C. The Global Commons

9. *Oceans*

40-years' goal:—To ensure, as an indicator of the health of the oceans and of the wise management of global resources, that the populations of whales and dolphins are restored to at least half the levels at which they stood before the human onslaught.

10-years' objective:—Implementation of global conservation measures leading to significant recovery of whale and dolphin species now severely depleted by human activity.

10. *Atmosphere*

40 years' goal:—To end the threat posed by increasing levels of atmospheric pollution to the health of people and ecosystems and the stability of the Earth's climate.

10-years' objective:—The ending of all non-medical uses of chlorofluorocarbons, the development of national energy strategies to slow the rate of increase in carbon dioxide from fossil-fuel combustion, and the adoption of agreements that will substantially reduce emissions of sulphur dioxide, nitrogen oxide, and the hydrocarbons incriminated in the production of oxidants.

11. *Antarctica*

40-years' goal:—To ensure that Antarctica remains a continent unsullied by pollution and misuse, and open to people of all nations for purposes of peaceful scientific exploration and the enjoyment of the immense natural beauty of the region.

10-years' objective:—Adoption by the world community of an Antarctic Conservation Strategy as a foundation for the wise management of the world's last great wilderness for the benefit of the entire global community.

D. Political Commitment

12. *Political commitment*

40-years' goal:—To unite the world against the common threat of global environmental degradation by providing strong, coordinate action at the regional, national, and local, levels.

10-years' objective:—Adoption of National Conservation Strategies or equivalent plans in all countries, backed by the development of infrastructure, community action, and due training, to put them into effect.

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Increasing the Flow of Scientific Literature to the Third World

Scientists cannot function without a steady supply of books, journals, and other forms of information 'exchange'. It is of fundamental importance in the application of science and technology to social, economic, and cultural, development, and to the well-being of the Earth, that every country have at least one open library that receives current books and journals in science and technology. While it may seem rather obvious to research workers, this simple message is not necessarily accepted by funding agencies, and needs to be emphasized time and again. Such a statement was reaffirmed at an international meeting on scientific literature for the Third World, held during 31 October–2 November 1988, in Trieste, Italy, at the International Centre for Theoretical Physics (ICTP), and organized by ICTP, the Third World Academy of Sciences (TWAS), and ICSU Press.

The sixty participants, who represented a wide range of publishers, scientific societies, book and journal donation programmes, and funding agencies, agreed to increase efforts to supply key Third World institutions with important scientific literature, both current and archival. One way to do this is to follow the excellent example of the ICTP's own donation programme, recently expanded beyond the field of physics in cooperation with TWAS.

Other programmes reviewed at Trieste are being run now by the American Association for the Advancement of Science for sub-Saharan Africa, the Association of Geoscientists for International Development, the International Union of Geological Sciences, the Society of Economic Paleontologists and Mineralogists, the American Chemical Society, the European Physical Society, and many others. However, these activities take place without coordination and without a regular way to exchange ideas and experiences, for example on sources of materials and funds, and on the best ways to identify recipients and evaluate the results. To this end the participants agreed to form an Information Network on Scientific and Technological Literature for Developing Countries (ST-LITNET), which will link interested groups.

In his opening remarks to the Workshop, Professor Abdus Salam, ICTP Director and President of TWAS, proposed a new programme to provide a limited number of active Third World institutions with subscriptions to key scientific journals, with the costs to be covered by various granting agencies.

To encourage such a programme, TWAS has announced the annual allocation of US $ 250,000 to book and journals programmes. There is a possibility that the same amount will also be provided by the ICTP for this purpose. For further information please contact:

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Lanzarote—a Note on Its Conservation

Lanzarote (795 km^2, population 42,000), the most easterly of the Canary Islands, is administratively part of Las Palmas Province of Spain, although it lies some 137 km off the north-west coast of Africa (at 29° 00′ N; 13° 40′ W). A major portion of the island consists of a national park of jagged volcanic peaks, extensive lava beds, and volcanic springs, surrounding Montañas del Fuego (Fire Mountain), the last major eruption of which took place in 1730—followed by lesser volcanic eruptions lasting until 1825. Today, there is still sufficient thermal heat for cooking at the park restaurant. This can be reached by motor car or, for those who prefer, by camel!

Drives along the road that circles through the national park are controlled: visitors must either leave their vehicles in the car park by the restaurant, and be taken on by coach, or else they have to drive in convoy, accompanied

by officials of the national park on motor-cycles. The jagged peaks and absence of green vegetation make Timanfaya, one of the world's largest lava-fields, an unusual and exotic region. Not surprisingly it has, on a number of occasions, been used as a film setting. The national park buildings are blended into the landscape, making use of the local topography.

On the coast, to the west of Fire Mountain, lies El Golfo, a volcanic cone at sea-level with a whitewashed village beyond, and a beach of black sand. By law, all the houses on Lanzarote are white with green paintwork (the island's 'national' colours) and, outside Arrecife, none may be higher than two storeys. In consequence, the towns and villages present a neat, harmonious appearance that is probably unique.

The road to the bay of El Golfo is spectacular, with jagged splinters of black lava, dark caves, and apertures through which the ocean waves foam. Visitors following this dramatic route often stop at Los Hervidos (Boiling Springs) on the way. To the south of El Golfo, there are extensive rectangular brine pans in which sea-water evaporates in the hot sunshine.

