Greetings Honorable Delegates:

It is with great pleasure that I welcome you to SRMUN XVI. My name is Sarah Donnelly, and I will be the Director for the Commission on Science and Technology for Development. Kristin McGee will be the committee's Assistant Director. This will be my fourth year at SRMUN, and my first on staff, so I am very excited about leading this committee. I am a recent graduate from Queens University of Charlotte, where I studied History and Political Science. Currently I am living and working in Washington D.C. pursuing a career in international development work. I can confidently say that my experiences with SRMUN have led me to my career path. My advice is to use your time at SRMUN to discover new things about yourself and the developing world.

So what exactly is the purpose of our committee and what is its role in the U.N.? Innovations in science and technology have exploded over the past two decades. This body was created to understand how new innovations could promote growth in the developing world. Since our committee is comprised of scientific experts, our findings are treated as high-level recommendations for ECOSOC and UNCTAD. The goal of this committee is not only to review how scientific and technological advancements will benefit individual nations but the developing world as a whole.

This year's theme is "For Humanity: Recommitting to the United Nation's Mission." As we discuss and debate science and technology issues, ask yourself how they connect to the purpose of the United Nations. How can the three topics we discuss recommit the developed world to the developing world in the context of our committee? Kristin and I picked the following topics to debate because of their importance to both the developed and developing world:

I. Genetically Modified Organisms and their Implications for Development
II. Energy and the Developing World: How Energy Science and Technology Impact the Developing World
III. Gender Inclusion in Science and Technology Training for Development

I hope that you find our background guides interesting and good starting points for your research. Also, in order to further help you prepare for the conference, we ask that each delegation submit position papers. The papers should reflect your country's position, policies, and recommendations for each of the topics. **They are due NO LATER THAN 11:59 PM OCTOBER 29, 2005 to Director-General, Brian Halma (srmundg@yahoo.com).** Position papers should also follow the format specified on the SRMUN website www.srmun.org. Please refer to the website for updates about the conference and our committee.

Please do not hesitate to email either me or Kristin if you have any questions or concerns about researching, our committee or the conference. I wish you the best of luck in preparing for SRMUN XVI and I look forward to meeting you in November.

Sarah Donnelly
Director
CSTD
cstd@srmun.org

Kristin McGee
Assistant Director
CSTD
cstd@srmun.org

Brian Halma
Director-General
srmundg@yahoo.com

History of the Commission on Science and Technology for Development

"Science is a powerful means of understanding the world in which we live and it is also capable of yielding enormous returns that directly enhance socio-economic development and the quality of our lives."[1]

The Commission on Science and Technology for Development (CSTD) was created in 1992 as a subsidiary body of the United Nations Economic and Social Council (ECOSOC). Its mission is to provide both the General Assembly and ECOSOC with scientific and technological expertise in order to ensure effective and informed decision making relating to issues about development. After its first meeting in New York City in 1993, all subsequent meeting have been held annually each May in Geneva, Switzerland, as outlined in ECOSOC *Resolution 2002/37* and reaffirmed in draft *Council Resolution 2003/31* of June 4, 2003. The seventh session of CSTD will be held in Geneva Switzerland May 2005.

Recognizing the importance of scientific and technological knowledge in policy making for the developing world, one of CSTD's main goals has been the promotion of its Science and Technology Diplomacy Initiative. The Initiative works with other international humanitarian and scientific organizations and UNCTAD in collaboration with the Science, Technology and Innovation Program of Harvard University's Kennedy School of Government to increase scientific and technological knowledge for developing nation's diplomats and representatives to make informed decisions on issues involving science and technology. Therefore, the CSTD hopes to create a more informed global community on the scientific and technological implications of trade negotiations, international treaties, protocols and initiatives.

Over the past thirteen years, CSTD has discussed a number of important scientific and technological issues relating to development. In recent years, it has specifically focused on promoting the application of science and technology to meet the Millennium Development Goals (MDGs), in which it had a panel meet in October 2004 in Vienna, Austria, to further discuss this issue. The CSTD has acknowledged that science and technology play a central role in countries achieving their MDGs and has continued to work with developing nations to encourage increased expertise in these areas.[2] This commitment to increasing science and technology capabilities in developing nations can be seen in the report the CSTD submitted to the Economic and Social Council: Promoting the application of science and technology to meet the development goals contained in the Millennium Declaration[3] which was recommended for adoption by ECOSOC.[4]

Currently CSTD has thirty-three member states comprised of eight African states, seven Asian states, four Eastern European states, six states from Latin America and the Caribbean and eight states from Western Europe and other regions. Each state is elected for a four year term by ECOSOC on a rotating two year election cycle. Each CSTD representative is nominated by their home government and should be highly knowledgeable about science and technology. It is important for the representatives to be knowledgeable since "the Commission was established to provide the General Assembly and the Economic and Social Council high-level advice on relevant issues" to encourage well-reasoned and responsible decision making.[5] Within the CSTD there is a bureau composed of a chair and four vice-chairs which takes responsibility for the activities during the inter-sessional period.[6]

---

[1] *Science for the Twenty-First Century: A New Commitment.* The World Conference on Science. 26 June-1 July 1999 http://www.unesco.org/science/wcs/eng/overview.htm

[2] "Commission on Science and Technology for Development 7th Session, 24-28 May 2004." StDev: Science and Technology for Development. UNCTAD 2004.

[3] Draft Resolution 7. *Promoting the application of science and technology to meet the development goals contained in the Millennium Declaration.* United Nations Economic and Social Council.

[4] E/2004/31. *Promoting the application of science and technology to meet the development goals contained in the Millennium Declaration.* United Nations Economic and Social Council.

[5] Commission on Science and Technology for Development: Mandate and Background." StDev: Science and Technology for Development. UNCTAD 2004. http://stdev.unctad.org/unsystem/cstd/index.html

[6] "Commission on Science and Technology for Development: Membership." StDev: Science and Technology for Development. UNCTAD 2004. http://stdev.unctad.org/unsystem/cstd/membership.html

The current member states of the CSTD are:
ANGOLA, AUSTRIA, BANGLADESH, BELARUS, BELGIUM, BOLIVIA, BRAZIL, CHILE, CHINA, DEMOCRATIC REPUBLIC OF CONGO, ETHIOPIA, GAMBIA, GERMANY, GREECE, INDIA, IRAN, ITALY, JAMAICA, JORDAN, LESOTHO, MOROCCO, OMAN, PAKISTAN, PARAGUAY, PREU, ROMANIA, RUSSIAN FEDERATION, SIERRA LEONE, SLOVAKIA, SUDAN, TURKEY and UNITED KINGDOM.[7]

[7] Ibid.

