
ARCTIC RESILIENCE REPORT (ARR) IMPLEMENTATION PLAN

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AIM

The Arctic Resilience Report (ARR) analyses the resilience of linked human and environmental systems in the Arctic. It aims to:

- Identify the potential for shocks and large shifts in ecosystems services that affect human wellbeing in the Arctic.
- Analyse how different drivers of change interact in ways that affect the ability of ecosystems and human populations to withstand shocks.
- Evaluate strategies for adaptation and transformation in the face of rapid change.

These aims are further elaborated in the work plan (p. 5).

BACKGROUND

ARCTIC COUNCIL DECISIONS

In the context of welcoming the assessment of the Arctic cryosphere entitled Snow, Water, Ice and Permafrost in the Arctic (SWIPA), the Nuuk Ministerial Declaration

“**notes with concern** the accelerated change in major components of the cryosphere and the profound local, regional and global effects of observed and expected changes, **emphasize** the need for forward looking Arctic cooperation with a view to increase Arctic resilience and to enhance Arctic Council leadership to minimize the human and environmental impact of climate change and **instruct** Senior Arctic Officials to consider how to best follow up on the SWIPA recommendation in the future work of the Arctic Council.” (Nuuk Declaration May 2011).

The SAO report to the Nuuk Ministerial meeting in May 2011 states that

“... a scoping exercise will be undertaken to review the need of an integrated assessment of multiple drivers of Arctic change, *including an Arctic Resilience Report*. The projects will address questions on how the Arctic, in particular indigenous peoples, are affected by current and planned activities, how negative effects can be minimized and how resilience can be strengthened. Scoping activities will take place in the fall of 2011 ... *result in a proposal for the SAO meeting in November 2011*” (SAO Report Nuuk 2011, emphasis added).

Based on the Ministerial declaration and the SAO report, a scoping workshop was held 26-28 September in Stockholm, Sweden, with participants from the Arctic Council working groups and invited experts (ARR 2011). This workshop, along with a scoping workshop for the Arctic Change Assessment (ACA) also in the last week of September 2011 (AMAP 2011a), showed a need for new approaches in assessing Arctic change. The scoping phase included consultations with experts from all Arctic countries and several indigenous peoples’ organizations. It also provided the base for collaboration with international organizations that represent relevant communities of experts.

Based on the scoping activities, a proposal for the Arctic Resilience Report was prepared and presented to the SAO meeting in Luleå 8-9 November 2011 (3-2-AC-SAO-

NOV2011). Following the presentation of the proposal, the ARR was discussed in the Arctic Council. As recorded in the minutes from the meeting:

“Several of the working groups noted that the ARR may be useful and interlinked with ongoing work in their groups. The project proposal as presented was broadly welcomed by both member states and PPs. The importance of involving the PPs from the beginning of the process, and the question of financing of PP participation was underlined. The management structure of the ARR, and the interconnections with ACA¹ and EBM were debated. Canada indicated that they are exploring whether and how it would be possible to co-chair the ARR, as the anticipated timeframe of the ARR involves a deliverable at the end of the Canadian chairmanship.”

“Decision: The ARR project as presented was approved as an Arctic Council project.”

(SAO 2011)

The scoping phase of the Arctic Resilience Report was led by Stockholm Resilience Centre and Stockholm Environment Institute in cooperation with Resilience Alliance.

THE ARCTIC IS CHANGING RAPIDLY

The Arctic region is changing rapidly in ways that could dramatically affect ecosystems and livelihoods. Climate change and its direct impact on terrestrial and marine environments are a major concern, including the large changes that have been observed in the cryosphere (ACIA 2005; Asinimov et al. 2007; Callaghan et al 2011; AMAP 2011 b, c). Rapid economic development and social transformation are also significant factors (AHDR 2004). While some changes may be gradual, there may also be more rapid shifts in physical features (e.g. sea ice and permafrost) and ecosystems that can have large impacts on local livelihoods, regionally economically important activities, and globally relevant ecosystem services (Wassmann and Lenton 2012).

