The eight arctic and boreal nations are now experiencing unprecedented environmental and social changes. The following seven papers in this Ambio issue summarize results that explain why northern countries might be either unusually resilient or vulnerable to these changes. These papers result from a meeting sponsored by the Royal Swedish Academy of Agriculture and Forestry and the International Arctic Research Center to address high-latitude sustainability. Policy decisions made by northern countries in the next two decades will strongly influence their resilience to future change. Northern countries have an advantage in planning for change because we are virtually certain of many of the changes that will occur: i) warming of climate, causing thawing of permafrost, an increasingly ice-free Arctic Ocean, and widespread ecological change; ii) globalization of the economy, so the economics of the extractive industries on which northern countries now depend will become increasingly vulnerable to events that occur outside the north, and at the same time northern ecologies are increasingly vulnerable to these global business developments; and iii) increased intermixing of indigenous and western cultures, providing both opportunities for innovation and threats to the cultural ties of indigenous people to the land and sea. The adjustments required to adapt to these anticipated changes also enhance the flexibility to cope with changes that are less certain or unexpected. A few general strategies have a high probability of enhancing resilience of northern countries to future change.

i) Foster ecological, economic, and cultural diversity. The north is a land with a low diversity of species and of major industries but a high diversity of ecosystem types and cultural traditions. Diversity provides the seeds for new opportunities and increases the options for coping with change. By supporting and protecting ecological and cultural diversities and by encouraging economic diversification, northern countries make themselves less vulnerable to the adverse effects of future change.

ii) Plan for changes that are likely to occur. By recognizing the directional nature of current changes, northern countries have the opportunity to design the institutional flexibility necessary to anticipate and adjust to change. Planning in the context of change draws attention to those slowly changing processes such as education, infrastructure development, and ecological integrity that control the long-term societal response to change.

iii) Foster learning. Northern countries also have an unusual opportunity to learn from one another, because similar forces are impacting all northern countries, with their wide array of social, economic, political, and ecological conditions. By collaborating closely to examine the patterns of response to this global experiment, we can learn which policy options show greatest promise for sustaining the attributes of northern systems that are most important to society. Northern countries have the opportunity to create learning networks across stakeholder groups such as policymakers, business executives, citizens, NGOs, and international financing institutions such as the World Bank and the European Bank of Reconstruction and Development.

iv) Communicate the societal consequences of recent changes. Northern countries are the canary in the mineshaft of global change. By communicating the societal consequences of recent rapid changes, northern countries have an opportunity to make a convincing case that global change has consequences that are significant to society and that the global nature of the causes of many of these changes warrant global action to reduce or reverse these changes.

In summary, northern countries have a unique opportunity to shape their future in the context of global change. We know the nature of many of the changes that will occur. There are clear policy options that will influence the rate and nature of these changes and the societal consequences of changes that occur.

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OPTIONS FOR ENHANCING THE RESILIENCE OF NORTHERN COUNTRIES TO RAPID SOCIAL AND ENVIRONMENTAL CHANGE: A MESSAGE TO POLICY MAKERS