

MAB – Man and the Biosphere

In retrospect

UNESCO's Man and the Biosphere (MAB) Programme was established in 1970. The idea originated at the 'Biosphere Conference' in September 1968 in Paris, the official title of which was 'Scientific basis for Rational Use and Conservation of the Resources of the Biosphere'. It was organised by UNESCO in cooperation with the World Conservation Union (IUCN) and the International Biological Programme (IBP). As the IUCN was more or less founded at a UNESCO conference in 1948 and IBP was UNESCO's research programme on natural resources (1964 – 1974), the 'Biosphere Conference' really is an offspring of UNESCO.

Still this was an innovative conference considering that during the first years of UNESCO's existence, its focus was very much on supporting individual research institutes such as projects for the protection of the Amazon Basin or the Galápagos Islands whereas during the fifties, individual climate zones such as the humid tropics and arid environments were the focus.

The 'Biosphere Conference' was inter-governmental; however, the delegations were mostly made up of experts. As many as 236 delegates from 63 countries took part as well as 88 representatives from international organisations such as the United Nations and its specialised agencies for food (FAO) and health (WHO). Discussions were primarily about the increasing global significance of environmental problems which mankind has to face. The term 'biosphere' became integrated into international vocabulary; formerly the term, which was introduced by Eduard Suess in 1883 and made popular by Vladimir L. Vernadski, was only familiar in specialist circles. The groundbreaking achievement of the conference was to declare for the first time on an intergovernmental level that the issue of protection and use of natural resources, the fact that they must go hand in hand and that interdisciplinary approaches are necessary. The 'biosphere conference' was therefore the first intergovernmental

forum to delve into sustainable development – 24 years before the conference of the United Nations on Environment and development (UNCED) in Rio de Janeiro.

Impetus from Germany

The Federal Republic of Germany contributed significantly to this 'Biosphere Conference'. Experts from the German Commission for UNESCO (DUK) tabled a resolution at the General Conference in 1964 to strengthen nature conservation at UNESCO, which was adopted and reconfirmed in 1966 – the decision to hold the 'Biosphere Conference' was also made there. The DUK conference on the harmonisation of protection and use of nature took place in 1966 on the island of Mainau in Lake Constance and another in April 1968 in Berchtesgaden. The long-standing member of DUK, Dr. Magda Staudinger presented the final address, the focus of which was on man as a part of the biosphere with a 'biological' conscience and a new partnership between man and nature. She continued to promote these ideas throughout the next two years at various UNESCO meetings, with success. At one conference of the European national commissions for UNESCO in June 1968 in Monaco, she was able to inspire the UNESCO Secretary General, Renè Maheu.

From the Biosphere Conference to the creation of the MAB programme

One of the 20 resolutions of the 'Biosphere Conference' addressed UNESCO, calling upon it to initiate an 'international research programme on man and the biosphere'. As an interdisciplinary international programme, it was to deal with social, economic and cultural aspects as well as environmental issues and was to concentrate on the problems of developing countries. There was no mention of 'biosphere reserves' at that time. The 15th General



Conference of UNESCO in 1968 adopted the resolution to a large extent.

During the course of 1969, extensive consultations took place to finalise the framework of the planned MAB programme. The term 'man and the biosphere' is due to Edgar Barton Worthington, the director of the IBP. The term was meant to enhance the 'human dimension' of ecological research. At the same time, Worthington related the acronym MAB to the midwife of the same name, who is referred to in the first act of Shakespeare's *Romeo and Juliet*. In 1969 the vague idea of a network of national parks, nature reserves and protected areas was born, which would promote protection, research and education. The term 'biosphere reserve' was, still very tentatively, used for the first time. It was included in the resolution for the proclamation of the MAB-programme, as a description of operational research sites.

On 23 October 1970 'Man and the Biosphere' was on the agenda of the 16th General Conference of UNESCO. The programme was not without controversy: some of the delegates were vehement that the issue should be left to the International Council for Science (ICSU), which had just founded the

Scientific Board for Environmental Problems (SCOPE). A whole day was taken up with heated discussions, the Director General spoke up for the programme with insistence: "I want to have this programme!" In the end a vote had to be taken (which is rather unusual at UNESCO). Five minutes before midnight the MAB Programme was born.

Biosphere reserves come into play

The goal of the MAB Programme was, right from the start, that of interdisciplinary research. Scientists from a variety of disciplines were to work on specific recommendations for modern environmental politics on an international level, based on an ecosystem-approach. The recommendations for the protection of ecosystems and for the sustainable use of resources were to be implemented at the national level. Each country was invited to set up a National Committee, in order to guarantee as intense a collaboration as possible.

MAB was and still is an inter-governmental programme. States form the membership of its most important body, the International Coordinating Council (ICC). In 1971 the ICC assembled for the first time, the most significant outcome of that meeting being the establishment of 14 thematic 'project areas', which were to reflect the diversity of the programme. From tropical rainforests to arid deserts

and mountain ranges to coastal landscapes and islands, the whole spectrum of ecosystems was represented. The 14 project areas MAB-1 to MAB-14 remained in effect up to the nineties. In 1969 there had been 31 individual research areas and the reduction led to MAB becoming more coherent. Nevertheless the work suffered during the first few years due to the lack of project schedules and the fact that there was no real funding source to support local work – thus the individual MAB projects were rather isolated, their results could hardly be consolidated.