Scientific assessments carried out under the auspices of the Arctic Council have played a major role in advancing the knowledge about environmental change in the region, including impacts of persistent pollutants (AMAP 1997, 2002, 2009) and climate-related changes (ACIA 2005; AMAP 2011). Consequences for economic activities and the need for policy initiatives in relation to changes in the marine environment have been in focus for the Arctic Marine Shipping Assessment (Arctic Council 2009) and the on-going Arctic Ocean Review. Social trends have been highlighted in the Arctic Human Development Report (AHDR 2004), and have been followed up in the Arctic Social Indicators project (Larsen et al 2010). They will be in further focus in the newly started assessment process Arctic Human Development Report II. Many economic drivers affecting Arctic change have been highlighted in reports from the project Economy of the North (Glomsrød and Aslaksen 2008). The first report from the Arctic Biodiversity Assessment (CAFF 2010) illustrates how impacts on Arctic biodiversity are often the result of

¹ Since this initial decision, the ACA has been changed into the initiative Adaptation Action for a Changing Arctic (AACA).

several stresses and also that biodiversity management has to address a complex landscape of social, political, biological and physical factors.

Several large-scale research initiatives (e.g. International Polar Year; see Krupnik et al 2011) and efforts to coordinate Arctic research (e.g. International Study of Arctic Change (ISAC) (Murray et al. 2010) have further added to the growing body of knowledge about Arctic change. While research results are likely to find their way into future assessments focusing on specific issues, one of the key challenges is how to integrate knowledge from different scientific disciplines, including both natural and social sciences, as well as insights from both scientific and traditional knowledge. While research on different aspects of environmental, social and economic issues in the Arctic exists, there is as yet limited integrated assessment of the implications of these across scales and time for Arctic communities. The need for 'integrative concepts and models' that can aid systemic understanding of the Arctic has been identified and 'resilience' has been put forward as such an integrative concept (Wassmann and Lenton 2012, p.7).

A few publications discuss resilience in the Arctic generally (e.g. Chapin et al 2006), attempt to assess resilience in Arctic ecosystems (e.g. Sommerkorn 2012) or address specific aspects of social-ecological resilience in the Arctic (e.g. Forbes et al 2010). The concept of resilience has also been used in projects that specifically discuss the role of traditional knowledge in addressing rapid change in the Arctic (e.g. Reinert et al 2010).

A resilience assessment builds on the notion that humans and nature are inter-twined social-ecological systems where the capacity to remain in a desired state for humans is determined by the resilience of the entire system through its capacity to deal with shocks and changes in disturbances, to adapt to change, and to transform in the face of crises (Folke 2006; Folke et al., 2011). There are *limits* to how much a system can cope with shocks and disturbances and still recover. Beyond those limits it functions differently, and the system changes to some other state.

There is emerging but still limited understanding of tipping points in the Arctic (Wassmann and Lenton 2012). A variety of physical Arctic climate tipping elements have been identified including the Arctic sea ice, the Greenland ice sheet, Atlantic thermohaline circulation and boreal forest (Lenton 2012). In marine systems, observations point to dramatic changes in both ice cover and the underlying water column, with implications for marine ecosystems (Carmack et al 2012; Duarte et al. 2012). For terrestrial ecosystems, evidence has accumulated on relatively rapid shifts (10-25 years) in keystone plant communities throughout the Arctic thanks to recent syntheses within the International Tundra Experiment (ITEX; Elmendorf et al. 2012a,b). Also relevant is the rapid Arctic greening that has been observed, with increasing shrub growth, indicating the potential for structurally novel ecosystems to emerge from within the tundra zone (Macias-Fauria et al. 2012). Vanishing permafrost alters the hydrology, accelerating the observed changes in community composition and diversity (e.g. Molau 2010). Rapid changes at the ecosystem and landscape levels in the Arctic tundra, such as increasing shrub coverage, are brought about by multiple drivers (temperature increase, permafrost release) and with feedbacks on the radiation balance adding to the surface warming (Blok et al. 2011; Sturm et al. 2005; Tape et al. 2006). Ongoing landscape changes reduce the carrying capacity for summer grazing by caribou and reindeer.

Some studies focus specifically on social tipping points and resilience in the Arctic, such as analysis of the economics of adaptation to climate change (Huntington et al 2012) and the challenges for governance in turbulent times (Young 2012). Nuttall (2012) points to research on the anthropology of anticipation for understanding of social and cultural capacity to deal with change. Also relevant in the growing body of knowledge on vulnerability and adaptation to climate change (e.g. Hovelsrud and Smit 2010).

