

## PART I: THE FRAMEWORK OF INTERNATIONAL COLLABORATION IN SCIENCE AND TECHNOLOGY

### THE CASE FOR INTERNATIONAL COLLABORATION

#### The Benefits

International collaboration is wide spread because it provides benefits of one kind or another to the participants: benefits as diverse as the differing categories of collaboration itself. There are nevertheless three major groups under which they can conveniently be discussed: the "natural" collaboration resulting from the existence of a problem or need of international dimension; economic benefits of many kinds and at many levels, and, as a relative newcomer, political benefits. The latter, being the primary concern of governments, is addressed in detail in Section II.

Many fields of research are global in nature and their study requires an international approach if it is to be done at all. Examples include meteorology, oceanography, astronomy and seismology. Cooperative programmes in these and like areas were some of the earliest examples of international collaboration producing shared data, expertise and facilities. Health is another major shared concern, not only in terms of contagious diseases such as small pox which demand concerted research and action at world level, but also in respect of others such as Parkinson's Disease where the combined efforts of Austrian, Canadian, Chilean, Swedish, Swiss and American scientists created the drug L-DOPA - the first effective treatment ever produced.

Two other areas of rather recent significance are certain transboundary environmental problems, such as air and river pollution, and the emergence of global technologies. The latter technologies, whose socio-political effects have a major trans-national element, include satellite communications, (in particular, direct broadcast satellites), weather satellites, seabed mining, new fish harvesting techniques and multinational data networks. Collaboration in these areas ensures that country members understand the ensuing problems as well as potential and can plan and negotiate appropriate standards, regulations and safeguards to national interests.

It is however in the economic area, defined very broadly, that the advantages and benefits of international collaboration in S&T are most numerous. As an illustration, some of the major possibilities are listed below: