
The East Atlantic network of biosphere reserves: its origin, development and future

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Abstract: This paper provides a summary description of the origin, activities and future of the East Atlantic Network of Biospheres (REDBIOS), demonstrating that despite the network's dynamism, there have been and continue to be many obstacles that, a priori, make its viability difficult. Four languages are spoken within the network (French, Spanish, Portuguese and Arabic), two religions are practiced and its participants (currently Azores, Portugal, Cabo Verde; the Canary Islands Spain, Madeira, Portugal, Morocco, Mauritania and Senegal) are located in three different geopolitical areas: Europe, Africa and countries. The direct or indirect benefit of the network has been: (1) the creation of the El Hierro Biosphere Reserve, (2) the creation of the Gran Canaria Biosphere Reserve, (3) the enlargement of the La Palma Biosphere Reserve to include the whole island, (4) the profound transformation experienced by the Arganeraie Biosphere Reserve and (5) the creation of the Senegal River Transboundary Biosphere Reserve between Mauritania and Senegal. In conclusion, the Network's future does not appear to be compromised and it is currently development a common group project called 'Local Agenda 21 of Macaronesia'.

Keywords: Macronesia; biosphere reserves; sustainable development; rural tourism; the mid-Atlantic ridge; protection of natural spaces; local populations; agenda 21 and biosphere reserves; Islands and sustainable development.

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Biographical notes: Juan Antonio Menéndez-Pidal was born in 1930. He has been a Professor of Constitutional Law at the Universidad de Madrid and is the Director of International Cooperation at Spain's Ministry of Education and Science. He is also an Education and Science Advisor to Spain's Permanent Delegations to UNESCO and the OECD and Member of the Spanish MAB Committee, Member of the Spanish Fulbright Commission and Member of the Joint Committee on Spanish-North American Cooperation for Education, Science and Culture. Currently, he is a Member of the National Spanish Commission of Cooperation with UNESCO, Vice-president of the Responsible Tourism Institute (ITR) and of the Friends of Biosphere Reserves Association (ARBIOS) and Representative of the Latin Union of Spain.

1 Introduction

REDBIOS is an informal network of Biosphere Reserves or of Biosphere Reserve Projects created under the sponsorship of UNESCO and involved with the Man and Biosphere (MAB) Programme.

The Network is currently formed by representatives of Azores (Portugal), Cape Verde, Canary Islands (Spain), Madeira (Portugal), Morocco, Mauritania and Senegal being the categories of its members very varied. In that way, Azores is represented by the Insular Autonomous Government; Cape Verde by the Ministry of Environment; Canary Islands by the Government of Canary Islands and their Biosphere Reserves, meaning the Biosphere Reserve of La Palma, the one of El Hierro, the one of Lanzarote and of Gran Canaria; Morocco by the Biosphere Reserve of Arganeraie, the MAB Committee from Morocco and the Ministère des Eaux et Forêts; Mauritania by the Ministère du Développement rural de l'Environnement (MDRE) and the Biosphere Reserve of the Diawling and Senegal by the Biosphere Reserve of the Saloum Delta and the Ministère de la Jeunesse, de l'Environnement et de l'Hygiène Publique.

Precisely, this odd and informal composition is, and has been, one of the main reasons why the REDBIOS Network has been still working with great fluidity and free from bureaucratic and administrative obstacles and limitations.

The Network as such has no headquarters or operative system, being the ARBIOS the non-governmental organisation the meeting point that ensures the administrative and functional coordination of the Network.

The composition of the Network itself is a clear example of the serious difficulties that the Network should encounter in order to function appropriately. It is enough to remember that:

- 1 the official languages of its participants are four: French, Spanish, Portuguese and Arabic
- 2 the religions of its participants are two: Catholic and Islamic
- 3 according to the United Nations' distinction, its participants are in three different geopolitical areas, which are: Europe and North America, Arabic countries and Africa.

Therefore, everything seems to predispose the presence of obstacles that hinder the existence, and above all, the functioning of the Network. And yet, it works and also it works actively. Which can be the reasons for this apparent contradiction?

First of all, the informal nature of the Network, which makes the relationships among members, be fluid and transparent. Secondly, the absence of administrative obstacles. Thirdly, the good predisposition of the participants who practically use only two languages in their meetings. Finally and undoubtedly, the most important aspect, the conviction of the participants that the cooperation among each other can be possible and useful.

Here, I would like to point out the agglutination work that the UNESCO has carried out, through its Division of Ecological and Earth Sciences without contributing with great sums of money, has managed to maintain the sacred fire and raise enough funds so that the contributions from the members supported the Network.

But it may be convenient, before analysing the Network more deeply. To remember that its name has been deliberately searched for among its members and established as

East Atlantic Network of Biosphere Reserves; name that is only applicable in French (Réseau Est Atlantique de Réserves de Biosphère) and that the acronym REDBIOS would be the only one for all the languages.

2 History

REDBIOS was not born spontaneously or in a single meeting. REDBIOS is the result of a long process of meetings and agreements.

I REDBIOS meeting

Praia, Cape Verde, 24–29 September 1998

The first Meeting, or the germ, was a seminar held in Cape Verde from 24 to 29 September 1998 between the authorities of the Ministry of Agriculture, Food and Environment of Cape Verde and the Insular Town Council of Lanzarote.

The seminar, sponsored and promoted by UNESCO, was organised and carried out by ARBIOS, Asociación de Amigos de Reservas de la Bisofera at the request, precisely of UNESCO.

The seminar had as goals:

- 1 to define together the future Biosphere Reserve of Cape Verde, its boundaries, zones, land uses, government system, etc.
- 2 to acknowledge a public commitment to the creation of the Reserve and its development
- 3 to establish cooperation links between the Biosphere Reserve of Lanzarote and the future one of Cape Verde
- 4 the creation of a legal framework as reference
- 5 finally, the identification, evaluation and study of the most urgent and priority cooperation projects.

The Seminar was developed into two very differentiated parts. The first one, with the visit of the participants of UNESCO, Lanzarote and ARBIOS to the Islands of Sal, Boavista and Maio which had been identified as possible parts of the Biosphere Reserve. The second one took place in Praia, where with a better knowledge of the reality, the definition of the Reserve together with the ways towards its creation were studied, and also the bases for the cooperation between the future Reserve of Cape Verde and the one of Lanzarote were defined.

For this purpose, a cooperation framework agreement between the Ministry of Agriculture, Food and Environment of Cape Verde and the Insular Town Council of Lanzarote was signed.

Also, a series of cooperation projects between both institutions was defined.

Even when the creation of REDBIOS was not dealt with in the meeting, the creation of cooperation links between both entities was already thought of, due to their great development potential and with prospects of establishing links with other Biosphere Reserves situated in the Atlantic Ocean, and, as was mentioned in Cape Verde, of similar characteristics. Therefore, even though REDBIOS was not formally dealt with, the members of this Network have considered and still consider this Meeting as the first one of the REDBIOS Network.

*II REDBIOS Meeting
Agadir, Morocco, 6–11 April 1999*

Essential to the constitution of the Network was the Informal Meeting that, also convoked by UNESCO and within the framework of the Project Integrated Biodiversity Strategies for Small Islands and Coastal Areas (IBSICA) took place in Agadir (Morocco), from 6 to 11 April, 1999.

The Meeting, which had the cooperation of the Institut Agronomique et Vétérinaire Hassan II and the Autonomous Government of Canary Islands, was also technically organised by ARBIOS. It was attended by representatives of the Biosphere Reserves of Lanzarote (Canary Islands, Spain), of Los Tiles (La Palma, Canary Islands, Spain), the Project of Biosphere Reserve of El Hierro (Canary Islands, Spain), of Arganeraie (Morocco) and of the Saloum Delta (Senegal). Also, representatives of the United Nations Environment Programme (UNEP), of UNESCO and of Canary Islands Government were presented.

Although due to technical reasons, the representative of Cape Verde could not attend, he approved the conclusions that were adopted in Meeting. No doubt, the most important of all was the formal creation of the Biosphere Reserves' Network that included in that moment, all the Biosphere Reserves or projects of Biosphere Reserves together, that is to say, El Hierro, Lanzarote, Los Tiles, Cape Verde, the Arganeraie and the Saloum Delta, naming the Network, *East Atlantic Network of Biosphere Reserves* and in French, *Réseau Est Atlantique de Réserves de la Biosphère* and the logo that appears at the top of this paper was adopted.

Besides, the acronym for the Network was approved, naming it REDBIOS, and its logo was adopted.

Therefore, we can say that REDBIOS was formally born in Agadir.

During the meeting, apart from visiting exhaustively the Arganeraie Reserve and making a series of recommendations that were of great utility to the authorities of Morocco for the development of the Reserve, the general organisational guidelines of the Network were established, as well as defining the cooperation and study lines that have been later developed in subsequent meetings. In that way, for instance, in Agadir, it was settled that they would deal with topics such as the participation of local people, the management of the water and water resources, sustainable tourism and the technologies for sustainable development.

It was also entrusted to ARBIOS the production of a publication about the Network.

Finally, there was a manifestation of a willingness to open to new Reserves or Reserve Projects and the desire to incorporate them to the Network.

In the last place, the participants agreed to meet again in Senegal in the year 2000.

*III REDBIOS Meeting
Dakar and Saly, Senegal, 8–12 February 2000*

Just as it was planned, the REDBIOS Network, and also, within the IBSICA Project framework, the III Network Meeting was held in Dakar and Saly, (Senegal) from 8 to 12 February 2000.

This meeting was attended by representatives of the most Biosphere Reserves members of the Network of the Government of Senegal, the Government of Canary Islands and of the MAB Committees of Spain and Senegal. The Director of the UNESCO

Regional Office in Dakar, a representative of the Division of Ecological and Earth Sciences from UNESCO, the President of the International Council of the MAB Programme and representatives of UNEP, of IUCN and of the Club BioRed were also presents.

The scientific and technical organisation of the Meeting was carried out by ARBIOS.