APPROACH

The ARR will be carried out by *engaging experts* who will review available literature and be responsible for writing chapters for the project reports and by *workshops* that ensure integration of information across disciplines and facilitate interaction with stakeholders. The ARR relies on past and on-going assessments and research projects for data and detailed analyses of different specific aspects and drivers. The ARR aims to ensure indigenous participation by engagement of the Permanent Participants.

The ARR is built around three types of activities:

1. Case studies

Case studies will be used to develop the resilience analysis methodology in contexts that are directly relevant to user communities and decision makers in the Arctic. Case studies can either have a geographic focus or deal with a specific issue. The case studies will be carried out in cooperation with relevant partners.

2. Integrated assessment

Integrated analyses are at the core of the Arctic Resilience Report process and will take place throughout the project. The initial phase includes mapping potential shocks and risks of tipping points across the Arctic, including a gap analysis to identify processes that require additional study efforts. Later on, the integration will also focus on comparing case studies to identify lessons that are relevant across the Arctic. The integration also includes assessment of resilience/adaptive and transformative capacity, and how this may be affected by Arctic change. One tool for integrating information is scenarios of potential futures.

3. Capacity building

A resilience analysis is ideally an on-going process that continuously takes new developments into account. A major task is therefore to build capacity within the Arctic to continue using resilience assessments as a tool for dealing with rapid change after the project is finalised. Capacity building activities will be developed in cooperation with University of the Arctic and Permanent Participants of the Arctic Council.

WORK PLAN

The purpose of the ARR is to better understand the risks of rapid change in the Arctic with focus on the risks of non-linear changes. The three aims of the ARR presented in the beginning of this document can be further clarified as follows:

1. **Identify the potential for shocks and large shifts in ecosystems services that affect human wellbeing in the Arctic.** This aim is about understanding *thresholds of concern* in the Arctic, focusing on the resilience ‘to what’. The focus is on interacting global and local changes affecting the Arctic. The initial emphasis will be on the pan-Arctic context while specific contexts can be revealed in case studies.
2. **Analyse how different drivers of change interact in ways that affect the ability of ecosystems and human populations to withstand shocks.** This is about assessing ability to withstand shocks, about analyzing adaptive and transformative capacity and how these may be changing.
3. **Evaluate strategies for adaptation and transformation in the face of rapid change.** The third aim is about strategies for adaptation, which should be linked to the Arctic Council decision-making interests and focused on addressing risks for threshold effects and large-scale shifts.

The main deliverables of the ARR will be an interim report in May 2013 and a final report in May 2015. The relationship between the aims and different parts of the interim and final reports are described in detail below. Other planned ARR deliverables include workshops and capacity-building activities. In addition, a process will be initiated as part of methods development and in collaboration with the Permanent Participants to elaborate of strategies for making the ARR relevant and usable by people living in the Arctic and for integrating indigenous traditional knowledge.

INTERIM REPORT

The interim report will focus on providing

1. A description of the resilience assessment methodology section (including definition of terms) and its place in relation to other assessments of risks and vulnerabilities in the Arctic.
2. An assessment of the potential for shocks and large shifts in ecosystem services that may affect human well-being in the Arctic.
3. A review of available literature on adaptive and transformative capacity that is relevant for later analysis of how different drivers of change interact in ways that affect the ability of ecosystems and human populations to withstand shocks

Three groups of Convening Lead Authors (CLAs) have been tasked to develop detailed contents of the three parts.

The interim report will also include short presentations of four pilot case studies and an initial synthesis based on the outcome of the fall 2012 workshop.

FINAL REPORT

The final report will include an update of the thresholds assessment as needed but will primarily focus on assessing how different drivers of change interact in ways that affect the ability of ecosystems and human populations to withstand shocks. This assessment will be based on the interim report as well as input from other relevant projects, including Arctic Council assessment processes, such as the AHDR-II. In addition the final report will include descriptions of additional case studies, insights from a case study comparison, and an overall synthesis of results.

The final report will also address the third major aim of the ARR, to “evaluate strategies for adaptation and transformation in the face of rapid change.” This evaluation will form an important basis for identifying policy-relevant implications of the findings from the assessment.

