and the joint press release with the Convention on Biological Diversity from the IPY conference in 2010 had English, French and Spanish versions. Furthermore, particular attention has been paid to the visual presentation of collected information and resulted in a layout attractive to potential readers.

In addition, the Traditional Ecological Knowledge Compendium is still scheduled for completion within the project.

ABA Methodology

For the purpose of ABA a more detailed definition of the Arctic was developed than the one usually used by CAFF, which is defined as much by political boundaries as climatic and biological elements. Instead, the ABA followed the scope of the Circumpolar Arctic Vegetation Map and covered the entire Arctic tundra region with adjacent areas included when appropriate to ensure

the project's scientific completeness. It looked into terrestrial, marine and freshwater ecosystems and focused on status and trends in the 'non-human' natural environment, however also with the inclusion of humans as part of the ecosystems and as agents affecting them. Moreover, the importance of indigenous peoples' roles and knowledge has been recognized by the inclusion in the report of a separate chapter, Indigenous people and biodiversity in the Arctic and their insights into all chapters of the assessment.

The ABA did not commission any new research or monitoring. It drew from the most recent existing scientific information and publications, and from the traditional ecological knowledge (TEK). All the ABA chapters were approved according to scientific standards and went through comprehensive peer reviews conducted by experts in each field. The scientific uncertainty was also stressed as a key factor in, inter alia, Arctic marine biodiversity assessments underlining the significance of precautionary approach and a necessity of development of a robust set of measures against which progress or decline in reaching the biodiversity goals could be measured.

ABA Stakeholder engagement

Due to the character of the ABA, it focused primarily on various components and ecosystems within the natural environment and the role of stakeholder engagement in this process differed somewhat from other assessment activities. Nevertheless, in recognition of the essential value and special importance of the traditional ecological knowledge of indigenous peoples' in conservation of the Arctic biodiversity, two TEK coordinators were appointed and contributed to the report with statements from holders of traditional knowledge, collected often in oral form as little such information is available in a published format.

ABA Follow-up

The main report of ABA was delivered to the Kiruna Ministerial Meeting in May 2013. A timeline spanning from September 2013 to the next Arctic Council Ministerial Meeting in 2015 is envisioned for the preparation and implementation of a plan on the follow-up of ABA recommendations. So far all the on-going or planned activities conducted by other AC Working Groups and corresponding to ABA recommendations have been mapped, and a model analysis on how to identify priorities for implementation of particular recommendations has been developed and approved by SAOs during their meeting in Whitehorse, Canada in October 2013. The ABA group is also now seeking to work more with business representatives and groups outside of the biodiversity expert community, and has received a positive response to it from industry. In addition, the

advice on national and international implementation of ABA recommendations and on the development of the ABA Implementation Plan for the Arctic Council will be sought through the Arctic Biodiversity Congress to be organized in December 2014 in Norway.

Finally, focus is also being placed on the continuing development of the CAFF websites, aiming at the creation of an Arctic Biodiversity portal to allow for easier management, communication and outreach activities, but also in order to ensure continuation of the data collection, providing updates on changes in Arctic biodiversity and shortening the time gap between when information is collected and when it being presented to decision makers. To this end ABA constitutes a baseline for and feeds into the on-going Circumpolar Biodiversity Monitoring Programme.

ABA Influence potential

In their report from the meeting in Haparanda in November 2012, SAOs expressed the opinion that “ABA has the potential to become as important as the Arctic Climate Impact Assessment and might become a reference document for biodiversity in the Arctic” (SAO Meeting report, Haparanda, Sweden, November 2012: 4). Whether it will be the case, remains to be seen as the assessment builds on some of the good practices of ACIA, but on the other hand it does not elaborate on the issue so widely covered by media as climate change.

The ABA is presently going through the follow-up phase aiming at identification of priorities for implementation of the report’s particular recommendations, and seeing from the CAFF report to SAOs and envisioned activities, the works are being conducted in a vigorous and detailed manner. Such approach significantly raises the assessment’s influence potential, along with the variety of materials released in numerous formats and languages to reach the different kinds of audience. One could argue that relatively weak stakeholder engagement in the process could hinder the resonance of ABA, however the appointment of TEK coordinators and their contact with indigenous peoples, statements and contributions from traditional knowledge included in each chapter, as well as a report for policy-makers translated into many languages, including indigenous ones, may well compensate over this element.

Moreover, ABA’s scientific value, creation of a baseline for Arctic biodiversity and its input to the on-going Circumpolar Biodiversity Monitoring Programme can ensure its lasting impact, further strengthened by alignment with larger international processes, the resolution of cooperation between CAFF and the UN Convention on Biological Diversity signed in 2010 and presentation of the project’s outcomes to a broad audience in global forums.

IX.3 ARCTIC RESILIENCE REPORT (ARR)⁴

ARR Ownership and structure of the assessment

The Arctic Resilience Report is an Arctic Council project led by the Stockholm Environment Institute and the Stockholm Resilience Centre. Whereas the Project Management Team comprised of five people from both institutions is responsible for project implementation, communication and production of project reports, it is the Project Steering Committee (PSC) chaired by Johan Rockström, director of the Stockholm Resilience Centre, which oversees the project’s progress, reports on it to the AC bodies and is in charge of the national and scientific reviews of the report’s subsequent parts. The PSC includes representatives of all Arctic Council Member states, all Permanent Participants and all WGs along with representatives from collaborating organizations like the International Study of Arctic Change (ISAC), the International Arctic Science Committee (IASC), the University of the Arctic (UArctic), the European Environment Agency (EEA) and others. Furthermore, the Assessment Integration Team (AIT) whose membership has been decided by the PSC comprises the Convening Lead Authors of the project’s reports, a case study coordinator and a professional for a food security case study. The AIT is the expert-based body responsible for the content of the major outputs of the project and as such, according to the ARR Implementation Plan, should represent a wide scope of Arctic-related disciplines, pan-Arctic geographical coverage and ensure inclusion of the traditional knowledge into the project’s scope.

