# INFOTERRA:
## THE INTERNATIONAL ENVIRONMENTAL INFORMATION SYSTEM

### By

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## A. Introduction

1. In the 1960's man woke up to the fact that the human species, as it multiplies and relentlessly consumes, may at some not-too distant future become a plague infesting this globe of ours-stripping it of its freshwater, its soil, its natural resources, and its flora and fauna and biodiversity, and thereby condemning it to death. This realization gave rise to a shared concern of our common future, and of the future of our ONLY ONE EARTH. This shared concern gave rise to the international environmental movement, and part of the resulting concerted efforts to safeguard our globe is the sharing of our environmental experiences, environmental data and environmental information included.

2. INFOTERRA is an international system sponsored by UNEP designed to facilitate the flow of environmental information, within and between countries, and was established in response to a recommendation of the United Nations Conference on the Human Environment (Stockholm, June 1972). INFOTERRA concept was developed during 1973-1974 and preparatory works were carried out during 1975-76. The system became fully operational in January 1977 with the participation of a dozen countries. At present, 155 countries have designated national focal points, (which cover over 99% of the world population), over 6,500 sources are listed in the INFOTERRA Directory (which links quarter of a million experts to the network),"and a cumulative total of over 147,000 queries have been processed for users in 114 countries in the last 15 years.

3. INFOTERRA was designed as a decentralized system, based on and operating through government-designated national focal points. This decentralized structure proves to be the least costly means of facilitating information exchange, as well as the most effective in catalyzing the upgrading of national information systems by Governments, or their creation where none existed. The fundamental aspects of INFOTERRA have been defined as decentralization, provision of information to decision-makers through the sources registered in the INFOTERRA Directory (national or international), facilitation of exchange of environmental information through the access of environmental databases, promotion of awareness of the role and importance of information in environmental decision-making, and the stimulation of development of national environmental information systems. An independent evaluation carried out in 1980 concluded that the original mandate had been fulfilled and the services provided to users were excellent or very good (85% of users surveyed indicated their satisfaction).

## B. The information system

4. The INFOTERRA information system consists of five components: national focal points, sources of information, Special Sectoral Sources, Regional Service Centres and the INFOTERRA Programme Activity Centre. Figure 1 illustrates this network.

Figure 1. Conceptual diagram of INFOTERRA network
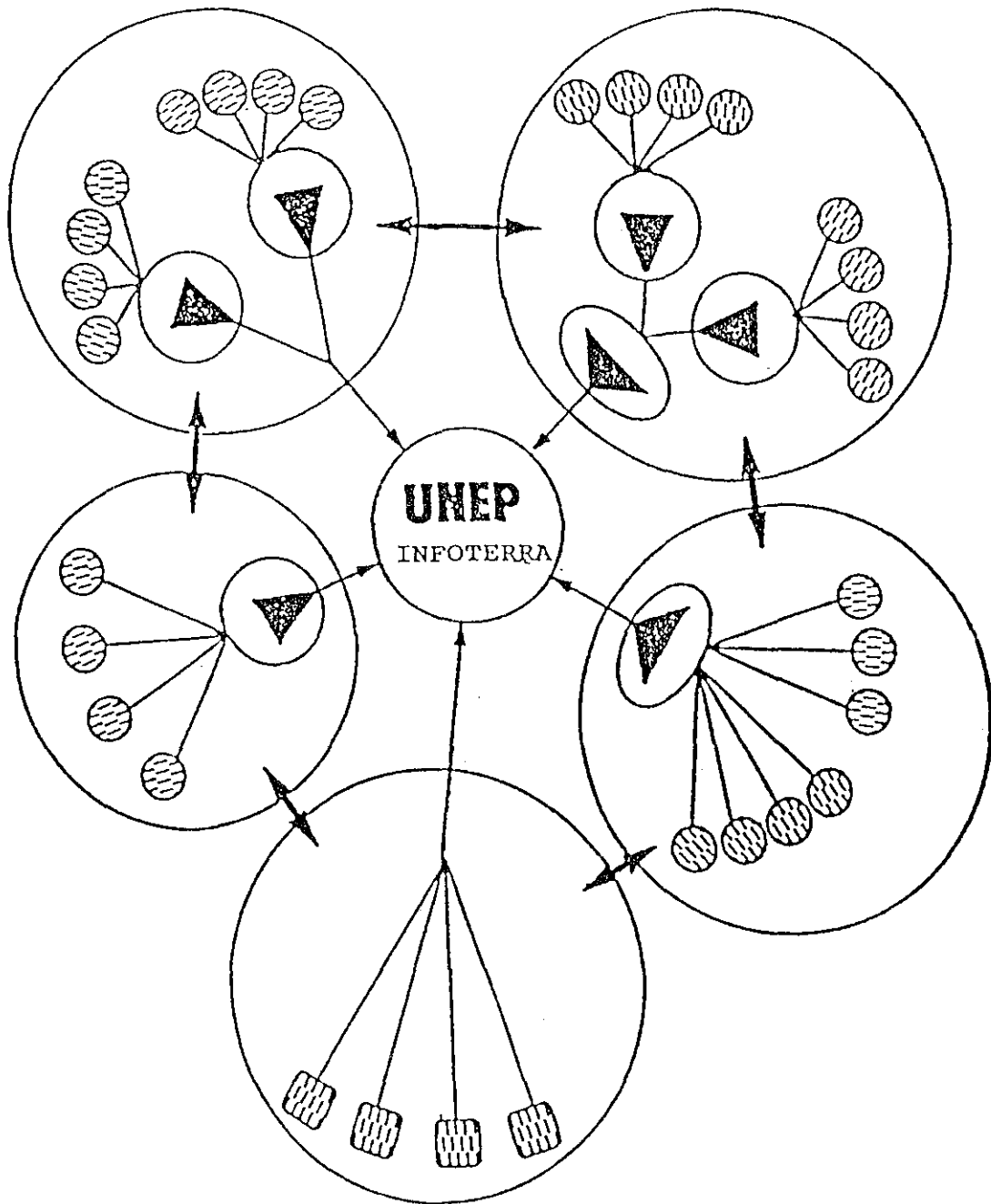