WORKSHOPS

The project will include three major workshops to bring the assessment forward, to ensure integration across different activities, and to involve a wider group of experts and stakeholders. We anticipate approximately 50-60 participants for these workshops:

Fall 2012 (October 29-31 in Kautokeino, Norway). The purpose of the Kautokeino workshop is 1) to elaborate on the identification of thresholds in Arctic ecosystem services and their possible interactions, and 2) to further develop two pilot case studies where one is focused on reindeer herding and the other on food security. The workshop will also highlight the role of traditional knowledge in analyzing resilience in the Arctic.

Fall 2013. The purpose of this workshop is to analyze how resilience and adaptive and transformative capacity are changing, and to discuss possible policy implications.

Late spring/early summer 2014. The purpose of this workshop is to elaborate on the synthesis of results and to discuss possible policy implications.

The project will also include several smaller workshops to develop the methodology and specific aspects of the analysis.

CASE STUDIES

Case studies will be based on on-going relevant projects and activities that can inform specific aspects of resilience in the Arctic. Four pilot case studies will be initiated in 2012 and presented in the Interim Report. They focus on food security, reindeer herding, transformation of wildlife-subsistence system in Yukon, and shipping in the Bering Strait. Additional case studies will be solicited to cover a broader geographical range and additional issues.

The ARR management team will together with the case study coordinator in the Project Steering Committee develop a framework for analysis and template for presentation of the case studies.

CAPACITY-BUILDING

Initial capacity-building activities include developing an undergraduate course on Arctic resilience with the University of the Arctic. This works will start in 2012 with the aim of launching a course in 2013.

Later capacity-building activities tentatively include developing a resilience assessment “tool-kit” relevant for the Arctic, to be based on further development of the Resilience Assessment Workbook. This works will be initiated in the early summer of 2013.

TIMELINE AND PLANNED MEETINGS

The ARR was initiated in 2011 and will be finalized in 2015.

	Meetings and major activities	Major outreach and deliverables
2011	Scoping and project proposal. Approval as Arctic Council project.	Report and video documentation from scoping workshop
2012		
	Nominations for PCS and AIT	Basic presentation material and website
April 27-28	PCS and expert meeting, Montreal 27-28 April	Presence at IPY conference
June 15	PSC virtual meeting	
	Start developing UArctic course	
Aug. 23-24	Methods workshop Stockholm August	
Sep 30	Draft chapters interim report	
Oct 29-30	Workshop, Kautokeino	Workshop report
Oct 31	PSC meeting, Kautokeino Prepare review process for interim report. Start process for discussing possible input to 2013 AC Ministerial.	
Nov 14-15	SAO meeting, Haparanda	Progress report
	Revision of chapters for interim report	
Dec 15	Delivery of chapters for interim report.	
2013		
January	Review of interim report	
Feb (early)	PSC+AIT meeting. Focus on review of interim report and input to May 2013 Ministerial. Decision on additional case studies for final report	
Feb 5-7	Meeting of Arctic Ministers of the Environment, Jukkasjärvi, Sweden.	High-level discussion of results, with focus on implication for international environmental policies
Mar 5-7	SAO meeting	
Mar-April	Final revisions and production of interim report	
May	Ministerial meeting, Kiruna	Interim report launch
May?	Expert meeting/AIT (gap analysis and initiation of assessment of resilience for final report)	
Summer	Initiate “tool-kit” development	
September	Launching of U Arctic course	
October	Workshop and PSC meeting	
Nov-Dec	Final report writing continues with case study comparison, overall synthesis and initial assessment of policy implication	
2014		
June	Workshop focused on policy implications	
July-Aug	Revision of text	
Sept-Oct	Review final report	

October	PSC meeting. Focus on preparing input to 2015 ministerial	
Nov-Dec	Final revision	
2015		
Jan-Apr	Production of final report	
May 2015	Canadian Ministerial meeting	Delivery of final synthesis report Outreach event
June-Dec	Ensure continuation of capacity-building efforts outside project. Communication follow-up	

METHODOLOGY AND METHOD DEVELOPMENT

METHODOLOGY

Following the process set out in the Resilience Assessment Workbook (Resilience Alliance 2010), three streams of analysis will progress in parallel: 1) the identification of potential thresholds (tipping elements/points) 2) the assessment of general resilience, and 3) assessment of specific resilience.²

(1) Tipping elements/points

A set of policy-relevant physical, ecological, social and economic Arctic tipping elements will be identified through comprehensive literature searches, an expert consultations (after Lenton et al 2008), and a workshop that also includes stakeholders.