The Arctic Resilience Report (ARR) came as one of the priorities of the Swedish Chairmanship 2011-2013 for the Arctic Council and was initiated by the Swedish Ministry of the Environment to conduct a project on the capacity of Arctic nature and communities to manage and overcome occurring disturbances. It was discussed if it could be a part of the proposed at that time project on Arctic Change Assessment (ACA) aiming to produce an integrated impact assessment of on-going and expected changes in the Arctic.

The idea for the ARR project was firstly raised by Sweden during the SAO meeting in Copenhagen in March 2011 where it pointed out that the findings of the ‘Snow, Water, Ice, Permafrost in the Arctic’ (SWIPA) on assessment of the Arctic cryosphere should have their follow-up with

4. Material retrieved from: Arctic Council (2013). Arctic Resilience Interim Report 2013. Stockholm Environment Institute and Stockholm Resilience Centre, Stockholm; SAO Meeting reports: Copenhagen, Denmark, March 2011; Luleå, Sweden, November 2011; Haparanda, Sweden, November 2012; Stockholm, Sweden, March 2013; SAO reports to Ministers: Nuuk, Greenland, May 2011; Kiruna, Sweden, May 2013 (both SAO Meeting reports and SAO reports to Ministers available at <http://www.arctic-council.org/index.php/en/document-archive>); Arctic Resilience Report (ARR) Implementation Plan, summaries and reports from the ARR workshops, minutes from meetings of the Project Steering Committee and project’s presentations available at the ARR website: <http://www.arctic-council.org/arr/>.

the resilience report. Then, it was endorsed during the AC Ministerial Meeting in Nuuk, Greenland in May 2011 where ministers directed SAOs to review the need for integrated assessments of the multiple drivers of change in the region and to make recommendations to the next AC Deputy Ministers' meeting of a possible Arctic Change Assessment, including an Arctic resilience report. Whereas the deliberative process regarding ACA was complicated due to the extent of the planned task, and as such needed many adjustments before being finally approved in the form of Adaptation Actions for a Changing Arctic (AACA – for more see p.60), the ARR went through its scoping phase in September 2011⁵ and eventually was approved as an Arctic Council project at the Senior Arctic Official's meeting in November 2011 in Luleå, Sweden.

ARR Level of fit/ time congruence

The timeline of the project started in the second half of 2011 and will last until 2015 when the final report will be presented during the Canadian Ministerial meeting and followed by the communication activities. As such, the ARR encompasses two subsequent chairmanships of the Arctic Council: a Swedish and a Canadian one.

The project is divided into two phases. The first one (November 2011 – May 2013) focused on developing a methodological framework, identification of potential for shocks and large shifts in ecosystems services affecting human well-being in the region (Aim 1.) and analysis of interactions among different drivers of change that can influence the ability of population and ecosystems in the Arctic for adaptation or transformation (Aim 2.) It was finalized with the Arctic Resilience Interim Report presented during the Ministerial Meeting in May 2013. The presentation of the report took place both in plenary and as a side event, and got quite good media coverage being mentioned, inter alia, by New York Times and the BBC services.

The currently running second phase of the project (May 2013- May 2015) is aimed to evaluate the strategies for adaptation and transformation of Arctic socio-ecological systems (SES) in face of a rapid change. On the basis of its results, policy-relevant implications of the assessment's findings will be formulated. However, in their review of the report in March 2013, SAOs underlined the need for better communication and outreach, and enhanced collaboration with the other Working Groups of the Arctic Council. At present, the ARR is considering closer

5. Scoping activities in fall 2011 were led by the Stockholm Environment Institute and the Stockholm Resilience Centre in collaboration with the Resilience Alliance in Stockholm and were funded by a grant from the Swedish Environmental Protection Agency. According to the proposal submitted to the AC, the estimated cost for the ARR activities for 2012-2015 will be provided by Sweden to cover the project's scientific leadership and secretariat, project meetings, some workshops and communication including production of outreach material and reports. Time for participating experts and their travel expenses needs to be covered by each country and additional funding has to be obtained for regional workshops, capacity building and local activities.

integration with SDWG and particularly with AMAP in order to ensure institutional continuity of the project beyond its closing date and to enhance the resilience approach's resonance in works and on the agenda of the Arctic Council.

ARR Methodology

The methodology of the project stems from the need for integrative concepts and models able to contribute to systematic understanding of developments in the Arctic, also including the cumulative impacts of interacting drivers of change in the region. The ARR is a science-based assessment of the resilience of linked human and environmental systems in the region with resilience being understood as the long-term capacity of a social-ecological system to deal with change and disturbance, to respond and recover in ways sustaining its essential functions and identity, and to continue to develop, adapt, and when necessary, transform. The adoption of the resilience lens to understand processes of change occurring throughout the Arctic should facilitate the integration of relevant knowledge from different traditions, essential in strengthening both adaptive and transformative capacities of the Arctic SES. Finally, the concept of resilience recognizes the interplay between various levels of governance and connectedness of policy contexts in which decisions on different elements of biophysical and social systems are taken. As such, the ARR will seek, next to its contribution to circumpolar focus of the Arctic Council, to identify insights that could be applicable to national and regional processes in the Arctic states.