REGIONAL SERVICE CENTRE

NATIONAL FOCAL POINT

NATIONAL SOURCE

SPECIAL SECTORAL SOURCE

### National focalpoints

5. The INFOTERRA national focal points are the key elements in the network, as they provide the input for the International Directory, which is one of the main tools, and are the first points of contact with the users. Many of them, especially in developed countries, consider the informal and relatively easy dialogue and access to national environmental information systems resulting from the network of INFOTERRA national focal points to be one of the greatest benefits they derive from their participation in INFOTERRA. Others, especially those in developing countries, consider their participation in the INFOTERRA system the least costly and rather effective way of gaining access to modern science and technology to solve their environmental problems. After receiving training on INFOTERRA concept and procedures, the NFPs are expected to perform a number of functions including registration of sources, processing of queries, promotion of the system, etc. and serve as the INFOTERRA linkage in the country. Most of the NFPs are located at the information branch of the central environmental department, whom people naturally turn to when they have an environmental query in hand. Figure 2 shows the geographic coverage of the INFOTERRA partner countries, and Figure 3 shows the growth of the INFOTERRA network of national focal points.

### Sources of Information

6. The community of sources listed in the International Directory may be considered as the main product of INFOTERRA and form the backbone of the INFOTERRA database. Judging from the feedback obtained from a routine users' satisfaction survey, the sources do in most cases provide very useful information. The 6500 institutes registered from 106 countries represent some 250,000 experts who are willing and able to share their expertise in over 1300 priority subject areas with whomever in need of environmental experiences in these fields. Through this network, 2.5 million publications under various environmental subjects are made available to users, in most cases free of charge.

### Special Sectoral Sources

7. These are centres of excellence in selected environmental priority sectors. They are world renowned organizations which can provide comprehensive, authoritative information in their own sectors. These organizations are contracted by UNEP to provide substantive information, at a nominal charge, to users anywhere in the world. The selection of queries to receive this additional help is based on the nature and the origin of the query with priority being given to users from Governments of developing countries - policy makers, scientists, engineers, etc. For example in the field of environmental legislation, ELIS (Environmental Legislation Information System) serves as the INFOTERRA Special Sectoral Source, and in waste treatment, the Harwell Laboratory in the U.K. is the SSS.

### Regional Service Centres

8. Given the similarity in environmental problems in a region or sub-region, regional centres for environmental information have been appointed as Regional Service Centres. This permits services such as computer search facilities, training, promotion, the provision of substantive information, etc. to be provided more economically or in a more professional manner. So far ten centres have been established to serve nine developing regions, including Southeastern Asia, Southern Asia, Northern Africa, Western Asia, Eastern Africa, Western Africa, Latin America and the Caribbean.