(2) General resilience

A pan-Arctic scale assessment of general resilience will be undertaken through literature reviews and workshops. It will also be based on information from Task 1 and the case studies. The assessment will:

- Define and describe the Arctic social-ecological system(s) in focus and the valued goods and services they provide (the resilience "of what")
- Generate an historical disturbance timeline (resilience "to what")
- Identify interactions between the various tipping elements identified in Task 1 for the pan-Arctic scale. Identify sources of and strategies for resilience and transformational change.
- Identify possible interventions for policy and management

The case studies will follow a similar model, focusing on a specific issue.

² 'General resilience refers to the overall social-ecological capacity to deal with change of the entire system. Specified resilience refers to how well a social-ecological system can avoid/withstand a particular threshold effect/tipping point between alternate stable states. Focusing all attention and efforts on building resilience to one or a limited set of threats (specified resilience) can inadvertently lead to a loss of resilience in other ways making the system vulnerable to other unknown threats' (Ryan et al 2011 p.7, see also Folke et al 2010).

(3) Specified resilience

Assessment of specific resilience will focus on issues of particular policy concern and be informed by both the 'expert assessment' and stakeholder priorities of social-ecological risks.

METHOD DEVELOPMENT

Methodological development is intrinsic to the project. It includes developing a set of methodological principles to underpin the project as a whole. Key methodological challenges associated with conducting a resilience assessment for the Arctic include:

- generating a shared understanding of terms and concepts
- agreeing an approach to identifying and defining thresholds
- identifying approaches to analyzing interactions between thresholds, including cross-scale interactions
- identifying strategies to include appropriate consideration of social, ecological, and biogeophysical processes, including special attention integrated social-ecological systems
- ensure efficient communication and integration between different parts of the assessment process, i.e. theory/methods, thresholds analysis, analysis of adaptive and transformative capacity, and case studies
- clarifying the relationship between the pan Arctic scale assessment and the case studies and the scope of both

Method development activities will also address integration of traditional knowledge and strategies for the inclusion of young scholars and appropriate geographic and disciplinary representation in the project. Special efforts will also be made to design an assessment process that is able to analyze integrated social-ecological systems, with due attention to all relevant processes.

The overall strategy for the assessment process and the specific methods development issues will be further discussed in a short position paper on methodology to be developed during the summer of 2012 and at a methodology workshop in Stockholm August 2012.

The project will also collaborate with other resilience assessment initiatives (e.g. ongoing efforts to assess Arctic ecosystem resilience) in order to integrate their methodological developments into our approach where appropriate.

PROJECT ORGANISATION

PROJECT STEERING COMMITTEE (PSC)

The role of the PSC is to oversee project implementation and facilitate coordination with other Arctic Council activities. It is responsible for reporting about project process to the Arctic Council as relevant or requested by the Senior Arctic Officials. The PSC decides about membership of the Assessment Integration Team, including appointing scientific

leaders for different project components. The PCS is also responsible for ensuring appropriate scientific and national review of major reports.

The PCS includes representatives from Arctic Council member countries, Permanent Participants, and Working Groups, along with representatives of organisations with which there is a formal collaboration. Chair of the PCS is Johan Rockström, director of Stockholm Resilience Centre.

ASSESSMENT INTEGRATION TEAM (AIT)

The AIT consists of experts and is responsible for the content of the major project outputs, incl. an interim report in 2013 and a final report in 2015. The AIT should also ensure scientific and traditional knowledge input to the ARR and support integration of insights across chapters and from different case studies.

Members of the AIT are the Convening Lead Authors of the project reports, complemented with a case-study coordinator and an expert from the food security case study. The membership of the AIT is decided by the PCS. Further experts can be added to the AIT as needed. The AIT should represent a broad range of expertise and pan-arctic geographical coverage.

PROJECT MANAGEMENT TEAM

The Stockholm Environment Institute and Stockholm Resilience Centre at Stockholm University lead the ARR, where a local project management team guides project development, ensures good management practices, and is responsible for internal and external communication. Administrative responsibility and financial reporting rests with SEI. The project leader is responsible for reporting about project progress to the PCS and to funders.