Among many existing definitions of the Arctic, the ARR follows the ones used by AMAP⁶ and the Arctic Human Development Report. In addition, next to circumpolar dimension, the project looks at regional specificities through its case studies, as decided by the PSC. The project's interim report includes four case studies focused on reindeer herding in Finnmark; commercial shipping through the Bering Strait; transformations in wildlife subsistence system in the southwest Yukon in Canada; and the food security issue from the resilience perspective. In the second phase, the project intends to include additional case studies to expand the

6. 'The region covered by AMAP is essentially the terrestrial and marine areas north of the Arctic Circle (66°32'N), and north of 62°N in Asia and 60°N in North America, modified to include the marine areas north of the Aleutian chain, Hudson Bay, and parts of the North Atlantic Ocean including the Labrador Sea' (AMAP Assessment Report – Chapter 2, <http://www.amap.no/about/geographical-coverage>). The AMAP definition has been also a point of departure for the AHDR definition of the Arctic, however it has to be adjusted due to the location of jurisdictional or administrative boundaries. As such 'the ADHR Arctic encompasses all of Alaska, Canada north of 60°N together with northern Quebec and Labrador, all of Greenland, the Faroe Islands, and Iceland, and the northernmost counties of Norway, Sweden, and Finland. (...) [in Russia] the Murmansk Oblast, the Nenets, Yamalo-Nenets, Taimyr, and Chukotka autonomous okrugs, Vorkuta City in the Komi Republic, Norilsk and Igarka in Krasnoyarsky Kray, and those parts of the Sakha Republic whose boundaries lie closest to the Arctic Circle' (AHDR 2004: 17-18).

geographical scope of offered examples and with them better highlight the variety of Arctic socio-ecological systems. It was also agreed that as case studies provide the empirical core of work, they should be more visible and feature more prominently in the final report than they did in the interim report.

With regard to sources of presented information, the Arctic Resilience Report links strongly to other AC and global assessment activities. It draws upon climate science input from the ACIA, SWIPA and IPCC reports, looks into the AMAP Ocean Acidification Report from 2013 for insights on thresholds related to the marine environment, and into the CAFF Arctic Biodiversity Assessment for a baseline description of biodiversity and major drivers of its change in the region. Furthermore, the ARR takes advantage of several AMAP assessments on pollution and impacts of short-lived climate forcers (SLCF), and for the social input it refers to the AHDR, the Arctic Social Indicators (ASI) project and the Arctic Human Development Report-II (planned to be finalized in 2014). The second phase of the ARR is also meant to be informed by results of the work of AC experts group on ecosystem-based management (EBM) which delivered its final report to the Kiruna Ministerial Meeting, and corresponds with the scope and activities of the Adaptation Actions for a Changing Arctic (AACA). Last, but definitely not least, the ARR seeks to integrate indigenous peoples' traditional knowledge into its works to understand its role in the resilience of the Arctic and so far has been praised for its record in this field by SAOs during their meeting in March 2013.

As it was outlined earlier, scientific assessments conducted under the auspices of the Arctic Council have played a fundamental role in the establishment of the region on the international arena and in advancing knowledge about the Arctic's social and environmental changes. However, they were also carried out much along the disciplinary lines and fields of specialization of the AC Working Groups. In this light the ARR represents an attempt at an integrated approach to analysis of the Arctic change going across issue areas, regional variability and different policy levels. It is also the first time that the resilience methodology is developed in the Arctic context so the process does not refer to any other earlier established and tested standards. Yet, based on the documents from workshops and the PSC meetings, it is clear that the ARR authors have an eye on establishing closer contacts with the AC Working Groups in order to draw from their experience, but also with a view to bring the resilience perspective more into the focus of the WGs so that the concept could play a more prominent role in the future work of the AC.

In addition, a potential advantage of the application of the resilience lens is that it could bring into the focus of policy-makers the question of uncertainty ultimately linked both to the resilience concept itself and to changes

occurring in the region. The report's authors realize that in the Arctic context policies and actions have to be based on incomplete but best available information and be modified as the understanding of change and its impacts evolves. The uncertainty question is also mentioned in the summary of the Interim Report for policy-makers.

ARR Identification of target audience

As outlined in the project's implementation plan from November 2012 "the primary target group for ARR outreach is decision makers in the Arctic at both national and sub national levels who can influence resilience in the region. A second target group is decision makers outside the Arctic with influence on the Arctic. A third target group are potential users of the assessment methodology in other settings" (Arctic Resilience Report Implementation Plan, November 2012: 13). The relevance of the project to policy-makers has been stressed throughout the project duration from the initial recognition that the terminology used in the reports should be clear and understandable to a broader (non-scientific) audience, to planned identification of policy responses to potential tipping points and thresholds in the Arctic SES.

During the second project's workshop, which took place in October 2013, its participants agreed that a project has, in fact, two target groups: One formal with the Arctic Council and specifically SAOs in focus, and another one informal comprising governments, civil society, communities, research groups and other assessment processes. For the formal group the project's final product should develop and deliver a document of policy-options with their likely implications and consequences. There were also proposals for the identification of the outputs within the ARR that could be separately directed to SAOs, to national governments, to their policy implementation works, and the one representing the capacity-building part of the project. However, seeing that the project is still on-going it is difficult to assess to which extent the project team will be able to achieve its targets and what kind of decisions will be eventually informed by the ARR within the AC and beyond.