I. Genetically Modified Organisms and their Implications for Development

"Biotechnology provides powerful tools for sustainable development of agriculture, fisheries and forestry, as well as the food industry. When appropriately integrated with other technologies for the production of food, agricultural products and services, biotechnology can be of significant assistance in meeting the needs of an expanding and increasingly urbanized population in the next millennium."[8]

Introduction

The Convention on Biological Diversity defines biotechnology as: "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use."[9] Biotechnology can be understood as the many different techniques and applications of science that are commonplace in agricultural and food production, or more narrowly as only the genetic altering techniques.[10] The rapid development of these genetic biotechnologies has led to a debate over genetically modified organisms (GMOs). Over the past twenty years, GMOs have significantly altered the production of agricultural and animal products, the forestry and fishery industries, and even vaccine development. Today a debate continues over the potential benefits and risks GMOs pose for the developing world.

While the issue of GMOs may be new, the idea of blending technology and agriculture to help development is not. Starting in the 1960s, the Green Revolution transformed developing nations' agricultural techniques and seed development as a tool to stop world hunger. The Green Revolution linked agriculture and technology for the first time in the developing world. By the 1990s, it was estimated that 40 percent of developing country farmers were using seeds that had been developed in the Green Revolution.[11] While the Green Revolution increased crop yields and introduced new chemical pesticides, fertilizers and irrigation techniques, it did not eliminate hunger and the issue of food security. This is why many are looking towards new technologies, such as GMOs, to start a radical second Green Revolution that will address developing nations' current needs. The Agricultural Department of the United Nations Food and Agricultural Organization recognizes "the potential contribution of biotechnologies for increasing food supply and overcoming food insecurity and vulnerability" and supports efforts that help make such technologies available to the developing world.[12]

Scientists have been genetically modifying crops and livestock for years. However, the creation of transgenic organisms through revolutionary molecular biology techniques is what has made GMOs so controversial. GMOs are made through recombinant DNA technology that combines genes from different organisms, creating a new organism not found in nature.[13] The genes inserted in the organism can be from the same species, a different species, or even a different kingdom. Once that process is complete, the new organism is considered "transgenic." Because this technology is relatively new, questions about the effects on humans, animals and the environment have all been raised. Certain manufacturers and even countries have banned the use of GMOs. Not only are issues raised about the safety of GMOs, but also whether the developing world should even have access to biotechnology and to what degree. For this reason, the Commission on Science and Technology for Development selected this, as one of many biotechnology issues, to discuss during its intercessional period from 1999-2001, and continues to discuss it today.

---

[8] "FAO Statement on Biotechnology." Food and Agriculture Organization of the United Nations. http://www.fao.org/biotech/stat.asp

[9] Ibid.

[10] Ibid.

[11] Peter Rosset. "Lessons from the Green Revolution: Do We Need New Technology to End Hunger?" Food First: Institute for Food and Development Policy. March/April 2000. http://www.foodfirst.org/node/230

[12] "FAO Statement on Biotechnology." Food and Agriculture Organization of the United Nations. http://www.fao.org/biotech/stat.asp

[13] J.R. Webster. "GM – Food for Thought." Animal Feed Manufacturers Association. http://www.afma.co.za/AFMA_Template/1,2491,7105_1839,00.html

Role of the United Nations

In a period of six years between 1996 and 2002, the hectares of transgenic plants increased from 2 to 59 million.[14] With the commercialization of GM crops and large-scale production of GMOs in the past few years, numerous organizations within and outside the U.N. have discussed the implications of GMOs for development. Overall the United Nations' bodies have been supportive of the potential that GMOs provide for the developing world, but UN affiliated bodies also encourage balanced research and development.

Dialogue concerning GMOs has been ongoing since the early 1980s. In 1983, RES 8/83, the *International Undertaking on Plant Genetic Resources*, of the Food and Agriculture Organization of the United Nations was signed in order to "ensure that plant genetic resources will be explored, preserved, evaluated and made available for plant breeding and scientific purposes."[15] Since then there have been numerous revisions of the undertaking culminating in the adoption of the *International Treaty on Plant Genetic Resources for Food and Agriculture* by the Food and Agriculture Organization (FAO) conference on November 2001.[16] This document is significant because it not only promotes the use of plant genetic resources for sustainable agriculture and food security, but also encourages the sharing of benefits from such technology.[17] For twelve years, the FAO Commission on Genetic Resources for Food and Agriculture has received progress reports on international developments in plant biotechnology to discuss the issues of safety, codes of conduct and how access to agricultural biotechnologies might benefit poorer farmers.[18]

The CSTD has a strong interest in addressing the issues surrounding GMOs and their implications for development in order to further its goals outlined in its mandate. In May 1999, the CSTD released its *Panel Meeting on Biotechnology for Food Production and Its Impact on Development* in which Commission members, other biotechnology experts and members of United Nations' agencies recommended "the international community should support developing countries in their efforts to develop and diffuse biotechnology to provide food for their population."[19] The Commission is also diligently working towards promoting and applying science and technology to achieve the Millennium Development Goals. A strong focus has been placed on the first goal, which is to eradicate extreme poverty and hunger through the use of science and technology. Rural poverty is related to low agricultural productivity. Therefore, reducing hunger by increasing agricultural output, one of the potential benefits of GM crops, can also reduce rural poverty. The use of GMOs in food production and agriculture could significantly accelerate the achievement of this goal.

The Debate over GMOs

852 million people in the developing world are malnourished.[20] Those who suffer from acute, chronic or hidden hunger are more vulnerable to crises and hazards such as natural or manmade disasters and insecure right to land. Two causes of hunger and malnourishment are limited nutrition and low food productivity. Those in favor of introducing GMOs to developing countries argue that the benefits from biotechnology, specifically derived from transgenic plants, will have a major impact on reducing hunger and malnourishment. Developing agriculture through biotechnology (i.e., GM crops) is one method to reduce hunger, increase food productivity and stimulate local economies. "Poor rural producers in developing

---

[14] "Regulating GMOs in Developing and Transition Countries." Electronic Forum on Biotechnology in Food and Agriculture. April 2003. http://www.fao.org/biotech/C9doc.htm

[15] Resolution 8/83. *International Undertaking on Plant Genetic Resources*. Food and Agriculture Organization of the United Nations.