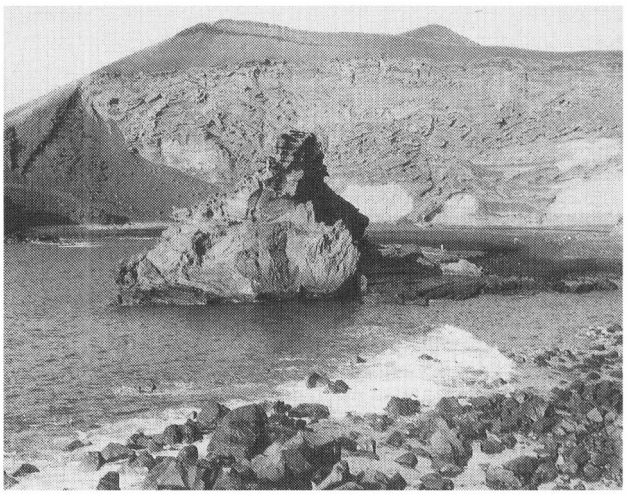

FIG. 1. *The coast of Lanzarote is widely rocky and the hinterland often barren.*

Various Vegetables Grown

Cereals, chick-peas, onions, tomatoes, and other vegetables, are grown in terraces on the steep slopes of the volcanoes by remarkable dry-farming methods, mainly on the eastern side of the island. Despite negligible rainfall for most of the year, vines, too, are cultivated in hexagonal plots delineated by lumps of volcanic rock and containing crushed lava on which dew condenses. The water percolates through the particles of lava to irrigate the roots of the vines, grapes from which produce excellent wine. It is usually the case that the best of wines comes from the poorest soils. Those of Lanzarote are similar in character to many of the wines of Sicily and Madeira.

The capital, Arrecife, is the chief fishing port: fishing and fish-preservation are among the principal industries of Lanzarote. Zoologists will see few animals, although there is said to be an endemic species of lizard: even flies and other insects are conspicuous mainly by their absence. But no-one can fail to be interested in the plantations of prickly-pear cactus (*Opuntia* sp. or spp.) on which Cochineal Insects (*Dactylopius coccus*) are cultivated for their dye. Botanists, moreover, can enjoy the older lava fields lying towards the east, with their unusual flora of xeromorphic Euphorbias. Like the other Canary Islands, Lanzarote has a large number of endemic species. There are few goat-herds and little sign of overgrazing.

The Cuevas de los Verdes in the north of the island are a series of narrow tunnels connecting enormous caverns, one of which is used as a concert hall. Nearer the sea, Jameos del Aguia, a series of grottos and lakes, has a restaurant, bars, a nightclub, and a swimming pool. Readers of this Journal will, no doubt, find it far less appealing, as it is one of the chief tourist attractions of the island. On the north coast, Mirador del Rio is a cliff-top vantage point commanding breath-taking views of the islands Graciosa, Montaña Clara, and Alegranza. Graciosa is the largest, lying more than 1 km away. It is inhabited by only a few hundred people, mostly fishermen.

Conservation of Amenities

Despite its latitude, the climate of Lanzarote is never too hot. Rain seldom falls, and tourists are attracted in large numbers to the fine sand-beaches in the south, and by the cheapness of the excellent foods and wine. In the past few years, scores of villa complexes have been built at developing resorts such as Puerto del Carmén, which now extends into Playa de los Pocillos. The main part stretches for some two miles (3.2 km) along the coast—a continuous series of shops, bars, and restaurants, backed by holiday apartments. The conservationist need not feel too depressed, however. Just as holiday camps in Britain help to preserve the countryside by attracting the masses into relatively small areas, so do the beaches in the south attract tourists from overseas. Consequently, it is possible to rent a car and drive over spectacular unspoilt countryside, and even to find the occasional empty beach away from the south, from which to bathe—much of the coast being too rocky and wild, with Atlantic rollers that are too large to make bathing possible (Fig. 1).

In general, the island of Lanzarote is being conserved strictly and tastefully. It is still quieter than Tenerife and Gran Canaria, but is said to be the best island in the Canaries for windsurfing. The main threat to conservation lies in the ever-increasing number of tourists, however well they are regulated by the Spanish authorities. The lava, being soft, is as susceptible to tourist pressure as are the flora and fauna.

Warmest thanks are due to my friend Richard Bailey, Birkbeck College, University of London, for his helpful comments.

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'Living Earth': New Initiatives in Environmental Conservation

Living Earth is a non-profit organization which was established in 1987 with the aim of helping to protect the environment by working towards the sustainable and socially beneficial use of the world's resources. The work is long-term and strategic, because Living Earth does not believe that the problems which they are tackling are solvable by instant injections of cash, surges in public opinion, or swift changes in government policy.

Education is seen as the main key to this work. Living Earth is working both in the United Kingdom and overseas to build due awareness through formal and informal channels, thereby encouraging the next generation of decision-makers to adopt new policies towards resource management and the environment.

To cite two examples from tropical Africa, Living Earth is working in Cameroon to develop an environmental edu-