Understanding the goal of agricultural self-sufficiency, Canadian firms can deliver the technology and equipment needed, whatever the particular application.

Managing the living forests

The living forests of the world are in crisis — in developed and developing countries alike. The problems of abuse, of forest degradation, of short-term industrial exploitation, of desertification, of topsoil gone downstream forever, are all too familiar. Acid rain is carried on the winds across international borders, leaving an imprint of ruin. Less than one-third of the world's surface is now tree-covered. Trees are being cut at an accelerating rate.

The long-term solutions, called for by the United Nations, lie in integrating forestry with agriculture, in improving yields from lands already cleared for human settlement, in planting new forests, and in planning the use of the land. This huge task is just beginning on a worldwide basis.

Canada is a leader in forest industries, accounting for more than two-thirds of the world's trade in forest products. Remote sensing plays an increasingly important role in Canada's own forestry resources management. Of all the management tools available, remote sensing is becoming one of the most versatile and effective.

Seeing the trees and the forest

Conventional aerial photography has been and remains a key source of forestry data. Now, however, the combination of available satellite data and incredibly detailed information from the new remote sensing instruments flown aboard aircraft is enabling forest resource managers to see the trees as well as the forest. Large-scale forest management is becoming a practical reality.

Remote sensing is applicable to a growing number of needs, including forest type mapping; forest health monitoring; diseases inventories; species mapping; fire hazard monitoring and fire mapping; timber volume estimates; and clearance monitoring and cut-over mapping.

Transforming national capabilities

The move towards intensive forest management requires the use and integration of multiple data sources. Microcomputer-based Geographic Information Systems (GIS) provide readily usable and integrated theme or derived maps. Off-the-shelf and Canadian-developed database management software products and systems have transformed manipulation of map files. Such factors as soil surveys, vegetation, surficial geology, landform and other spatial data are easily included. New information on a real-time basis can be incorporated at will.

Thus, advanced technologies and techniques from Canada and Canadian companies are making science-based and technical information accessible to forestry managers in more than 60 countries to date. Assistance programs, including essential training and education, are providing the means to build a future for forestry management, at every level from the grass roots to major national programs. Creation of the needed institutional frameworks is also supported.

The more powerful new remote sensing instruments, the ever more comprehensive information from numerous satellites, the systems to handle the growing flow of information, and the services to put it all in place are all now available from Canada.

Forest clear cuts, logging roads and related management details are readily available from Thematic Mapper images.