At this stage, the concept of biosphere reserves was taken up. Regions were needed to implement research results in practice. The political context was helpful: In 1972 the UN Conference on the Human Environment took place (the content of which was very much influenced by the 'Biosphere Conference'), this led to the founding of UNEP at the end of 1972. In 1974 a special work group of the MAB programme got together with UNEP and substantiated the goals and features of the biosphere reserves. The three 'functions' were roughly drafted: Protection of natural resources and ecosystems as well as the preservation of biological diversity (protective function); development of an international network for research, monitoring, education and information exchange (logistical function); development and implementation of concepts in order to bring economic development and the protection of the environment

and nature together (development function). The draft of a system of zoning was adopted in 1974. IUCN was to be involved in the selection process of representative sites with regard to protection.

From a great beginning to the first crisis

The interest in the new concept was immediate and surprisingly widespread in some countries. The summary statement of the Moscow summit in 1974 specified that according to Breschnev and Nixon, both sides agreed to identify biosphere reserves for protection and research as a contribution to the MAB programme. A wave of suggestions for new regions followed, simply too many for the not yet defined processes of the MAB programme. The Bureau of the MAB-ICC founded the World Network in 1976 to improve the effectiveness of individual biosphere reserves by exchanging experiences and cooperation. Furthermore it recognised the first 57 biosphere reserves in mid 1976 and at the beginning of 1977 a further 61 sites were identified. The most important selection criteria were the protective function and the existence of basic research facilities. In 1978 the MAB-programme was divided into four individual programmes for a period of two years. In 1980 this was reversed. By 1981, 208 areas in 58 countries were already designated as UNESCO biosphere reserves. However central emphasis was placed on protection; the development function was ignored. Nearly all sites had previously been national parks or had been otherwise protected; the new designation did not make any difference to these functions. Research was mostly academic, results were not exchanged, and the 'network' consisted of the MAB secretariat at UNESCO.

A MAB National Committee was founded in 1972 in the Federal Republic of Germany, which published a comprehensive series of research reports in the seventies and eighties. In 1972, the year after the GDR joined UNESCO, a MAB National Committee was also established there. It made recommendations for



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the first German biosphere reserves; in 1979 the Vessertal and the Steckby-Lödderitzer Forest (today a section of the Elbe River Landscape) were designated followed by the Bavarian Forest in 1981 (which again was withdrawn from the list in 2007). They remained the only biosphere reserves in Germany until 1990.

The subsequent progress

Despite all the esteem given to the MAB programme worldwide, all those involved were aware of the imbalance of the three functions in the first biosphere reserves at the beginning of the eighties. The 14 years up to 1995 were a consolidation phase in which the different functions of a biosphere reserve became more and more concise and were filled with detail. The advantage of an approach other than that of national parks and other conventional protected areas became more and more clear. The network's growth slowed down; at the end of 1990 there were 293 regions. The following events of that period are particularly significant:

- The first World Congress of biosphere reserves took place in October 1983 in Minsk; it was organised by UNESCO and UNEP together with FAO and IUCN. The Action Plan for biosphere reserves was a result of this meeting and was confirmed by MAB-ICC in 1984. It emphasised the multiple functions of the biosphere reserve.
- The Action Plan proposed an International Advisory Board, which met on an informal basis twice, in 1985 and in 1986 and set the selection criteria for new areas. Officially, the board convened in 1991 for the first time – its main objective to define a clear-cut application procedure.
- Two evaluations (1981 and 1991) established clearer processes.
- The UNCED conference in 1992 started a lot of activity within the MAB-programme: for example stronger cooperation with the committees of the Conventions for World Heritage, Wetlands as well as with the new Conventions on Desertification and Biodiversity.

Model regions for sustainable development

Above all the UNCED and the Report of the Brundtland Commission, dated 1987, made the inherent strength of the biosphere reserves apparent: realising sustainable development and implementing Agenda 21. The breakthrough came about at the International Conference on Biosphere Reserves held between 20 and 25 March 1995, in Seville. 387 specialists from 102 countries as well as 15 international and regional organisations took part in the conference. Based on the knowledge gained from the implementation of the Action Plan adopted in 1984, the role of the biosphere reserve in the 21st century was defined. The subdivision into three zones and the requirement of fulfilling three fundamental functions were the prerequisite for designating new biosphere reserves. Furthermore a system of evaluation was introduced; biosphere reserves were to be assessed every ten years to see if they had fulfilled the criteria. In November 1995 the General Conference of UNESCO adopted these documents.

Many countries evaluated their biosphere reserves as a result and increased the quality of the world network significantly by doing so. Many areas were extended; others were removed from the list. The conference 'Seville + 5' 2000 in Pamplona confirmed this distinctive progress. After a series of biosphere reserves had been founded anew in the nineties in Germany – and after four years during which the MAB National Committee was suspended, the evaluation was pressed ahead with as from 2000. A Catalogue of Criteria for the Designation and Evaluation of biosphere reserves in Germany was adopted in 1996, which was, in fact, the implementation of the 'international guidelines' in this country. This Catalogue of Criteria was completely revised between 2004 and 2007, as a result of the findings of more than 10 comprehensive evaluations.

After Minsk and Seville, the third World Congress of Biosphere Reserves will take place in Madrid in 2008 – the next step in the continuing success story of the UNESCO MAB programme is about to take place.

This summary by Dr. Lutz Möller and Eva Kammann (German Commission for UNESCO) is based on the following publications:

Hadley, M. (2005): A Practical Ecology. The Man and the Biosphere (MAB) Programme. In: Sixty Years of Science at UNESCO. UNESCO (Ed.).

Staudinger, M. (1987): Considerations on the origin and development of the MAB-Programme. Address at the 21st session of the German MAB National Committee (unpublished).

Biosphere reserves as concept and tool (2002). In: Biosphere Reserves. Special places for people and nature. UNESCO (Ed.).