

The Committee has reviewed the testimony and evidence we have received on this issue, and we consider the surveillance and verification role an appropriate one for Canada. Therefore, if for any reason, Canada does not proceed with the Space Station Project, we propose the following recommendation for an alternative program:

#### **Recommendation 10**

**The Committee recommends that, should an alternative to the Space Station Project become necessary, the Federal Government should consider expanding the RADARSAT program to incorporate an arms-control surveillance and verification role in collaboration with other interested and appropriate countries.**

Professor Ursula Franklin of the University of Toronto and Professor William Fyfe of the University of Western Ontario presented testimony on the *International Geosphere-Biosphere Programme (IGBP): A Study of Global Change*, more popularly known as the Global Change Project. The IGBP was unanimously adopted by the International Council of Scientific Unions (ICSU) at the 21<sup>st</sup> General Assembly in Berne, Switzerland in September 1986.<sup>21</sup>

The objective defined for the IGBP is as follows:

To describe and understand the interactive physical, chemical, and biological processes that regulate the total Earth system, the unique environment that it provides for life, the changes that are occurring in this system, and the manner in which they are influenced by human actions.<sup>22</sup>

The IGBP will be developed as a research program to provide the fundamental information basic to an assessment of likely future changes on the Earth in the next 100 years.

The dominant influences on the earth's environment are of natural origin and include volcanism, the shifting courses of rivers, the turbulent dynamics of the atmosphere and oceans, and changing energy inputs from the sun. Superimposed on these natural forces are the activities of humans, particularly our use of fossil fuels for energy generation, intensive agricultural practices, major construction projects, and our almost infinite capacity to produce waste materials. The more serious effects of human activities include acidic precipitation, the rise in atmospheric concentrations of greenhouse gases such as carbon dioxide, desertification, water pollution, and the widespread degradation and erosion of agricultural soils.

To understand, and hopefully modify, these destructive processes will require a more complete knowledge than we now have of the physical and biological components and dynamics of the total Earth system. A major international transdisciplinary research effort is required: hence the motivation to develop the International Geosphere-Biosphere Programme.

Among the technologies needed for this complex understanding is the ability to examine the Earth as a planet from space. It is in this context that the RADARSAT program was cited as a valuable technology for providing some of the earth-resource data that will be

<sup>(21)</sup> Dr. Ursula Franklin, Issue No. 23, March 30, 1987, p. 23:8. Dr. William Fyfe, Issue No. 26, April 30, 1987, p. 26:7.

<sup>(22)</sup> International Council of Scientific Unions (ICSU), Ad Hoc Planning Group on Global Change, *The International Geosphere-Biosphere Programme: A Study of Global Change*, April 4, 1986, p. 3.