[16] "International Undertaking on Plant Genetic Resources." Commission on Genetic Resources for Food and Agriculture. http://www.fao.org/ag/cgrfa/IU.htm

[17] The Treaty came into force in June 29 2004, ninety days after forty governments had ratified it.

[18] Charles Spillane. "Recent Developments In Biotechnology As They Relate to Plant Genetic Resources For Food and Agriculture." Commission on Genetic Resources for Food and Agriculture. 1999, pp. 3-4.

[19] E/CN.16/1999/3. *Panel Meeting on Biotechnology for Food Production and Its Impact on Development*. Commission on Science and Technology for Development.

[20] UN Millennium Project 2005. *Halving Hunger: It Can Be Done: Summary version of the report of the Task Force on Hunger*. The Earth Institute at Columbia University, New York, 2005. http://www.unmillenniumproject.org/documents/HTF-SumVers_FINAL.pdf

countries depend directly or indirectly on productivity increases in agriculture to rise above poverty… biotechnology applications may help poor farmers increase their productivity."[21] Supporters of GMOs believe that transgenic crops will be able to meet future food needs as the world's population increases. Some have even claimed that biotechnology will bring a second green revolution.[22]

The UN Human Development Report argued that biotechnology, including GMOs, would allow for the socio-economic advancement of developing countries.[23] GMOs can create more nutritious, higher yielding crops due to genetic plant resistance to drought, disease and pests. The global insecticide market is estimated to cost $8 billion USD each year. Developing crops that are genetically resistant to pests could reduce the application of pesticides, thus positively impacting the environment and economies of developing countries.[24] Trials of insect resistant cotton in South Africa's Makatini Flats in Kwa-Zulu Natal on small-scale farms found there was a 30% increase in production without the use of pesticides.[25] GMOs could save money spent on pesticides, while creating more eco-friendly ways to resist pests and increasing output.

Humans can directly benefit from GMOs through the production of transgenic plants fortified with vitamins, and even vaccines. Rice is part of a staple diet for people living in Southeast Asia. With 1-2 million children dying annually due to vitamin A deficiency, transgenic rice with higher vitamin A content could significantly impact life expectancy of children in the region.[26] Transgenic plants may also be a low-cost effective way to distribute vaccines in developing countries: "The potential feasibility of producing oral vaccines in transgenic plants has now been demonstrated for diseases such as cholera and hepatitis B."[27] Therefore GMOs not only provide benefits for agriculture and the economy, but human health as well.

While many of the main U.N. bodies support developing GMO technology, including the FAO, there is growing opposition from individuals, organizations, and even certain nations. Those who oppose GMOs question the potential risks to humans and the environment, and the reality of the potential benefits. Some groups simply want more testing and research. Biotechnology did not eliminate hunger during the Green Revolution, what is the possibility that GMOs could do so today? Others want to totally ban GMOs from the food and agricultural supply. Certain members of the European Union are particularly against the use of transgenic organisms to enhance food products. The populations of both Germany and Great Britain are especially against GMOs: "tomato paste made with genetically modified tomatoes had to be taken off the shelves in Great Britain."[28] Many times, it is public pressure that has influenced these states to take action against GMOs. In response, many developed nations have established their own regulatory agencies to research the potential risks, and benefits of GMOs. For that reason in 1990, the U.S. Department of Agriculture established the Biotechnology Risk Assessment Research Grants Program to assist other federal regulatory agencies to make decisions about the safety of introducing GMOs into the

---

[21] Joel Cohen, et al. *National Agricultural Biotechnology Research Capacity in Developing Countries.* Agricultural and Development Economics Division, The Food and Agriculture Organization of the United Nations. ESA Working Paper No. 04-14. June 2004, p. 1. ftp://ftp.fao.org/docrep/fao/007/ae069e/ae069e00.pdf

[22] Paul F. Lurquin. *The Green Phoenix: A History of Genetically Modified* Plants. New York: Columbia University Press. 2001, p. 104.

[23] Edgar J. DaSilva. "GMOs and Development." *Electronic Journal of Biotechnology*. 2002. http://www.ejbiotechnology.info/content/issues/01/

[24] Charles Spillane. *Recent Developments In Biotechnology As They Relate to Plant Genetic Resources For Food and Agriculture.* Commission On Genetic Resources for Food and Agriculture. 1999, p. 16.

[25] J.R. Webster. "GM – Food for Thought." Animal Feed Manufacturers Association. http://www.afma.co.za/AFMA_Template/1,2491,7105_1839,00.html

[26] Charles Spillane. *Recent Developments In Biotechnology As They Relate to Plant Genetic Resources For Food and Agriculture.* Commission On Genetic Resources for Food and Agriculture. 1999, p. 16.

[27] Charles Spillane. *Recent Developments In Biotechnology As They Relate to Plant Genetic Resources For Food and Agriculture.* Commission On Genetic Resources for Food and Agriculture. 1999, p. 17.

[28] Paul F. Lurquin. *The Green Phoenix: A History of Genetically Modified* Plants. New York: Columbia University Press. 2001, 109.

environment.[29] Therefore, it is just as important that the developing world has an opportunity to make informed decisions about the risk factors of GMOs.

However, there is concern that developing nations may not have the resources to do the same in their countries. By not being able to establish such regulatory agencies, developing countries could be putting their populations at risk. Other GMO opponents argue that the science still needs to be researched and tested more fully because the impact of GMOs is not yet completely known. Those who most vocally oppose GMOs are usually concerned about its impact on humans. One of the main concerns is the allergenic threat that transgenic products pose. In 1996, scientists found that transgenic soybeans had a similar storage protein found in Brazil nuts, therefore posing as a potential allergenic risk for people allergic to nut proteins.[30] This revealed the potential for allergenic properties to be transferred during genetic engineering. There are more concerns over creating possibly anti-biotic resistant genes within plants, and the impact that would have on humans. The contamination of non-transgenic crops by transgenic pollen and patent infringement are also potential and real legal risks.[31]

When introducing any new agent into the environment, transgenic or not, biodiversity is at risk. Unfortunately, the impact of new biological elements in the environment may take years or decades to be fully understood.[32] While bio-herbicides and bio-pesticides may be developed from biotechnology, GMO opponents argue the environmental risks outweigh these benefits. Already environmental effects have been seen in the wild monarch butterfly population in North America. Genetically modified Bt Maize pollen was found poisonous to monarch butterflies that fed on milkweed plants that grew close to the maize crop. Other Bt maize varieties, modified as bio-herbicides, secreted toxins in soil that effected soil insects that were not threatening to the crops.[33] Perhaps there are more environmental risks that have not been fully revealed that could be more threatening to local eco-systems and humans.