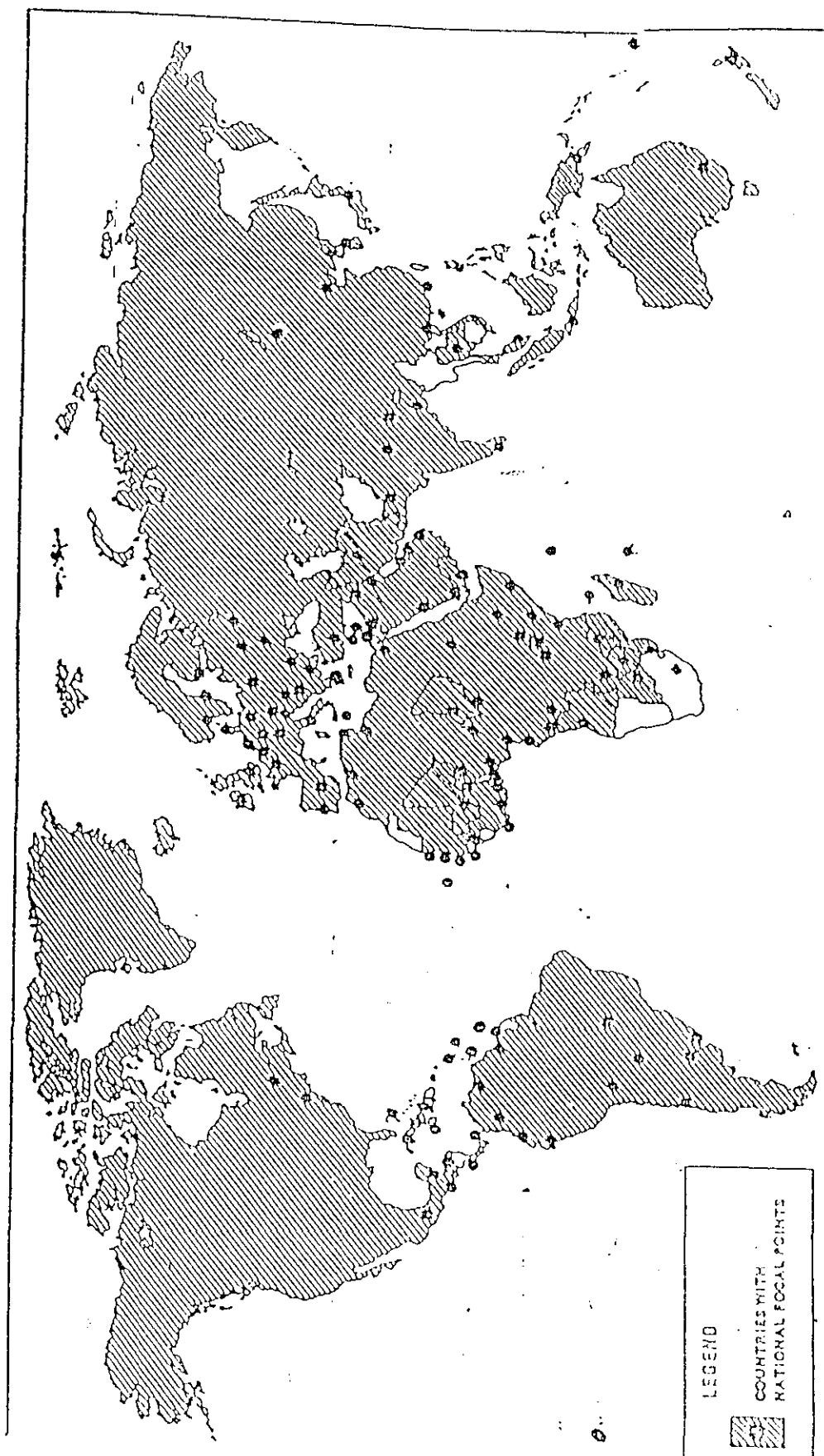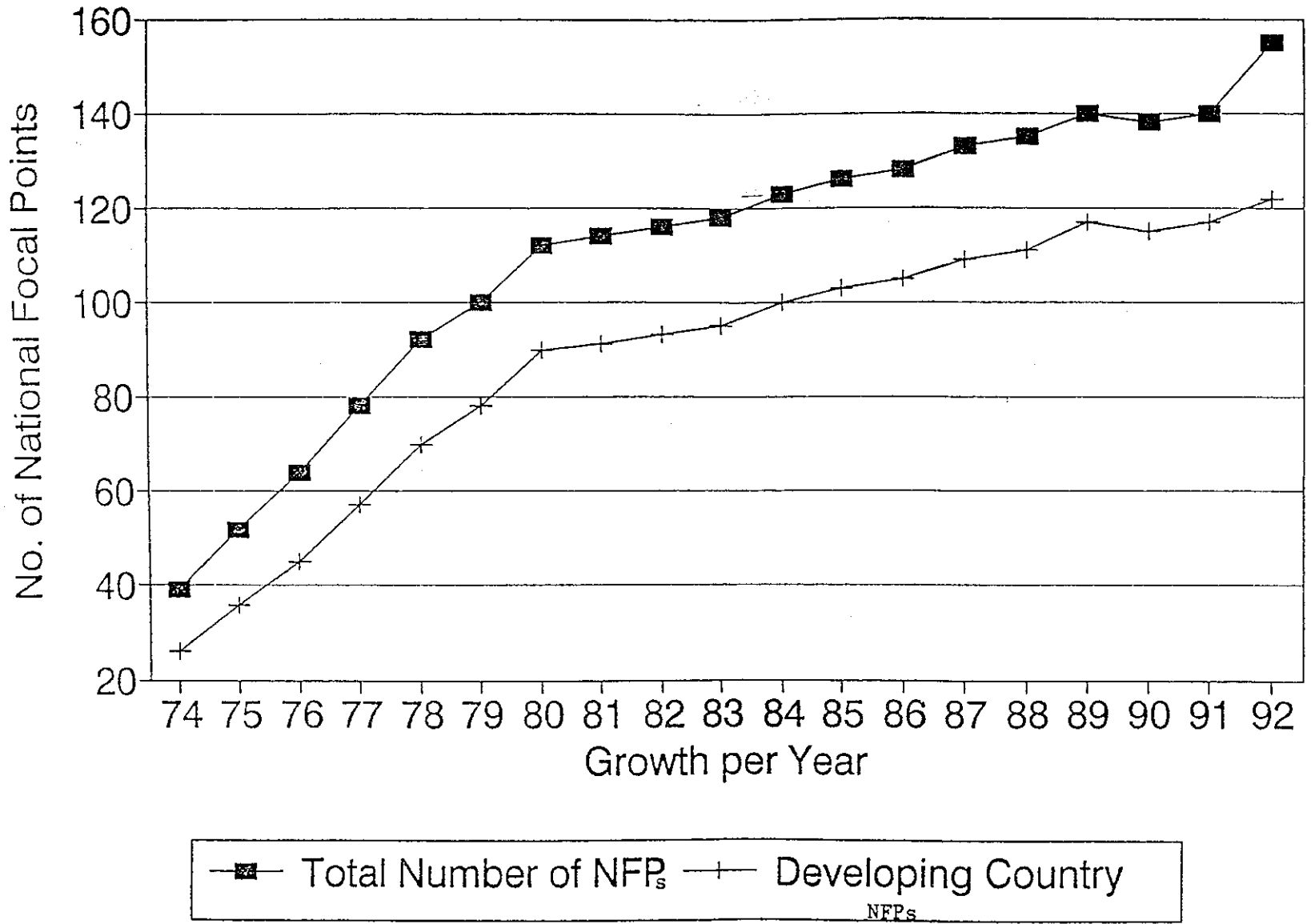Figure 2. Geographical coverage of INFOTERRA partner countries