ARR Stakeholder engagement

The stakeholder engagement element is so far not so strongly highlighted in works of the ARR. Whereas the project included a workshop conducted in Kautokeino in October 2012 and organized jointly with International Centre for Reindeer Husbandry, it was more an opportunity for discussing the complementarity of scientific and traditional/ local knowledge rather than a broader stakeholder consultation.

Such treatment of stakeholder participation may stem from the definition of the term adopted by the ARR

process designers who approach, for instance, the AC community as stakeholders in the process. In light of this understanding of the term, workshops aimed at involvement of Arctic Council representatives were held alongside the AC meetings, whereas inclusion of views from indigenous peoples have come from case studies that were based on projects funded and carried out outside of the ARR project, and where stakeholder engagement was a clear and important element.

ARR Communication and follow-up

All the publications related to the ARR project are at this stage available only in English. They encompass a factsheet, a summary for policy makers, and the Arctic Resilience Interim Report 2013, which can be obtained both in the printed and in online versions. In addition, the project's website (www.arctic-council.org/arr/) provides a lot of other information and materials like the ARR Implementation Plan approved in November 2012, a report from the scoping workshop, a detailed outline of all the conducted activities including, inter alia, minutes from the meetings, records of their outcomes and presentations from the Kautokeino Workshop organized in October 2012.

With regard to potential links to earlier projects, the assessment is not a part of any regular process and it was undertaken clearly upon the initiative of the Swedish chairmanship of the Arctic Council. At present it is still on-going and recommendations for policy-makers are only to be developed and delivered. Therefore it is not possible to speak at this stage of any follow-up activities, except for the communication follow-up outlined in the ARR implementation plan from November 2012, which is to take place after the presentation of the final ARR report in May 2015 during the Ministerial Meeting. In addition, concerning capacity-building, which may last beyond the project duration, is the launch of a course on Arctic resilience in cooperation with the University of the Arctic.

ARR Influence potential

The ARR assessment is unique in a sense that it represents more a national programme fostered by the Swedish chairmanship and conducted by an entirely external body, than any other projects linked to the WG and owned jointly by the Arctic Council. Obviously, on the one hand, such an approach can put constraints on the formal role of the ARR in the AC context and it remains to be seen whether the project will remain as relevant for the present Canadian chairmanship, which in its programme for the second term in the Arctic Council 2013-2015 does not mention the term 'resilience' and differs in its priorities from its predecessor.⁷ On the

7. For example, the priorities of the Swedish Chairmanship were a part of a joint 'umbrella programme' informally adopted before the start of the AC

other hand, the project team is clearly aware of these risks and seeks to address them in an adequate manner throughout the assessment process, from approaching other AC WGs to keeping SAOs duly informed. The ARR has also been rather successful in presenting results of its works and making its way to a broader audience through the media coverage, however the availability of materials only in English can raise questions about its applicability and direct usefulness to local and regional decision-makers in different parts of the Arctic.

IX.4 ARCTIC HUMAN DEVELOPMENT REPORT II: REGIONAL PROCESSES AND GLOBAL LINKAGES (AHDR-II)⁸

AHDR-II Overview of the assessment

The second Arctic Human Development Report (AHDR-II) is to provide, in a time of rapid global change, a comprehensive overview of human development, quality of life and the progress towards sustainable development in the Arctic. The project builds strongly on earlier work – AHDR 2004, Arctic Social Indicators (ASI) I and ASI II. AHDR 2004 provided a general overview of human development in the region in terms of demographics, legal and political issues, Arctic economy, culture, resource governance, health and well-being, education and gender issues. ASI-I developed a framework for the monitoring of human development, which was tested in the second phase of the ASI project. Therefore, AHDR II does not provide an update of AHDR I, but rather focuses on changes since 2004. The work is planned to be finalized in 2014.

AHDR-II Ownership of the process

The project, conducted under the auspices of the Arctic Council's Sustainable Development Working Group, is led by Iceland, the Kingdom of Denmark and Canada with the key role of the Stefansson Arctic Institute (SAI) from Akureyri, Iceland and Joan Nymand Larsen as a lead editor and project manager together with Gail Fondahl.⁹ Nymand Larsen has a background in economic development, and has received education from the University of Manitoba and University of Copenhagen. SAI was leading the 2004 AHDR (which had strong

Norwegian Chairmanship in 2006 by Norway, Denmark and Sweden for their successive chairmanships.

8. Material retrieved from: Arctic Human Development Report II: Regional Processes and Global Linkages. 2010. Revised August 2011. Stefansson Arctic Institute, SAO Meeting, Lulea, November 2011; SAO Meeting Reports: Torshavn, October 2010; Copenhagen, March 2011; Lulea November 2011; Sustainable Development Working Group (SDWG). Outcomes from the SDWG meeting, 3-4 October 2011, Stockholm. Presentation; Sustainable Development Working Group (SDWG). Work Plan 2011-2013. March 2011.