Mass producing genetically modified crops could lead to a decrease in biodiversity, thus reducing gene flow putting plants at risk for certain diseases. If transgenic crops dominate the market, then wild species of plants may disappear due to hybridization. Genetically engineered plants may hybridize with wild plants eliminating the wild population, creating weeds that may be hard to control, or even developing new viruses.[34] If the majority of plants grown are genetically modified then what will be the consequences?

Future Challenges

One of the largest problems aside from the controversy surrounding GMOs is the ability for developing countries to obtain the technology and capital necessary to create biotechnology programs. Current investment in biotechnology is focused in the private sector of developed countries. This means that many developing countries do not have access to the latest agricultural biotechnology innovations. In addition, because the developed world has a monopoly on transgenic plant technology, many of the crops being researched and developed are not those that are important for food production in many developing countries. The majority of transgenic crop plantings are herbicide-resistant soybean, insect-resistant maize and genetically improved cotton.[35] Those crops were developed for economic reasons: to reduce input and labor costs in large-scale production systems, not to increase food quality or availability.[36] This raises a serious question of whether the introduction of GMOs in developing countries would actually have any

---

[29] Paul St. Amand. "Risks Associated with Genetically Engineered Crops." *Genetically Modified Crops: Their Development, Uses, and Risks*. Ed. G.H. Liang, et al. New York: Food Products Press. 2004, p. 351.
[30] Ibid., p. 354.
[31] Ibid., p. 353.
[32] "FAO Ethics Series: 2 Genetically Modified Organisms, Consumers, Food Safety, and the Environment." Food and Agricultural Organization of the United Nations, Rome 2001. http://www.fao.org/documents/show_cdr.asp?url_file=//docrep/003/x9602e/x9602e00.htm
[33] Ibid.
[34] "International Transfer of GMOs: The Need for a Biosafety Protocol." 2nd Session of the Intergovernmental Committee on the Convention on Biological Diversity. July 1994. http://www.grain.org/briefings/?id=8
[35] Louise O. Fresco. "A New Social Contract in Biotechnology." *Agriculture 21*. May 2003. http://www.fao.org/ag/magazine/0305sp1.htm
[36] Ibid.

effect on food production or whether GMO technology would be used to create more cost-effective farms for the developed world. If the developing world is included in the transgenic technology fold, will their role only be to help the developed world? Currently, 80 percent of employment in developing countries is tied to agriculture. With the increasing influence multi-national corporations play in developing countries, the introduction of GMOs commercially could substantially impact jobs and subsistence farmers. It is not certain how the technology will make its way to the farming poor of the developed world. Technology transfer plays an important role in the ability for the developing world to develop its own biotechnology programs.

Another challenge is developing nations' ability to properly regulate GMOs through a legislative framework, regulatory assessments, transparency and public involvement and risk assessment framework. The resources it takes to develop GMOs and an appropriate regulatory framework are in direct competition with other challenges that face developing countries. Because developing nations lack regulatory frameworks, the developed world has freely tested and developed GMOs in developing countries in Africa and Latin America. A U.S. multi-national corporation tested its "Flavr Save" genetically modified tomato in Mexico and Chile before it was released on the U.S. market.[37] Is this a form of technology transfer or risky behavior?

Conclusion

As science and technology advances so do the opportunities for the developing world. It is the goal of the Commission on Science and Technology for Development to link the benefits of scientific and technological innovations to the developing world. Genetically modified organisms have great potential for development. Nevertheless, as with any new scientific discovery, there are many questions that remain about the safety and real benefits of GMOs for development. While we discuss all the implications of GMOs for development, ask yourself these questions: What are the benefits/risks for my country? Can this technology be monitored within the U.N. or even my country? Will this bring the second Green Revolution, or will this technology be used against the developing world? Are there issues that have not even been raised? The debate over GMOs proves that there are no easy solutions to the problems that face the developing world, but there can be active measures taken to address them.

II. Energy and the Developing World: How Energy Science and Technology Impact the Developing World

> *"Many paths which will bring people to new methods of receiving and transmitting energy have already been found, it only remains to turn them into broad highways."*[38]

Introduction

The advancement of energy science and technology in the developing world is one of the core issues that the Commission on Science and Technology for Development (CSTD) works to resolve. The majority of developing nations do not have the technological or economic means to correctly implement new variations of energy science causing a rise in the inefficient use of current sources of energy.[39] Typical energy sources used by developing nations are often inefficient and environmentally detrimental, leading to increased pollution and taxes for energy related products.[40] It is important to increase the technology available to developing nations while also establishing environmental standards and guidelines to ensure efficient energy use.

---

[37] "International Transfer of GMOs: The Need for a Biosafety Protocol." 2nd Session of the Intergovernmental Committee on the Convention on Biological Diversity. July 1994. http://www.grain.org/briefings/?id=8

[38] Zhores Alferoz (2003). *Russian Academic Comments on award of Global Energy prizes.* http://www.ge-prize.com/events/publications/view.html?id=3668

[39] "A Trillion-Dollar Appetite for Electricity." International Association for Energy Efficient Lighting. January, 1993. http://195.178.164.205/iaeel/IAEEL/newsl/1993/ett1993/NatGlob_e_1_93.html

[40] Ibid.

The CSTD's mandate states that the Commission should act as a forum to examine the implications that science and technology have on development. There is also a need to advance the understanding of science and technology policies.[41] The development of energy science and technology is important for developing countries because it establishes infrastructure leading to future development and advancement. It is imperative to implement much-needed technology to ensure future growth and technological development. Energy provides the means for many types of development. If the implementation of proper energy technology occurs, then agriculture, manufacturing, health and education will all benefit.[42]

One goal is to ensure that developing nations have access to the technology that allows them to improve their energy sector. Without this technology, developing nations find it difficult to progress, leading to potential economic stagnation and higher prices for current energy sources. The common energy networks, such as electricity and gas, can be extremely expensive. The expense is much greater if the region does not have an initial foundation of an energy source.[43] In order to provide such technology, the CSTD provides in-depth reports and analyses to the General Assembly and the Economic and Social Council (ECOSOC).[44] This information can then be used to encourage proper allocation of resources and funding to developing nations.