LEGEND

COUNTRIES WITH
NATIONAL FOCAL POINTS

Figure 3. Growth of INFOTERRA network



Figure 3. Growth of INFOTERRA network

## Programme Activity Centre

9. The PAC was set up as an internal project of UNEP to coordinate the network. Its major tasks, in line with the catalytic and co-ordinating role of UNEP, have been to assist Governments in establishing and developing INFOTERRA national focal points; providing the necessary training to national focal point staff, especially in developing countries; providing system tools and improving system operations; assisting with directory searches and developing model publicity materials. The co-ordination was accomplished through designing standardized operational procedures and terminology, and by publishing the INFOTERRA International Directory. Given the decentralized structure of the INFOTERRA network, however, INFOTERRA operations in individual participating countries depend almost entirely on the efforts of their national focal points and the Government support they receive.

## C. The INFOTERRA system tools

10. INFOTERRA was conceived as a system of maximum simplicity. It was designed to give valid results with the minimum of professional information system expertise. The principal tool of INFOTERRA is the International Directory of Sources. This has undergone a number of format changes, and many attempts have been made to reduce the volume of a very substantial publication. INFO-TERRA developed its own software and procedures for the compilation of its database, and adopted CDS/ISIS system for the micro-computer version of database.

11. Another tool used by the System is the terminology. The entire vocabulary contains some 1300 priority subject areas. INFO-TERRA operational procedures are described in detail in an Operations Manual which is published in four languages and is made available to all national focal points.

12. An electronic mail system linking many of the INFOTERRA network partners was initiated in November 1988. Together with other means of modern communications (e.g. tele-facsimile), the typical turnover time for a query-response has reduced to days instead of weeks.

## D. Impact of INFOTERRA

### A. Query-response services

13. Through the query-response services of INFOTERRA, solutions to environmental problems and other substantive information have been provided to enquirers in 114 countries for over 147,000 queries in the last 15 years, and have led in many cases to actual improvement in environmental quality, and in others to better management decisions. The main subject areas of enquiry have been pollution control, waste treatment, chemical and biological agents, technology and industry, and management and planning. Figure 4 shows the growth of the number of queries processed by INFOTERRA.

14. During 1991, through these information services, several countries managed to resolve the problems associated with trans-boundary movements of hazardous wastes; established national legislation on various aspects of the environment, including marine environment; cleared accidental spillage of potentially toxic chemicals; managed to contain the invasion of a swarm of locusts; improved the efficiency of energy use and production; and advanced their skill on the treatment of industrial effluents and discharges. Some INFOTERRA successes are listed in Table 1 as examples.

### B. Catalytic Role

15. In line with the catalytic role of UNEP, INFOTERRA has promoted the establishment of national environmental information systems; assisted in the setting up of international information system of relevance to environment; raised the environmental

awareness whenever appropriate; and advanced the participation of developing countries in the international exchange of environmental experiences. Notable examples of national environmental information systems those in Colombia, Brazil, China and India, these and other countries are establishing comprehensive national environmental information systems as part of a broader national information effort, with the encouragement and support of INFOTERRA. For the majority of the INFOTERRA partner countries, national infrastructure for the handling of environmental information has been strengthened, as a result of their participation in the INFOTERRA activities. Table 2 summarizes the catalytic role played by INFOTERRA.