COLLABORATING PARTNERS

The role of the collaborating partners is to support the ARR process by facilitating contact with relevant experts and to facilitate appropriate links to ongoing research and capacity-building activities. Collaborating partner are expected to nominate a representative to the Project Steering Committee and to support the PCS in its tasks.

The following organisations have committed to be collaborating partners and are represented in the Project Steering Committee:

- International Arctic Science Committee
- International Arctic Social Science Association
- University of the Arctic
- International Study of Arctic Change
- World Wide fund for Nature – Global Arctic Programme
- European Environment Agency
- Resilience Alliance

CHAIRMANSHIPS OF THE ARCTIC COUNCIL

The project has been developed and will be carried out in close collaboration with the Swedish Ministry of the Environment as part of the Swedish chairmanship of the Arctic Council. An interim report will be delivered at the close of the Swedish chairmanship in May 2013.

The project will deliver its final report at the close of the Canadian chairmanship in May 2015. Collaboration with the Canadian chairmanship will be established, and includes the possibility of adding a Canadian co-chair to the PSC.

BUDGET SUMMARY AND FUNDING

According to the proposal submitted to the Arctic Council, the estimated cost for ARR activities during 2012-2015 will be provided by Sweden. This includes costs for 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 is to be covered by each country. Additional funding for regional workshops, capacity building, and local activities needs to be raised by separate funding applications to relevant organisations and agencies.

BUDGET SUMMARY

The estimated total cost for the project for 2012-2015, excluding regional workshops, local activities and capacity-building activities, is SEK 12.4 million.

Costs for the scoping phase (2011) amounted to SEK 447,740.

Summary of budgeted costs in kSEK:

	2012	2013	2014	2015
Project leadership and secretariat, including overhead	1867	2424	2485	1861
Project travel	100	100	100	100
Workshops	120	120	120	120
Travel support	75	75	75	75
Communication and outreach, including production of reports	115	1185	635	685
Sub-total	2277	3904	3415	2841
Capacity-building activities	240	240*	240*	

*pending continued funding from Nordic Council of Ministers

FUNDING SOURCES

Funding for the scoping phase and for some of the costs in 2012-2013 has been provided by the Swedish Environmental Protection Agency and the Swedish Ministry of the Environment (total of SEK 3.4 million). Additional funding for 2012 (DKK 500,000) has been granted by the Nordic Council of Ministers (with focus on capacity building and a workshop in collaboration with Danish Arctic Ecosystem Resilience Assessment/AERA).

COMMUNICATION AND OUTREACH

Communication is viewed as an on-going dialogue, where major stakeholders connected to the Arctic Council are brought into the process from the beginning. An example is the scoping workshop that was held in Stockholm 26-28 September 2011.

Central to the communication strategy are the *workshops* that will be organised to conduct the assessment. When relevant, we will use to workshop to also organise *open events*, such as lectures by invited experts that we can record and place on the project's website.

The *project website* is the major venue for distributing material and providing project updates. The website is organised in collaboration with the Arctic Council and available at www.arctic-council.org/arr.

The project will produce two major reports: an *interim report in May 2013* and a *final report in May 2015*. In connection with releasing the reports, accessible summaries for policymakers will be produced and outreach events organised. The executive summary of the report will be translated to the main languages of the permanent members of the Arctic Council (as funding allows).

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 makes outside the Arctic with influence on the Arctic. A third target group are potential users of the assessment methodology in other settings.

Activities described under "capacity building" are also an essential component of the project's communication strategy. The goals for building *educational capacity* regarding Arctic resilience are more long term but possibly the most important for increasing resilience in the Arctic.

Specific communication activities in the work plan also include production of outreach material, side events in connection with Arctic Council meetings (when appropriate) and a high-level discussion with Arctic Ministers of the Environment in early 2013.

Responsibility for communication rests with the project leader with assistance from SEI's communication department and the Arctic Council secretariat and in line with the communications strategy that is being developed within the Arctic Council.

ETHICAL CONSIDERATIONS

ARR activities should follow the “Guiding Principles for the Conduct of Research” that have been developed by the International Association for Arctic Social Science (IASSA): <http://www.iassa.org/about-iassa/research-principles>.

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