Improving energy science can contribute to the success of the Millennium Development Goals (MDGs). Although no goals specifically address the development of energy science, energy science is very important to the success of sustainable development, the reduction of diseases and the improvement of living standards.[45] Improving the energy science available in a developing country provides more opportunity for development in other areas. If developing countries had modern energy technology, there could be an increase in fuel available to cook food, which in turn helps eradicate hunger.[46] Similarly, the technology used to promote a higher quality and availability of energy sources could lead to healthier living standards, a very important issue to the United Nations.[47] The positive benefits of access to new energy technologies, such as higher living standards, can help the UN achieve its Millennium Development Goals.

Sustainable Energy Sources

An issue of importance to the CSTD when recommending what measures to take to promote energy science and technology is sustainability. To implement a new source of energy in a developing country requires planning to ensure that the energy source is reliable and affordable. In order to be reliable, the energy source should not be a scarce resource. Instead, it should be sustainable, and preferably renewable. Sustainable energy is any form of energy that is available in abundance and not in danger of running out. Sustainable energy sources have two categories: renewable and non-renewable.[48] Some forms of renewable energy are wind, tidal/wave, solar, biomass, hydroelectric and geothermal.[49] These forms of energy can be more expensive to develop than non-renewable sources. They are advantageous, however, because there is a never-ending supply of these forms of energy.

The preferred form of sustainable energy is renewable, which can be quite expensive compared to non-renewable forms such as coal and gas. Not all renewable forms of energy are feasible for developing

---

[41] "Mandate and Institutional Background." Science and Technology for Development. 2004. http://stdev.unctad.org/unsystem/cstd/index.html

[42] "Energy, Transport, and Atmosphere" Un Department of Economic and Social Affairs. July 2005. http://www.southerncompany.com/gapower/lakes/how.asp?mnuOpco=gpc&last_link_type=frame_never

[43] "A Trillion-Dollar Appetite for Electricity." International Association for Energy Efficient Lighting. January, 1993. http://195.178.164.205/iaeel/IAEEL/newsl/1993/ett1993/NatGlob_e_1_93.html

[44] "Mandate and Institutional Background." Science and Technology for Development. 2004. http://stdev.unctad.org/un/uncstd.html#mandate

[45] *Millennium Development Goals.* The United Nations. 2000.

[46] "UNDP & Energy for Sustainable Development." United Nations Development Programme. December 2004. http://www.undp.org/energy/docs/UNDP_energy_brochure.pdf

[47] Ibid.

[48] "Power for a Sustainable Future." The State of Queensland Department of Education. 2000. http://www.sustainableenergy.qld.edu.au/sources/renewable.html

[49] Ibid.

nations. The climate and geography must contain certain conditions in order to have properly functioning electricity generating plants. The form of renewable energy that is the most easily accessible is solar energy. This form of energy uses solar panels to obtain energy from the sun.[50]

A source of renewable energy that is very promising is hydroelectric power. Hydroelectric power is dependent on a water source that creates kinetic energy which is converted to electricity by a turbine.[51] Most hydroelectric power is generated by water flowing downhill, although tidal waters can be used to create hydroelectric power.[52] Hydroelectric power is an effective means of acquiring energy and is not affected by the prices of fossil fuels, such as coal, natural gas and oil. However, it can have detrimental effects on the environment related to erosion. Hydroelectric power plants also can disrupt the natural aquatic ecosystem.[53] One potential problem with hydroelectric power is that certain conditions must be met in order to have a functioning hydroelectric power plant. The first condition to be considered is the amount of water available and the speed in which it travels.[54] If water travels too slowly then it would not be advisable to establish a hydroelectric power plant at that location. The second condition is the cost of generators and turbines.[55] The lack of money is difficult to overcome, as the implementation of generators and turbines is very expensive. Therefore, the formation of hydroelectric power plants may be difficult in developing countries.

Energy derived from the wind is an exceptionally environmentally clean energy source. Wind electricity generation converts kinetic energy into electrical or mechanical energy for use.[56] Much like hydroelectric energy, it uses a turbine to convert the kinetic energy into electricity or mechanical energy, but is typically less harmful to the environment. According to the American Wind Energy Association, one ten kilowatt turbine can annually produce around 10,000 kilo Watt-hours (kWh).[57] This is enough electricity to power more than five hundred households.[58] This form of energy is extremely effective when harvested off shore in relatively shallow water. However, the main problem with wind energy is that the wind is not a guaranteed weather phenomenon. The minimum wind speed for a small turbine is typically 9 miles per hour. Therefore, much larger turbines have a greater chance of not reaching ideal wind speeds, reducing efficiency.[59]

One nonrenewable source of energy that is constantly under scrutiny is nuclear power. Nuclear power has proven to be very efficient and useful for numerous non-energy means. Although nuclear energy is nonrenewable, there is no indication that the world's sources of uranium will deplete in the next thousand years. The International Atomic Energy Agency (IAEA) is a strong advocate for the expansion of nuclear energy use. A few alternative uses of nuclear energy that the IAEA promotes can aid with development.[60] One such use is desalination, which is the removal of salt and other chemicals from water in order to make it potable.[61] If this technology were brought to developing countries, the results would be immense. Using nuclear energy to decontaminate pre-existing sources of water would greatly reduce water-borne diseases

---

[50] Ibid.
[51] "How Plants Work." Georgia Power. http://www.southerncompany.com/gapower/lakes/how.asp?mnuOpco=gpc&last_link_type=frame_never
[52] Ibid.
[53] Ibid.
[54] "Is a Micro-Hydroelectric System Feasible to You?" U.S. Department of Energy. http://www.eere.energy.gov/consumerinfo /factsheets/ab2.html
[55] Ibid.
[56] "Wind Energy Basics." American Wind Energy Association . 2005. http://www.awea.org/faq/tutorial/wwt_basics.html
[57] Ibid.
[58] Ibid.
[59] Ibid.
[60] *IAEA Activities in Assisting Developing Countries to Implement Agenda 21: A Review (1993-2001*). International Atomic Energy Agency. 2002. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=166181&tools=bot
[61] *Water Resources and Freshwater Ecosystems.* Earth Trends. 2003. http://earthtrends.wri.org/pdf_library/country_profiles/wat_cou_682.pdf

and improve health, both important to the Millennium Development Goals. However, there is no safe method of disposing of the nuclear waste which remains toxic for centuries.