9. Gail Fondahl (Canada) is currently president of the International Association of Arctic Social Sciences. Another co-lead mentioned in the documents is Henriette Rasmussen (Denmark).

framing as an “Icelandic project” as it was published “under the auspices of the Icelandic Chairmanship of the Arctic Council”), as well as two ASI projects. Moreover, the lead editor was involved as a project manager and editor in AHDR 2004, as well as in ASI-I and ASI-II. SAI and especially Nymand Larsen are clearly initiating and driving forces behind the assessment. In addition, the project is funded primarily by the Nordic Council of Ministers (Arctic Cooperation Programme) and SAI. Consequently, the AHDR–ASI–AHDR-II process has a clear Icelandic and SAI ownership.

However, due to lead authorship for chapters spanning across the Arctic and a very strong role of authors in deciding the focus of their respective chapters, the pan-Arctic ownership of the AHDR process has been to a certain extent ensured, also through meetings of the authors.

The report was launched during the Swedish chairmanship in the Arctic Council and will be completed during the Canadian chairmanship. SAOs and SDWG encouraged the authors to take account of earlier work, such as SLiCA (Survey of Living Conditions in the Arctic: Inuit, Sámi and the Indigenous peoples of Chukotka), ECONOR (The Economy of the North), as well as to interact with an on-going AACA process.

AHDR-II Level of fit / time congruence

AHDR II does not directly relate to any international or regional decision-making processes. The report, however, has a potential to contribute to the overall understanding of the social development in the region, similarly to the AHDR 2004, and to highlight the social dimension within the discussion on economic development (based largely on extractive industries). Moreover, the report is presented as a tool to provide policy-makers with an overview of outcomes of numerous International Polar Year projects in regard to human development.

In the global perspective, the report, especially when seen in the context of a longer process, fits well with the human development assessment activities within the UN Development Programme and in the context of other regions, wherein UNDP conducts similar exercises on a regular basis (e.g. Latin America or Arab states).

AHDR-II Identification of the target audience

The main audience of the AHDR-II are policymakers at all levels (but primarily within SDWG, the Arctic Council and Nordic Council of Ministers, the latter due to the significant funding it provides). The report is to serve them by identifying priorities regarding human development. AHDR-II is also expected to assist policy-makers (understood broadly) by providing a basis for the development of policies and actions to address discussed challenges. The AHDR does not include

recommendations per se, but will present policy-relevant findings/conclusions and include an executive summary.

The report is also seen as an educational tool for the benefit of the broad public and to be used as material by educational institutions (especially northern institutions and the University of the Arctic and its members). For researchers and policy-makers, it is to be an “instrument that can be used in assessing progress toward sustainable human development” and “constitute a handbook for policy-makers engaged in international cooperation in the Arctic” AHDR II: Regional Processes and Global Linkages. 2010. Revised August 2011. Stefansson Arctic institute, SAO Meeting, Lulea, November 2011: 3).

Furthermore, the authors want to, through the use of clear and jargon-free narrative, address a wider audience, including media, NGOs and the Northern public and “important southern audiences” in general. The AHDR 2004 was translated into Russian and Finnish (published in 2007) – at the moment no clear language dissemination plan exists for AHDR-II.

AHDR-II Methodology

As underlined already in AHDR 2004, the assessment is unique in that it attempts to bring together the analysis of socio-economic developments occurring throughout the diverse Arctic regions in order to present a generalized picture. However, some of the chapters of the report take Arctic diversity as a point of departure. That follows the approach of Arctic Social Indicators, where in the phase II of the project a number of regional cases were chosen to test the set of Arctic indicators.

The project takes sustainable development as a human-centred concept, emphasizing human-environment relations and individual and community health and well-being.

The AHDR-II is highly multidisciplinary, with contributing authors coming from anthropology, political science, economics, legal studies, human geography, human ecology, psychology, and sociology. A “multiple-source scientific strategy” is applied as a methodological framework. The assessment includes a peer review process.

AHDR-II Stakeholder participation/ engagement

The assessment does not include a stakeholder engagement component. The project’s steering group is predominantly academic, although the executive committee included a representative of the Permanent Participants. As a result, the main venue of interactions with stakeholders is the Arctic Council and SDWG in particular, especially via the advisory committee. However, as a number of chapters incorporate case studies, it could be said that there is indirect and limited

involvement in the assessment process of those who are potentially affected by policies which AHDR-II aims to influence via these case studies.

AHDR-II Follow-up activities

At this stage no follow-up activities are planned for the AHDR-II. However, further projects connected to AHDR and ASI may be expected, as the assessment already constitutes a semi-regular process.

AHDR-II Influence potential

Since 2004, the Arctic has received much attention and there are expectations for accelerated economic development in the region, connected mainly with expansion of extractive industries. Highlighting the social dimension of developments in the long run is crucial within the Arctic Council's policy-shaping role for the region, and the AHDR-II responds to this need. Moreover, participation of key Arctic experts guarantees the high quality of the final product, ensuring the credibility aspect of the "influence potential". The report, similarly to AHDR 2004, is on the one hand, certainly expected to influence the "common understanding" among research community.

On the other hand, limited engagement with regional actors and a chiefly academic focus of the assessment may limit the spectrum of interested audiences. Despite the goal of reaching out to wider audiences, no information materials designed for lay audience or highlighting key findings are envisaged in the project plan.

IX.5 ADAPTATION ACTIONS FOR A CHANGING ARCTIC (AACA)¹⁰

AACA Overview of the assessment

The Adaptation Actions for a Changing Arctic (AACA) assessment arose as a more focused and partial implementation of earlier-proposed AMAP Arctic Change Assessment (ACA). The overarching goal of the AACA is "to enable more informed, timely and responsive policy and decision-making related to adaptation action in a rapidly changing Arctic" (Adaptation of Actions for a Changing Arctic. DMM02-15 May 2012-Stockholm, Sweden: 3).

