

**Biotechnology – Knowledge Cluster meeting**  
**Discussion led by Maureen Carter-Whitney, Research Director at CIELAP**  
**February 23, 2006**

The group began with brief introductions. Maureen then gave a brief presentation about what is meant by biotechnology; what applications are coming out of this technology; as well as where this technology is currently being used and why.

**Brief introduction to biotechnology**

- Biotechnology is defined by CEPA as "the application of science and engineering in the direct or indirect use of living organisms or parts or products of living organisms in their natural or modified forms
- Raises special concerns and considerations because it involves the manipulation and alteration of natural biological materials and processes.
- Advances in biotechnology research have occurred and continue to occur at a rapid pace - milestones in genetic engineering.
- Impacts on what we eat, how our food is produced, how we view and treat disease, how we clean up the environment, how we carry out justice in the judicial system with DNA evidence.
- Public affected in a number of ways: as citizen, taxpayer, consumer, patient, environmentalist - public sees benefits (especially re. health and medicine) but also significant risks and ethical concerns.
- Applications of biotechnology include: genetically modified food production; medical (stem cell research); genetically engineered trees; industrial and manufacturing processes (new plastics); pharmaceuticals - plant molecular farming/pharmacogenetics; and nanotechnology (construction of tiny structures/devices by manipulating individual molecules and atoms to have unique and powerful properties)

**Review of CIELAP's involvement with issue/reports/evolution of recommendations**

- CIELAP has played an ongoing role in the biotechnology debate. Most recent: GMO Statutory Liability Regimes: An International Review
- 1984 - organized first conference in Canada on environmental issues related to biotechnology.
- reports have consistently recommended the need for a comprehensive policy framework for the regulation of biotechnology products

**Current status of biotechnology in Canada**

- acts/regulations that govern biotechnology administered by different departments and pre-date development of biotechnology, so there is no clear legislative authority to evaluate environmental, and human health risks.
- without legislation, rules have been made within departments by the public service - there has been no parliamentary debate and little public access to the decision-making process -

- public participation has been limited to specific components of the regulatory system and not
- deficiencies noted by CIELAP report

### **Proposed framework for engaging with government - different requirements**

Need to have full citizen engagement in developing a comprehensive policy framework that takes account of ethical, moral, novel legal issues

Maureen presented one of CIELAP's greatest concerns: that advances in Biotechnology are moving forward very quickly but the government is not taking a central role in its governance. The government has assumed a supportive environment of promoting these technologies without considering public opinion AND without a well developed regulatory framework.

Stakeholders in environmental debates often resist public education. This is particularly true with regards to biotechnology; experts feel that the issue is too complex and that it is not worth working towards an informed public. In addition, experts often feel that members of the public will become overly "emotional" about the topic and will fear what they do not understand. CIELAP has a strong interest in working towards greater public education and engagement in this issue; we feel that an informed public lead to better policy decisions. Currently the public can only participate in the biotechnology debate through the existing regulatory system. This system, however, doesn't look at ethics, health, and many other considerations.

CIELAP was formed in 1970. For most of these years we have advocated for a regulatory framework for biotechnology. Some Acts and other pieces of legislation have been created but these are scattered among departments and there isn't much coordination between them or the departments. This makes it difficult to do a comprehensive analysis of the Health and Environmental impacts. We feel that the government needs to play a role in this more than ever; however this needs to be done with full citizen support.

Maureen asked participants to describe, as regular citizens, what they knew and didn't know about biotechnology. The following issues came up:

- The issue of biotechnology doesn't come up on most people's radar. When we educate, perhaps we shouldn't focus on the science but rather focus on the precautionary approach and instances of disasters that have happened where we haven't used this approach
- This is a justice issue – it is making it very difficult for many farmers, particularly those who farm organic, to practice their livelihood. Agriculture should not be based on monopolies.
- The idea of crossing the species barrier seems dangerous for ecological systems – these inventions can get out and disperse; they are essentially invasive species.
- The problem is when we take a purely human perspective rather than one that looks at ecological systems.
- We have lost the tradition of people actually saving their seeds.
- Question: Has biotechnology actually helped us feed growing populations?

Answer: Yes, we have been able to farm more because of biotechnologies BUT a lot of these crops go to feed animals. We also know that the main cause of hunger is poverty, not about our ability to grow food. We also need to realize that there are many alternatives that we likely haven't explored enough. Biotech shouldn't be the only answer. Human ingenuity is incredible and has enough power to find many alternatives.

- There is a big level of ignorance about what biotechnology is really about (the science). There is also a big lack of knowledge about the policy. Good education would be very useful.
- Nothing in plant nurseries is unpatented.
- Environmental groups tend to always be against biotechnology, but no one ever talks about how it might be a positive thing (it could play a role for pest resistance, increasing yields, carbon sequestering, etc...)
- If biotechnologies are such good solutions, why are those in favour of it being so aggressive against those who are pursuing the alternative??
- One of the biggest issues here is that there has been no good discussion about it – this raises a big red flag.
- This is also a right to know issue – when you cross species you bring up allergen concerns
- CIELAP is not at all saying that Biotechnologies are “evil” – we feel that we need an open debate and for the government to develop a regulatory framework that allows that.

CIELAP's “Citizen's Guide to Biotechnology”, found on CIELAP's website [www.cielap.org](http://www.cielap.org), provides detailed information about biotechnology.