These are just a few examples of types of renewable and nonrenewable energy sources. The most important benefit of renewable energy sources is the low impact it has on the environment. While there are no perfect energy sources, there are marked advantages of using renewable energy instead of non-renewable energy. Renewable forms of energy tend to derive power from natural sources instead of minerals and chemicals. Though renewable energy sources can have detrimental effects on the environment, its negative environmental impact is greatly lessened compare to non-renewable sources. This is not to say that renewable sources should not be improved in order to lessen any potential side effects on the environment, it is just more environmentally friendly than non-renewable sources. Another benefit of renewable forms of energy is that a source can often be found locally. A country that has numerous lakes and rivers could consider the use of hydroelectric power to provide basic electricity. This would greatly reduce costs for any additional sources of electricity that were brought to the nation as a basic infrastructure would be present.

Weighing the Costs and Benefits

Energy sources are constantly under scrutiny due to the effects they have on the environment. Coal remains one of the most utilized sources, with the worldwide consumption being over 60,000,000 Gigawatt hours (GWh).[62] Although coal has observable negative effects on the environment, it remains one of the most easily attainable sources of energy. Recommending cleaner energy sources is a goal to strive for in order to promote environmentally safe technological developments. Regardless of the difficulty in the obtainment of an energy source, technological growth and development must be encouraged. Developing nations should also be advised on how to be environmentally conscious.

One of the goals of promoting energy science and technology in developing nations is that energy should be affordable and efficient. Implementing technology presents a considerable initial financial commitment. The end result should be affordable energy tailored to the specific needs of the community.[63] Therefore, economic support must encourage affordable and efficient energy sources.

The primary disadvantage to improving energy science used in developing countries is the cost. It is very expensive to develop and maintain, and to expand the capacity needed to power developing nations. Many newer forms of renewable energy sources are costly. Developing nations cannot afford this alone and monetary aid from Non-Governmental Organizations is often required. Monetary aid from individual governments is important for the advancement of energy sciences in developing nations. The donations could significantly contribute to the success of the technological implementation programs. Italy, for example, has pledged over $500,000 to aid with the work of the CSTD.[64]

Such donations are vital to the success of the technological development for developing countries. Although establishing sources of energy in developing countries is an expensive endeavor, it will have significant results. Providing developing countries with a safe, renewable form of energy is a goal in which all nations should participate. The advancement of energy science can promote numerous other advancements such as health and education, which can lead to economic development. If a developing country has access to more technologically advanced energy sources, it can improve the lives of the citizens. The effects of new energy sources on women and children in rural villages are positive. Since women and children in rural villages typically prepare food and obtain water, any development to decrease

---

[62] *Evolution of Electricity Generation by Fuel from 1972 to 2002.* International Energy Agency. 2002. http://www.iea.org/Textbase/stats/countryresults.asp?country=World&SubmitA=Submit

[63] *Energy and Development Report 2000: Energy Services for the World's Poor*. The World Bank. 2000. http://www.worldbank.org/html/fpd/esmap/energy_report2000/index.htm

[64] "UNCTAD to Create Science & Technology Network in Developing Countries" United Nations Conference on Trade and Development. February 6, 2005. http://www.unctad.org/Templates/webflyer.asp?docid=5964&intItemID=1528&lang=1

the time spent preparing food and water allows the women and children to pursue other activities.[65] This could promote health and productivity within the entire community.[66]

Having well developed energy sources could also decrease the risk of disease.[67] The use of energy sources to make water and food sanitary can greatly decrease the occurrence of bacteria found in food and water sources. An estimated 1.1 billion people worldwide do not have access to clean drinking water, a significant cause of illness found especially in developing nations.[68] The improvement of technology in developing nations ensures that all people have access to clean drinking water preventing disease and needless deaths. One of the Millennium Development Goals is to reduce the number of people without access to clean water by half in the next ten years.[69]

The need of energy technology is great and widespread in the developing world. Therefore, not all communities in need will be able to gain the resources they need. There are other options that a developing nation could pursue in order to gain the technical and financial assistance to develop their energy sectors. One option is to request aid from a multi-lateral institution such as the World Bank that might provide technical assistance, grants or loans. The World Bank has focused its works on helping developing nations reach the standards set for in the Millennium Development Goals.[70]

Important factors such as geography and weather conditions will impact what kinds of energy technology will be successful in certain countries. Hydroelectric power would not be practical or feasible for areas with severe droughts. However, solar power may better address the needs and resources available certain areas. If the individual needs of the community are considered, then the energy source will typically be the more effective and efficient to encourage long-term technological growth

Future of Development

The expansion of energy science is crucial to the success of developing countries. The implementation of new energy technology in developing nations can be costly, but the effects are tremendous. It is important that technological developments for developing nations are widespread. Energy science is constantly changing and advancing in order to produce energy that is not detrimental to the environment and will improve the lives of those that receive the energy. In order for a developing country to be active in international economic markets, the country must first have the ability to provide its citizens with basic amenities such as clean food and water. It is hoped that when a nation establishes an energy source that continuous development will follow.

New technological advancements in developing nations do not only provide a consistent source of energy, but also provide up-to-date energy sources which could lead to further technological advancements. It is important to provide developing countries with sources of energy that are reliable, affordable and up-to-date. A developing country should receive technologically advanced energy sources in order to encourage future development. If the energy source is advanced, then the country has a better chance to advance in other areas.

III. Gender Inclusion in Science and Technology Training for Development

---

[65] "UNDP & Energy for Sustainable Development" United Nations Development Programme. December 2004. http://www.undp.org/energy/docs/UNDP_energy_brochure.pdf

[66] Ibid.

[67] Ibid.

[68] "Water Supply, Sanitation, and Hygiene." The World Health Organization. http://www.who.int/water_sanitation_health/hygiene/en/index.html

[69] "The UN Works for Freshwater." The United Nations. http://www.un.org/works/sustainable/freshwater.html

[70] "What is the World Bank." The World Bank. http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/0,,contentMDK:20040558~menuPK:34559~pagePK:34542~piPK:36600~theSitePK:29708,00.html

"Science and technology, which are the indisputable foundations of political and economic power in our modern world, are still marked by various layers and dimensions of deep-seared gender inequality that works mostly to the disadvantage of women."[71]

Introduction

Science and technology have brought many changes to the developing world. Accesses to new medicines, agricultural technologies and new forms of communication have increased the quality of life for many, though not all. While new technologies have brought benefits, there have been disadvantages as well. Increased pollution, the development of weapons of mass destruction, and social problems such as increased crime and unemployment have resulted from the changes being brought to the developing world.[72] The UN Commission on Science and Technology for Development's Gender Advisory Board describes the responsibility of the science and technology community in promoting equal technological development: "It must be an objective of science and technology policy to maximize the benefits to be derived from science and technology, and to minimize its harmful effects, for all members of society."[73] The Gender Advisory Board's commitment to this goal is exemplified by its dedication to promoting gender inclusion in science and technology training for development. By making new technologies and technological training available to all members of society, developing countries can look forward to meeting short term and long term development goals.