10. Material retrieved from: AMAP (1 October 2013). Draft Implementation Plan. Version 1.1. Adaptation Actions for a Changing Arctic part C (AACA-C). Available at www.arctic-council.org; Adaptation of Actions for a Changing Arctic. DMM02-15 May 2012-Stockholm, Sweden. Item 4. Available at www.arctic-council.org; Shearer, Russel (AMAP Chair). Adaptation Actions for a Changing Arctic. Presentation at SAO Meeting, Haparanda, November 14, 2012. Available at www.arctic-council.org; Adaptation Actions for a Changing Arctic (A). Draft Synthesis Report. 8 April 2013; Arctic Monitoring and Assessment Programme. Working Group Meeting Minutes (at www.amap.no): AMAP Report 2011: 3, Moscow, Russia, October 3-5, 2011; AMAP Report 2012:2, Stockholm, Sweden, 3-5 October 2012; AMAP Report 2013:2, Torshavn, Faroe Islands, 16-18 September 2013

AACA assessment is composed of three parts:

- AACA-A, providing an overview of findings and recommendations from AC assessments and other relevant reports to determine how these contribute to and inform adaptation options for the Arctic, was completed in 2013.
- AACA-B constituted a compendium of existing national, regional and local adaptation efforts and examined how these experiences can contribute to development of adaptation tools, approaches, best practices for adaptation actions (addressing Arctic opportunities and challenges). This action was concluded in 2013 with the production of a report "Taking Stock of Adaptation Programs in the Arctic".
- AACA-C constitutes the key part of the assessment and is planned to be completed by 2017. AACA-C is to consider Arctic-focused climate and integrated environmental frameworks in order to obtain better predictions of climate change and other relevant drivers (including social and economic developments) to inform the development and implementation of adaptation actions especially in the Arctic regions.

At the 2013 Kiruna Ministerial Meeting, AMAP was requested to lead the AACA-C, and thus, to "produce information to assist local decision-makers and stakeholders in three pilot regions in developing adaptation tools and strategies to better deal with climate change and other pertinent environmental stressors" (AMAP. Draft Implementation Plan. Version 1.1. AACA-C: 3). In phase I, which is currently on-going, AMAP is putting together an inventory of existing frameworks, scenarios and models. During the following two years, in phase II (c.a. 2014-2015), additional stressors via three regional case studies will be identified, including themes such as food security, mining, transportation, tourism and resource developments. In phase III, the assessment team will integrate findings from AACA-A and AACA-B, together with the AACA-C (including integrating of results of the three regional studies).

AACA Ownership of the process

In practice, both the AACA-A and B created the basis and background information for preparation of the AACA-C. The AACA-A was led by SDWG and the AACA-B was co-led by Canada and Russia with support from Risk Sciences International (a consulting company - working in partnership with the University of Ottawa - dealing with risk assessment and management). Representatives from each of the Arctic states and Permanent Participants participated in the project.

A vision of broad participation underlines the integrative character of the AACA-C. The AACA-C is the core of the whole process and it is AMAP that is responsible for its conduct.

The AACA is designed to be implemented with contributions from and cooperation with the other Arctic Council working groups, Permanent Participants to the Arctic Council, stakeholders of the regions and international organizations. The assessment will be performed by internationally recognized scientists.

By spring 2014, the AACA-C concerning the Barents Region's pilot area has organized its scoping meeting, which was participated in by the above-mentioned actors and experts who also have hands-on experience with adaptation in the Arctic. Now, a request for nominations for experts to participate in its preparation is being called for. The process in other regions is run a bit differently according to their own traditions. Instead of organizing a stakeholder meeting as a starter, more background material is being collected first.

As the whole, the assessment spans across Swedish, Canadian and US chairmanships.

AACA Level of fit / time congruence

AACA-C, phase II is implemented by three regional integrated assessments (including environmental, social, cultural and economic dimensions), findings of which are to be then integrated towards a pan-Arctic report. These are: The Barents Region; the Baffin Bay/Davis Strait Region; and the Bering/Chukchi/Beaufort Seas Region. Due to differences between chosen regions, each regional assessment team is to be allowed much flexibility in developing approaches and methodologies. The outcomes of integrated regional assessments will be aimed at regional users and key stakeholders.

AACA Identification of the target audience

The AACA is, similarly to other AC assessments, prepared for the Arctic countries' ministers gathering at the Ministerial meeting. Yet, its main users are defined as national, regional and local authorities and other stakeholders, as well as local and indigenous peoples. The goal is to provide "useful and reliable information to the governments, organizations and peoples of the Arctic region in order to support policy-making processes for adaptation to the identified changes" (AMAP. Draft Implementation Plan. Version 1.1. AACA-C: 5).

The project is to include an elaborate "Communication and outreach strategy" aiming at a two-way dialogue, including not only planning of the presentation of results but also information on the project during its implementation. There are plans for using formats such as film or press kits. Reports meant for policy-makers and the broader public are to use simple, jargon-free language and involvement of professional journalists and science writers is envisaged. For example, the summary (laymen's report) is to be produced by a professional science writer, which has proved to be a good method in earlier assessments.

AACA Methodology

Although integrated assessments have been present to a limited degree in other Arctic Council's assessments, AACA constitutes one of the first AC assessments that aims at such integration as one of its key elements (another recent example being the Arctic Resilience Report). Moreover, AACA looks at adaptation needs in light of these multiple changes and stressors. Both opportunities and risks connected to identified changes are to be taken into account and the changes will be assessed in short term (2030) and long term (2080) perspectives.

