

The importance of global and multi-scale assessments, and their importance to local-level communities and culture

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Last March, I had the honour of presenting a paper at a conference organized by the Millennium Assessment (MA), entitled *Bridging Scales and Epistemologies: Linking local Knowledge and Global Science in Multi-scale Assessments*. A large number of papers at the conference, including my own, discussed how local knowledge could be used to assess aspects of the earth's ecosystems - my paper examined how traditional knowledge could be used to help assess wild species in Canada. This conference was an expression of the importance of local Indigenous people in addressing the conditions of the global environment. Nearly one year later, the MA has recently released a report which details the converse: the environment and its present condition has major implications for the present and future conditions of all the world's people, Indigenous ones included.

The Millennium Ecosystem Assessment was a series of global and sub-global assessments involving over 1,300 researchers from 95 countries with the goal of documenting the present conditions of Earth's ecosystems and forecasting future ones. After 4 years of data gathering and analysis, the MA released a report at the end of March which synthesized their findings:

1. Nearly two-thirds of the ecosystem services examined during the assessment are being degraded or being used unsustainably. These services include fresh water, capture fisheries, and climate regulation. Humans have fundamentally and irreversibly changed the diversity of life on Earth – often to meet the growing demand for food, water, timber, fiber, and fuel.
2. The damaging effects of degrading these ecosystem services are borne largely by the poor, which further exacerbates the disparity among groups of people. This is especially apparent for Indigenous people who often make up the poorest section of a country's society. Loss and degradation of such services are often the root cause of poverty and social conflict in many regions, and it is often Indigenous people in places like sub-Saharan Africa, Central America, or southeast Asia that are the most dependent on ecosystem services for their food, clothing, and shelter.

While not all changes have been negative (human health and malnourishment have improved, wealth for some has increased) such gains are paid for by the degradation of our ecosystems and an increase in poverty for many. Because these ecosystem services are often seen as “public goods”, owned by no one and generally lacking an agreeable market value, they are degraded at the expense of future generations. Furthermore, many of these common-pool resources are becoming increasingly privatized, and traditional lands and resources that once sustained Indigenous people for thousands of years are expropriated and degraded.

But the collapse of ecosystem services is not limited to the Indigenous people, the poor, or the unborn. Global issues such as climate change pay no attention to borders or socioeconomic class; furthermore, many of the resources we demand, including gold, oil and labour, come from countries experiencing extreme environmental degradation, which creates further poverty and socioeconomic instability. Conflicts over oil and water, mass famines and migrations due to drought and flood are in part a result from the degradation of ecosystem services. In his recent book, *Collapse: how societies choose to Fail or Succeed*, Jared Diamond suggests that the 1994 Rwandan genocide – where hundreds of thousands of people were killed – is in effect a result of environmental pressures. Areas of northern Canada are increasingly affected by global warming as permafrost melts and coastlines are washed away.

But all hope is not lost. Three of the four projected scenarios analyzed by the MA show that negative ecosystem consequences can be mitigated, but only with significant changes in policies, practices, and institutions. Indigenous empowerment and involvement of traditional knowledge plays a key part in halting the decline. Preliminary evidence on vegetation cover and forest fragmentation in the Amazon shows that Indigenous control over lands can result in forest cover as effective as a strictly protected area.

The Millennium Ecosystem Assessment has shown that the slow collapse of the world's ecosystem services is our own undoing, but that salvation also lies with us. In line with traditional Aboriginal teachings, all things are connected. Regional issues of Aboriginal poverty, health, and dispossession of lands are all factors in the global environmental issues that threaten the very services which our society and economy rest upon. It is through continually improving the social, economic, and environmental conditions of Aboriginal people at a regional and local level that will help maintain those global ecosystem services upon which all life and spirit rests.