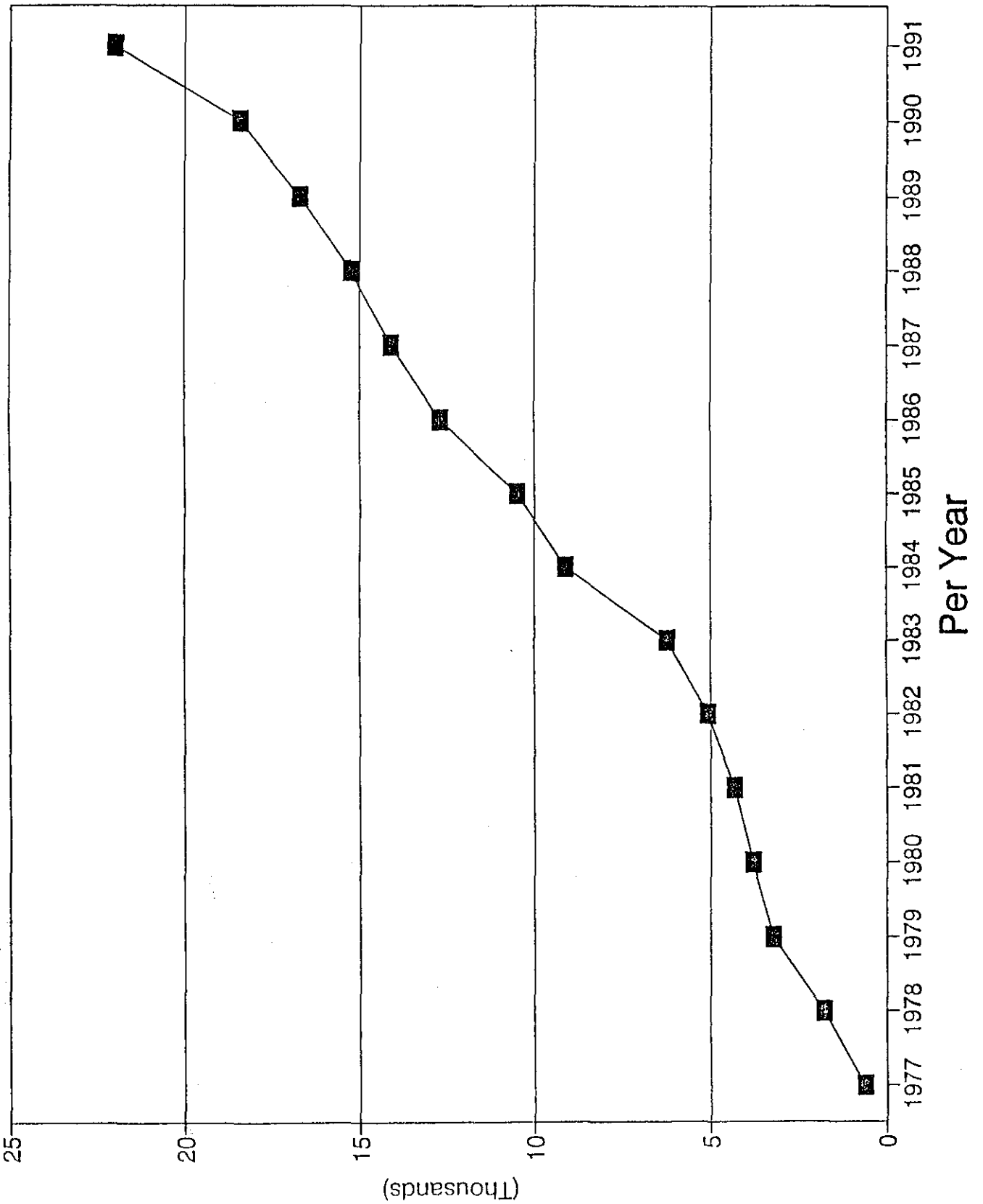Figure 4. Total number of queries processed per year by INFOTTERA

Table 1. Impact of INFOTERRA

Some Success Stories

| Country | Success Stories |
|---------|-----------------|
| Belize | Rejected the offer of a used-oil treatment factory from a multi-national company, based on environmental impact information received from INFOTERRA. |
| China | Developed national environmental monitoring network, reduced urban noise level, developed national safety colouring code, re-gained contact with world-wide learned societies, received a number of technological details in various fields. |
| Gambia | Improved large-scale rice plantation projects and prevented hippos from damaging the paddies. |
| Kuwait | Developed coastal areas based on environmental guidelines. |
| Malaysia | Rejected the offer of a $TiO_2$ manufacturing factory by a multi-national company, made better use of rice husks, improved the efficiency of spraying of 20 named pesticides. |
| Oman | Developed oil-spill contingency plan, appropriate method of disposal of solid municipal wastes, safety aspects of asbestos cement pipes, rectification of hydrogen sulfide contaminated monitoring wells. |
| Samoa | Rejected the offer of a used -oil treatment factory from a multi-national company. |

Table 2. Impact of INFOTERRA: Catalytic role

| | |
|---|---|
| Promotion and Assistance in the Establishment of National Environmental Information Systems | India: ENVIS system<br>China: Chinese Environmental Abstracts (CEA)<br>Colombia: INDERENA system<br>Brazil: SEMA system<br>Ethiopia: National network |
| Co-operation and Assistance in the Establishment and Strengthening of International Environmental Information Systems | FAO: ASFIS and CLENR<br>UNESCO/IOC: MEDI<br>IUCN: ELIS<br>CMEA: ICSTI<br>Special Sectoral Sources: 24<br>Regional Service Centres: 6 |
| Training of National Focal Point Staff | 29 INFOTERRA Training Courses held<br>Total number of staff trained: 300 |
| Raising Environmental Awareness | INFOTERRA national seminar held in 41 countries<br>Total number of participants of seminar: 2,600 |
| Strengthening National Infrastructure for Handling Environmental Information | 84 countries organized their national INFOTERRA information source networks |