It has already been acknowledged that the advancement of women in developing countries will be crucial to achieving the millennium development goals, as well as obtaining sustainable development.[74] The CSTD recognizes the important role that women play in the future success of their countries, specifically through their inclusion in science and technology training. This is why the Gender Working Group of the CSTD called for the creation of the Gender Advisory Board. The board was founded in 1995 with a goal "to provide advice to UNCSTD, national governments and the UN system on the gender dimensions of science and technology policy."[75] The Gender Advisory Board is the main organization within the U.N. that addresses issues of gender equality in science and technology development.

Gender: The Context in Committee

While the definition of gender is usually interpreted as how certain issues affect women, this committee uses this term to include men as well. Both men and women play an important role in science and technology development. In developing countries, men and women face particular challenges in receiving science and technology training and education. However, because women are included the least in science and technology activities for development, the main focus of this committee will center on their issues.

The Issue

There are two main factors that prevent gender equality in science and technology training: educational and socio-cultural. These two factors can work independently, but usually work together, affecting both men and women. For many in the developing world, access to education is limited. This especially holds true for females. Socio-economic factors, as well as the sheer availability of educational opportunities, limit both male and female likelihood of receiving science and technology training. When training is available, women are usually not encouraged to participate due to stereotypes about women's roles. Females are also more likely to drop out of school due to domestic chores, marriage and pregnancy. Therefore, even if access to education is available, getting females in the classrooms still remains a challenge.

---

[71] "Gender, Science and Technology." CODESRIA. http://www.codesria.org/Archives/Training_grants/gender/gender03.htm

[72] *Declaration of Intent.* The Gender Working Group: United Nations Commission on Science and Technology for Development. http://gab.wigsat.org/gwg.htm

[73] IBID.

[74] "The Millennium Development Goals: Gender Issues." UNIFEM. http://www.unifem.org/gender_issues/millennium_development_goals/at_a_glance.php

[75] "Gender Advisory Board of UNCSTD." United Nations Commission on Science and Technology For Development. April 2005. http://gab.wigsat.org/uncstd.htm

The second obstacle of getting females in the classroom is encouraging them to study science and technology. Overall, educational investments are more often reserved for boys, particularly in science and technology fields. Because of socio-cultural attitudes, young girls do not view themselves as becoming scientists and are not encouraged to pursue interests in scientific fields. This is true not only in the developing world, but the developed world as well.

Typically, men have had the advantage in science and technology fields and education. Women have had to face many obstacles at different levels of science and technology from access to primary education to studying certain fields at university, to being allowed to perform certain types of research. The leaky pipeline concept describes how women have been slowly erased from the formal science and technology system starting at primary education through the policy making level. There have been five major barriers or "leaks" in the pipeline identified: socio-cultural attitudes, education, academic appointments, science and technology professions and science and technology development and transfer.[76] A current example of a "leak" can be seen in the number of tenured science faculty at American universities, which is significantly lower for women than men. Because women perform different roles in society, they have different insights than men. Their different experiences and expectations "will enrich the total pool of talents, insights and motivations, and increase the probability that science will serve the needs of all humanity."[77] Therefore, it is important for all countries, not just developing ones, to focus on creating gender equity in science and technology training.

One of the largest obstacles women face is in science and technology initiatives that are focused on development. Women play a small role in science and technology initiatives and education worldwide. In 1995 the Gender Working Group found that "women continue to suffer disproportionately from men in this respect, and that women continued to be almost entirely overlooked in science and technology development and transfer."[78] Contributing to the lack of representation women have in the sciences is the educational disparities between males and females.[79] Social and cultural restrictions placed on women limit the opportunities they have to study science and obtain jobs in the science and technology field. The Gender Working Group of UNCSTD identified seven transformative actions in their *Declaration of Intent* in order to help countries reduce the inequities in science and technology fields. The first of the transformative actions focuses on education. Women have less educational opportunities than men do, and even fewer opportunities to obtain training in science and technology. By eliminating these barriers, women will be able to have better "opportunities to meet their basic needs and improve the quality of their lives and those of their families; gain access to employment; create businesses; and acquire skills for citizenship."[80] Therefore, not only will women as individuals benefit from science and technology training but have the potential to influence and change their communities as well.

Benefits and Disadvantages

Geoffrey Oldham, in his keynote Presentation at the Conference on Gender, Science and Technology in Montevideo, Uruguay, October 26, 2000, identified four major reasons why it important to have gender equity in science and technology: human rights and social justice, scientific and economic reasons, social reasons, and reasons of insight. By limiting who can participate in science and technology, countries are hindering science and technology development as well as economic growth. Science and technology offer

---

[76] "The Leaky Pipeline: Gender Barriers in Science, Engineering and Technology." The World Bank Group. February 5, 2002. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/0,,contentMDK:20208058~menuPK:489311~pagePK:148956~piPK:216618~theSitePK:336868,00.html

[77] Geoffrey Oldham. "Gender Equity In Science and Technology: Does it Matter?" *Conference on Gender, Science and Technology, Montevideo, Uruguay, October 26, 2000.* http://gab.wigsat.org/oldham.html

[78] "Why Gender, Science and Technology." Gender, Science, and Technology Gateway of the Gender Advisory Board. http://gstgateway.wigsat.org/gen/whygst.html

[79] "Gender and Science and Technology Education." Gender, Science, and Technology Gateway of the Gender Advisory Board. http://gstgateway.wigsat.org/TA/ed/whyeduc.html

[80] "The Gender Working Group: Gender Equity in Science and Technology Education." Gender, Science, and Technology Gateway of the Gender Advisory Board. http://gstgateway.wigsat.org/TA/ed/t1.html

many opportunities to the developing world, as described in a UNESCO statement on science and technology education:

> In a world where every aspect of life is increasingly dependent upon scientific and technological progress, promoting capacity-building and education in science and technology is indispensable for all nations not only to achieve sustainable development but also to create a scientifically and technologically literate citizenry in the interests of ensuring true democracy.[81]

By guaranteeing that men and women of all socio-economic backgrounds have the opportunity to engage in science and technology training and/or education, developing countries create more opportunities for improved science and technology.