The EU-funded projects that potentially could and may provide inputs to AACA-C include the Ice2Sea project, ArcticNet projects such as the Integrated Regional Impact Studies (IRIS), and an EU initiative on 'Opportunities for marine and maritime sustainable growth (blue growth)'.

In AACA-A and B, the primary means to collect data for were by a written survey, while in AACA-C part of the information will be a result of stakeholder workshops and by having stakeholders involved in the writing process of the reports.

AACA Stakeholder participation/engagement

In each of the three regional cases stakeholder participation constitutes a significant element of assessment work and is to be realized, inter alia, by regional workshops. Each regional report is envisaged to contain a section specifically dedicated to stakeholder perspectives. It is the stakeholders that are to define key sectors of interest in terms of needs for integrated assessments of impacts and adaptation actions, as well as key issues and questions that stakeholders would like to see addressed for policy relevance and decision-making purposes. Moreover, in the integration phase, issues of interest related to adaptation based on the needs expressed by stakeholders will be included. Indigenous peoples' participation is to be strengthened by close cooperation with Permanent Participants, where the representations vary in different pilot areas. In the Barents Region it is the Saami Council.

The mode of stakeholder involvement and specific structure of the workshop will be decided autonomously by each regional implementation team (at the time of finalizing of this report, the specifics, identifications and methods of stakeholder involvement have not been decided).

AACA Follow-up activities

AACA follow-up activities will relate to its policy recommendations. Their preparation will start soon after the main results of the assessments will be available and before the report is published. Expecting that the AACA process will be completed by 2107, its follow-up activities

are to be decided during the Finnish Chairmanship of the AC.

As the work of PAME in actively following up the recommendations of the Arctic Marine Shipping Assessment has been considered a good example and other WGs have started to adapt its good practices into their own use, it can be presumed that this development may concern also the AACCA process.

Most likely, the recommendations of the AACCA report will vary from region to region and in between different themes and target groups, meaning that an overall follow-up process may become complicated. One can speculate that the Arctic States are asked to provide reports regarding the impacts and efficiency of AACCA.

AACCA Influence potential

The AACCA can be considered as the most cutting-edge of all the assessments of the AC while it makes a true effort to bridge local adaptation planning with global level information about climate change. For example, already in its preparatory process and design phase, attention was paid to processes of co-production of knowledge and learning, both being important elements in delivery of the influential information.

Since the target group of the information produced within the AACCA is local and regional actors who make their decisions based on available credible, salient and relevant knowledge, the AACCA indeed has potential to be more concretely influential within the Arctic region than any earlier AC assessments.







Chapter cover image: Aurora Borealis.
Photo: GettyImages

X. CONCLUDING REMARKS

The increasing number and role of assessments in national and international policy-making has been, *inter alia*, the result of rising awareness of nature and complexity of problems and challenges that societies in various parts of the world begin to face and experience in their daily lives and activities. It has not been different in the Arctic, and in the realm of the Arctic Council in particular. During nearly two decades since its establishment in 1996, the Council focused much of its efforts on the conduct of scientific assessments in order to provide best available knowledge to inform policy-making. The assessments of the Arctic Council not only contributed to recognition of the Arctic as a distinct region in international relations, but they have had a part in redrawing the image of the Arctic from a 'frozen desert' into one of the 'Arctic in change'. They have been considered the most effective instruments of the AC.

The Arctic Council and its Working Groups gained significant experience in the conduct of scientific assessments varying from natural to social sciences, from the process assessments through the impact ones to more integrated approaches, finally from projects with the circumpolar perspective to ones including region-based case studies. This experience earned it a deserved title of the 'cognitive forerunner'. It also allowed for drawing on and learning lessons from past projects, and seeking to build upon good practices and successful methods applied in the Arctic Climate Impact Assessment, which so far has been regarded as the most influential AC assessment in terms of sustainable development and environmental protection.

As it has been identified with studies of many global and regional environmental assessments, the assessment and the information its final product (usually report) contains has to be viewed by its users as salient, legitimate and credible in order to be effective. Salience relates to perceived relevance of that information. Credibility addresses questions of scientific believability, quality of data and methodology. The attribute of legitimacy refers to perceived fairness and impartiality of the assessment process, having considered values, concerns, and perspectives of its relevant audience. All three properties require to be properly addressed in the assessment process and build upon the accurate treatment of elements like framing, science-policy-interface, stakeholder participation, a well-articulated mandate, follow-up activities, and a comprehensive communication plan. Additionally, time is another significant factor that allows for building credibility and greater trust between information-producers and information-users in the assessment. This has been also the case of the Arctic Council, which gained its credentials over years of its assessment activities.

Time factor puts constraints on the evaluation of

assessments' effectiveness as they can exhibit influence or affect a given issue domain over very extended time periods. Such an effect on policy domain is combined with other social, political, economic and environmental factors. As a result, establishing direct linkages between the assessment and policy or behaviour changes is very difficult. However, the influence of an assessment depends on its perceived salience, credibility and legitimacy, and these attributes can be acquired or enhanced through adequate design choices. Therefore, it is possible to attempt to evaluate potential influence of the assessment on the grounds of its applied methodology, the ownership of the process, stakeholder engagement, dissemination of results towards a targeted audience, time congruence with other policy-making processes, and eventually follow-up activities.

