

affected, to a certain extent, a more vigorous development of the sciences and new technologies in general, and of biotechnology in particular. The present section describes major aspects of Spain's policies in biotechnology, and the R&D effort within the country. In this sense two institutions deserve special mention in conjunction with biotechnology. These are : The Consejo Superior de Investigaciones Cientificas (CSIC) or Higher Centre for Scientific Research, and the Centre for Industrial Technological Development (CDTI). In addition to these research institutions, there will be a description of human resources in biotechnology. Finally the section will deal with Spanish R & D as associated with the EC, the biotechnology industrial sectors, and the status of intellectual property in the country.

A. GOVERNMENT SCIENCE POLICY

The above National Plan was set to cover activities at the National, Sectoral, Provincial, and International level. The goals of the Plan were four: I. Planning and coordination of the national R & D activities, II. Intensification of research efforts in areas in which Spain has an acceptable level of scientific achievement, and exploration and development of areas of special interest, III. Mobilization of private resources and stimulation of industrial innovation in the private sector, and IV. Renewal of scientific personnel.

To reach the above objectives concrete programs were developed in the following areas: 1) Training of scientific personnel; 2) Selection and financing of research programs; 3) Enhancement of Spain's experimental infrastructure; 4) Design of programs to stimulate innovation and competitiveness in the industry.

The previous areas were implemented for the period 1988-1991 in four major research programs with R & D funding exceeding Cdn \$1.5 billion. Of the four major research programs the second one, called Natural Resources and Quality of Life gives maximum relevance to the development and application of Biotechnology. This program has the following lines of activity:

- 1) Fundamental research in biotechnology
- 2) Biopharmaceuticals
- 3) Health
- 4) Agriculture
- 5) Livestock
- 6) Marine resources and aquaculture
- 7) Food technology
- 8) Forest research and technology
- 9) Conservation of the national heritage and environmental degradation.