In the developing world, men and women engage in technological activities every day, the most common one being agriculture. This is where technology training and access to new technologies become crucial for development. Despite the efforts of science and technology initiatives in developing nations, women have become disproportionately poor to men in their communities.[82] The problem is that when new technologies designed to improve quality of life in rural areas are introduced, they usually are directed towards tasks that men perform rather than to ones that women perform.[83] The Association for Women's Rights in Development (AWID) has stated that new technologies "are not neutral; they reflect and, in fact, incorporate social arrangements and power relations."[84] Ironically, women are the majority of the world's subsistence farmers.[85] Access to new technologies and agricultural training could have enormous agricultural and economic benefits. New technologies have the potential to meet the needs of developing societies, but "the gender specific nature of the needs and the differential impact of science and technology on the lives of men and women are inadequately recognized by either science and technology professionals or citizens."[86] The result is countries not being able to reach their full potential for development.

Gender inclusion in science and technology training can produce visible results in local communities. Sophia Huyer, 2002 Executive Director of the Gender Advisory Board of CSTD, in her presentation on *The Leaky Pipeline: Gender Barriers in Science, Engineering, and Technology* claimed that "when technologies improve women's production and increase income, children's well-being improves, school enrolment rises, birth rates decrease and environmental conservation increases."[87] Can culture and modern technology work together? Questions remain about women's ability to engage in science and technology training while balancing their traditional roles. With a stigma about women who engage in science and technology, there could be cultural backlash. Women play many important roles in their communities, and how science and technology may alter those roles is an important issue.

Only recently, it has been acknowledged that gender inclusion in science and technology training is an important issue. So while gender inclusion in science and technology training offers many potential benefits for development, it is only one among many issues that developing nations simply do not have the

---

[81] "Education, Science and Technology." UN Educational, Scientific and Cultural Organization. http://portal.unesco.org/education/en/ev.php-URL_ID=30581&URL_DO=DO_TOPIC&URL_SECTION=201.html

[82] "Why Gender, Science and Technology." Gender, Science, and Technology Gateway of the Gender Advisory Board. http://gstgateway.wigsat.org/gen/whygst.html

[83] Geoffrey Oldham. "Gender Equity In Science and Technology: Does it Matter?" *Conference on Gender, Science and Technology, Montevideo, Uruguay, October 26, 2000.* http://gab.wigsat.org/oldham.html

[84] "Why New Technology is a Women's Rights Issue." *Gender Equality and New Technologies.* No. 7, May 2004. AWID. http://www.awid.org/publications/primers/factsissues7.pdf

[85] Ibid.

[86] "Gender Working Group: Transformative Actions." The Gender Advisory Board of UNCSTD. http://gab.wigsat.org/transfom.htm#3

[87] "The Leaky Pipeline: Gender Barriers in Science, Engineering and Technology." The World Bank Group. February 5, 2002. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/0,,contentMDK:20208058~menuPK:489311~pagePK:148956~piPK:216618~theSitePK:336868,00.html

resources to address. With limited financial resources, how will developing nations be able to afford enhancing their science and technology education and training?

Current Initiatives

Recently there have been many significant steps taken to improve gender inclusion in science and technology training for development. The most significant action taken to address this issue has been through the formation of the Millennium Development Goals (MDGs). The Millennium Development Goals were created in September 2000 through the adoption of the Millennium Declaration. This declaration outlined eight goals to help develop the third world by 2015. All 191 member countries of the UN have pledged to reach these goals by 2015. The goal that most relates to gender equity in science and technology training is goal number three: to promote gender equality and empower women. While goal three includes many different gender issues, it particularly focuses on education, and thus gender inclusion in science and technology training is being addressed as part of its mission. Goal three sends the message that "development, if not engendered, is endangered," which includes science and technology training.[88] Because of the MDGs many countries are being forced to examine this issue and work towards solutions. Lithuania stated in its May 2003 Millennium Development Reports that increasing the number of women in the "hard sciences" disciplines was a long-term strategy to reduce the gender wage gap.

Even more recently representatives from developed and developing countries met to discuss how new technology can overcome gender inequality in all areas, including science and technology at the first ever 2005 International Symposium on Women and Information and Communication Technology. This was an extension of the World Bank's efforts to raise awareness about gender and technology issues through its Gender and Information and Communication Technologies Seminars. The Symposium met to "explore concrete ways to increase girls' and women's participation and leadership with Information and Communication Technology in order to effect economic, social, and political change."[89] Therefore, many initiatives and partner organization with the U.N., such as the Gender Advisory Board, the World Bank's Gender and ICT working group and the Millennium Development Project, all have been making gender inclusion in science and tech an important issue to be examined today.

Conclusion

At first glance, this issue seems relatively small compared to the "life and death" issues that face developing countries today: access to healthcare, access to clean water, etc. What makes this issue important for the developing world is that is has the potential to empower people. By allowing all members of society to participate in science and technology training and education, developing countries are laying the groundwork for sustainable development. Even on the smallest level, if a woman gains access to technology training for agriculture, her life improves, the lives of her family improve, and her community improves. Though there are many challenges that face gender inclusion in science and technology training including funding, economics and culture. In Nigeria, women did not want to study information and communication technologies because it made them too Western, and thus undesirable for marriage.[90] Despite the challenges, gender inclusion in science and technology training is a goal that both the developing and developed worlds can work towards achieving.

Committee Directive

What is most interesting about this issue is that it is not a problem exclusive to the developing world. Gender inequality in science and technology training is an issue that developed countries, as well as developing countries, need to discuss and investigate. While researching, ask yourself how does your

---

[88] *Millennium Development Goals: National Reports, A Look through a Gender Lens.* United Nations Development Programme. May 2003. http://www.undp.org/gender/docs/mdgs-genderlens.pdf

[89] "Women and ICT: Creating Global Transformation, An International Symposium." The Center for Women and Information Technology. http://www.umbc.edu/cwit/symposium.html

[90] Jo Sanders. "Women and Technology: Fast Facts." The Center for Women and Information Technology. May 2005. http://www.umbc.edu/cwit/fastfacts.html

country address issues of gender inequality or do they at all? How much is science and technology emphasized in education, and is access available to all members of society? How much will culture play a role in hindering/helping create science and technology initiatives? What are recommendations that this committee can make to other UN bodies? Can a common policy be formulated?