The selection of assessments of the Arctic Council for this report, namely: Arctic Marine Shipping Assessment (AMSA), Arctic Biodiversity Assessment (ABA), Arctic Resilience Report (ARR), Arctic Human Development Report II (ADHR-II), and Adaptation Actions for a Changing Arctic (AACA) aimed at a presentation of a wide spectrum of the AC's activities, implemented under different Working Groups (or even outside of the AC structures), taking up different topics, applying various methodological approaches and differing in their design choices. Furthermore, whereas some of the projects have already been finalized and are in the implementation phase, some are still on-going and waiting completion.

Among the presented assessments AMSA is the one that was concluded the earliest, in 2009, and since then ranked high with regard to influence on policy-making. It came at the time of growing interest in the Arctic and increasing demand for Arctic-related information, linked to emerging commercial potential of the opening Arctic Ocean. Apart from these external circumstances, one of the reasons behind its resonance has been a comprehensive scope of the assessment with a clear and straightforward methodology, but also a concrete and relatively efficient follow-up mechanism that highlights the importance of follow-up activities upon the delivery of the project's final report. AMSA also enjoyed time congruence with other international processes related to Arctic shipping, like the development of the IMO Polar Code as well as national regulations and investments. This alignment with international processes and global instruments like the UN Convention on Biological Diversity is likely to also raise the profile of the Arctic Biodiversity Assessment, delivered in 2013 and going now through the stage of identifying priorities for implementation of its particular recommendations. On the contrary to AMSA though, the ABA team took significant care of the production of various materials intended for different types of audiences, and delivered its report

for policy-makers translated into nine languages, including indigenous ones. It also ensured the inclusion of traditional ecological knowledge in the project by appointment of two TEK coordinators and sought to achieve the balance between information from North American and Eurasian parts of the Arctic, similarly to the Arctic Resilience Report project. The ARR is presently in its second phase and so far has been praised for its incorporation of indigenous peoples' perspectives on the resilience of the Arctic social-ecological systems. On the one hand, it has also, contrary to most other assessments apart from ACIA, received some attention from global media during the presentation of its interim report and, as such, has a potential to resonate with an audience broader than the Arctic Council circle. On the other hand, the fact that the ARR is not conducted under any of the AC Working Groups but carried out by an external institution may hinder its influence and effectiveness among the Arctic Council, unless linkages and connections to other AC activities and subordinate bodies are not established. The fact that the ARR bears a strong mark of the Swedish chairmanship resembles the case of the Arctic Human Development Report II, which like the first ADHR, has a clear Icelandic ownership despite being conducted within the Sustainable Development Working Group. Even though the AHDR-II is intended for the policy-makers of all levels, its limited engagement with regional actors, primarily academic focus and lack of clearly formulated recommendations may eventually limit the spectrum of interested audiences.

From all the selected assessments, the Adaptation Actions for a Changing Arctic (AACA) can be considered as potentially the most comprehensive AC project aiming to bridge local adaptation planning and efforts with global level information on climate change issues. Not only has the AACA a strong stakeholder component, but it also builds upon regional case studies focused on specificities of various parts of the Arctic. As a result, its recommendations may differ from one region to another in order to match closer with needs and concerns of local audiences and decision-makers. Finally, the AACA represents an integrated approach to the Arctic, in line with global trends in the conduct of assessments, and the EU's Strategic Environmental Impact Assessment of the development of the Arctic being the first ever such assessment carried out in the Barents region, has also the potential and can offer interesting insights and basis for the development of AACA processes.

In last few decades, scientific assessments understood as organized efforts to harness scientific information to inform policy-making, have become the increasingly popular tool in responding to challenges like climate change and environmental problems such as pollution. These major challenges, in order to be addressed adequately, require cooperation among countries, interaction between scientists and policy makers, and

inclusion of actors from all levels of the scale, from local to global. The Arctic Council has been appraised for its assessment activities related to processes and developments in the region. For many reasons, the Arctic should be considered a unique region - the population is quite sparse, traditional livelihoods such as reindeer herding continue to be practiced, indigenous populations are present in every Arctic country except for Iceland, climate change effects are considerably magnified, the ecosystem is quite fragile with long vegetation recovery rates, and there are simply far fewer animal and plant species. In terms of impact assessments in the region, perhaps the most interesting trend is that more and more emphasis is being placed on the social impacts of projects as opposed to the environmental impacts. This largely stems from the importance of social license in the Arctic and the empowerment of the indigenous populations. Thus, whether one is talking about an individual project, or a global trend such as climate change, there is a clear need for a more integrated approach. Integration will provide a better understanding of the synergies and linkages between environmental, social and economic effects, since it is the social dimension that will dominate the future impact assessment discussion in the Arctic, and can be already traced in the AC activities.

In the past, one of the main shortcomings of the Arctic Council assessment works was the fact that they remained relatively unknown to the audience outside of Arctic Council circles, both within the Arctic states and in the countries outside of the region. Yet, with the Arctic's global importance growing due to consequences of climate change and globalization, the number of actors interested in its developments and having the capacity to play an influential role in addressing Arctic issues, is increasing. In recognition of these changing circumstances, the mechanism for the effective engagement of external actors into AC assessment activities and their inclusion into AC structures should be established. This way, the Arctic Council would remain the cognitive forerunner and maintain its essential role in producing Arctic-related knowledge for the sound and science-based policy making.





Chapter cover image: Strokkur Geysir, Iceland.
Photo: GettyImages

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