

**Fifth Science Centre World Congress
June 15-19, 2008 • Toronto, Canada**

Remarks from the Chair

Lesley Lewis reminded delegates that the 5th World Science Centre Congress was designed as a carbon-neutral event. Registration fees included a “green levy” that was used to offset the carbon output of the congress. That levy was used to help pay for a ground-source heat pump at a school in British Columbia, Canada, which will prevent 100 tons of emissions annually. The levy will also support an owner-based environmentally friendly greenhouse and a project to replace charcoal-burning stoves in West Africa with solar stoves.

**Living On, Changing and Sustaining Planet Earth:
The Role of Science Centres**

*Remarks from Presenting Sponsor Siemens
Guenther Scholz, President and Chief Executive Officer, Siemens Canada*

Siemens Canada’s ongoing relationship with the Ontario Science Centre is a testament to its commitment to Canada as a business partner but also as a corporate citizen, Guenther Scholz said. Business relationships at the company are based on three core values: responsibility, excellence, and innovation.

Siemens trusts that science holds the answers to some of the world’s toughest questions, Scholz said. “Even though we sell products, we are actually selling science and innovation with every product we bring to the market.... In a way we are a science centre ourselves, as we focus on securing, extending, and enhancing life with technology.”

He challenged delegates to “Open your minds to new ideas and opportunities, explore the possibilities that science and technology have to offer, and never be afraid to question.”

Keynote Address

Sheila Watt-Cloutier, Chair, Inuit Circumpolar Conference

The Arctic is undergoing enormous, historic environmental changes as the impacts of climate change, the weakening of the protective ozone layer, and the accumulation of heavy metal pollutants combine, Sheila Watt-Cloutier said. The people of the North still live closely with nature, and there is much to be learned through traditional knowledge and science, which connect the North with the rest of the globe.

Aboriginal peoples fought strongly for the adoption of the Stockholm Convention, and traditional knowledge had a significant impact on the Montreal Protocol. In both those

cases, Watt-Cloutier said, “Aboriginal peoples shared our knowledge with the best of science and showed the world the human face of a devastating problem.”

“But today we’re facing even more of a challenge, much more difficult to reverse, as both traditional and scientific reports converge.... The Inuit are struggling to cope with erosion, melting permafrost, thinning sea ice, receding glaciers, and an invasion of new animals, many of which we don’t even have names for.”

Often, she said, indigenous knowledge is dismissed as anecdotal, but in reality traditional scientists work with an intimate knowledge of the cycles of nature, without which northern Aboriginal peoples would have perished rather than thrived for millennia.

Watt-Cloutier described the input that Aboriginal peoples had into the Arctic Climate Impact Assessment process. At every stage of the process, traditional knowledge was used to guide and verify scientific findings. This combination of the two knowledge systems yielded a report that had a tremendous impact when it was released in 2004.

There is urgency around climate change because its impacts are being witnessed daily in real and concrete ways by the Inuit. “In the North, climate change is not something that may happen in the future; it’s something that is happening now,” Watt-Cloutier said.

She asked delegates to consider the role that traditional knowledge can play in reversing the disintegration of the Arctic ecosystem and turning back the tides of climate change by putting a human face on its impacts and providing first-line assessments of what is happening on the land.

The issue of climate change is ultimately about the right of the Inuit to exist as Aboriginal people. “There is a connection between climate change and human rights. It’s not just about polar bears; it is about people and a way of life.”

In 2005, the Inuit Circumpolar Conference submitted a 175-page climate change report to the Inter-American Commission on Human Rights on behalf of all polar peoples. The destruction of the environment and the cultural economy of the Inuit, principally as a result of carbon emissions from the United States, are a violation of the 1948 *American Declaration of the Rights and Duties of Man*, Watt-Cloutier said. “The energy behind the petition is not about confrontation and anger; it is a bold assertion whose purpose is to educate and inform and encourage the United States to join the community of nations in the battle against climate change.... It’s about reaching out, not striking out—a gesture from an ancient culture still deeply tied to the land to a culture that has lost its place in the natural world.”

Just this past April, the United Nations recognized climate change as a human rights issue for all vulnerable and indigenous peoples of the world.

Climate change challenges the notion that unrestrained economic growth will always lead to a better world, Watt-Cloutier concluded. “We have to work together on science issues,

on people coming together and bringing these issues to common ground with one another. We are shared humanity after all, and if we can come together, we have a chance of getting it right instead of just watching this crisis unfold before our eyes.”

Keynote Address

Mohamed H.A. Hassan, President, African Academy of Sciences

Science, technology, and innovation all play critical roles in addressing the enormous real-world challenges that the developing world faces, Mohamed Hassan said. The needs and challenges are interrelated with opportunities and necessary actions.

The World Summit on Sustainable Development in 2002 identified water, energy, health, agriculture and biodiversity as the greatest challenges in the developing world. If the event were to take place today, climate change would surely top the list, Hassan said. All of these complex, interrelated problems are being experienced globally, but they are most severe and challenging in Africa.

Africa faces a daunting series of challenges:

- 35 of the world’s 50 least developed countries are in Africa.
- 70% of all Africans live on less than \$2 a day.
- 26.5 million Africans are infected with HIV, and 2.5 million die each year of AIDS.
- 73% of Africans do not have electricity.
- Nearly 1 million Africans are killed by malaria each year.
- 42% of Africans have no access to safe drinking water.

The United Nations’ Millennium Development Goals specifically target many of the most serious impediments to sustainable development, Hassan said. However, midway between their adoption and their target date, sub-Saharan Africa is not on track to achieve any of these goals.

There is a tremendous knowledge gap between the North and the South, with only 20% of the total production of knowledge coming from the South. There are also widening disparities in the contribution of scientific knowledge between countries within the South. South Africa and Egypt alone are responsible for half the scientific productivity of the African continent. “If we don’t build scientific capacity in the poorest of countries, not much can be achieved. There is a direct correlation between economic strength and science, technology, and innovation.”

Another serious problem for developing countries is the “brain drain,” Hassan said. Without providing adequate research facilities in the South, it will not be possible to stem the tide of the best and brightest leaving the developing world. “And without a critical mass of world-class, home-grown talent, the challenges of sustainable development will never be met.”

Africa also has some tremendous opportunities, Hassan noted. These include remarkable biodiversity and a huge capacity for producing cheap solar energy, as well as a wealth of natural resources. There is a great pool of talent in the African people, and it is important to nurture it, because new scientific fields and cutting-edge technologies are vital to global development.

Hassan emphasized the need for concrete action to address the challenges and embrace the opportunities the developing world presents. Quality education and research must be nurtured. To this end, he recommended the following:

- Reforming institutions of higher education and improving teaching methods to produce a new generation of problem-solving scientists
- Establishing international centres of excellence in sustainability science to develop innovative, efficient, simple, and affordable technologies that address basic human needs through government / private sector collaboration
- Building new science centres in countries lacking science and technology. At present, only five African countries have science centres; every country should have at least one
- Establishing links between universities and centres of excellence and science centres
- Uncovering and sharing best practices and establishing portals of best practices
- Strengthening merit-based science academies that are dynamic organizations providing distinct support to policy-makers, the scientific community and the general public

“If academics succeed in getting the word out, and science centres succeed in getting the word heard, we have a good chance of getting the world to act,” Hassan concluded.