The meeting had three differentiated parts, one in Dakar, in the premises of the UNESCO Regional Office, another one in Saly and finally, there was a significant field trip.

The most important aspects of the meeting were the followings. In the first place, the Network members decided to consolidate it and expressed a coincidence of opinions about the problems that they considered the highest relevance and to be able to cooperation. Among these, they highlighted the ones regarding an adequate and active participation of the populations in the management and development of the Reserves; the ones referred to providing the Reserves with a suitable legal and administrative framework; those about forming technical and management staff and the ones about water management.

Later, the Meeting was divided into two working groups. One devoted to the examination of the current and future problems of the Network and, another one is in charge of structuring the bases of one or several motivating projects.

The first group, which worked under the chairmanship of the President of the International Council of the MAB Programme, stressed the need for a permanent monitoring and scientific evaluation of the activities of the Network, as well as the need to introduce and instrument, quick and simple coordination mechanisms to favour and facilitate the relationship among the members. Thanks to this recommendation, which has been strictly followed the Network has not been provided with any administrative system and the fluidity of the communication among its members is a tangible reality.

The second group, chaired by the representative of UNEP, tried to issue a cooperation project, entitled "Conservation and sustainable development of the biodiversity in the Network".

An important part of the Meeting was, as it used to be the exchange of information among the Network members about the activities carried out since the previous Meeting.

This task was favoured by the presentation from ARBIOS of a document drawn up cooperatively with the Government of Canary Islands, in which they recorded, just as in the Agadir meeting had been planned, not only the Report about that meeting, but also detailed information concerning the Biosphere Reserves or Biosphere Reserve projects members of the Network.

As above mentioned, there was a detailed visit around the Biosphere Reserve of the Saloum Delta, and an evaluation Meeting about that visit in which recommendations were made about its future, which have been very useful to the Government of Senegal at the moment of organising the development of the Reserve.

Finally, the representative of the Government of Canary Islands invited the participants to hold their following meeting, that is the fourth one, in Canary Islands.

IV REDBIOS Meeting

Tenerife and La Palma, Canary Islands, SPAIN, 29 January–2 February 2002

Undoubtedly, this Meeting is the one with the most intellectual, technical and practical importance of the ones held by the REDBIOS Network.

The following three aspects are pointed out. Maybe the most important one was the expansion of the Network. In fact, it was attended not only by all the former Reserves, meaning Arganeraie (Morocco), the Saloum Delta (Senegal), Lanzarote (Canary Islands, Spain), Los Tiles (Canary Islands, Spain) and Biosphere Reserve Project of Cape Verde. It was also attended by the Biosphere Reserve of El Hierro, created in 2000 and I dare say, partly thanks to the impulse and cooperation of REDBIOS, the Biosphere Reserve of Diawling in Mauritania and the Biosphere Reserves Projects of Azores (Portugal) and Madeira (Portugal). Also, the Network of Biosphere Reserves of Andalucía was represented.

Later, we will take a look at the important agreements adopted during the Meeting.

This Meeting, like the previous ones, was promoted by UNESCO, the Government of Canary Islands and the Town Council of La Palma and the Biosphere Reserve of Los Tiles cooperated very actively.

Also, it was organised by ARBIOS at the request of UNESCO.

The Meeting had two very differentiated parts. The first one, held on Tenerife Island, was called “1st Macaronesian Meeting for sustainable use of natural spaces”. In its course, there was a discussion about the issue in which all the REDBIOS Network members gave specific presentations and a round-table discussion devoted essentially to analysing the cooperation systems, both bilateral and multilateral, which could be used to obtain a sustainable use of natural spaces.

An outcome of both meetings was the presentation and unanimous approval of the “Statement about sustainable use of natural spaces of the Macaronesian environment”.

There, after stating the bases to a permanent cooperation among the participating Regions in the Meeting about sustainable use of natural spaces, it was decided to promote a twinning among them, the creation of organs of participation, the increase of citizen participation, the adoption of Plans for public use and finally, they planned the creation of a Network of natural spaces of Macaronesia.

This Statement had great repercussions in the media of the participating Regions.

The second part of the Meeting, devoted mainly to the REDBIOS Network, took place on the Island of La Palma and it was attended not only by the representatives of the Biosphere Reserves members of the Network, but also by the authorities of La Palma Town Council and the Mayors of the towns included within the Biosphere Reserve of los Tiles.

The Meeting had a main discussion topic, following in that way the approved model, as we have seen before in the Agadir Meeting, ‘Rural tourism in the Biosphere Reserves’, carried out, precisely, by the Biosphere Reserve of la Palma.

In its presentation, after defining the rural world as those areas and regions which include natural and cultivated spaces, towns, small cities and regional centres, an economic and social context was evoked, that functions as buffer and regenerative space. Due to this, the rural world is vital to the ecological balance and is, at the same time, a privileged place for relaxation and leisure.

To summarise, during the Meeting these were highlighted:

- the need to define the value of Biosphere Reserves as tourist destinations
- the importance of the diversification of the product and territorial settling
- the valuation and regularisation of the complementary offer
- the quality of the product at all levels

- the rigorous control in territorial planning
- the control of the loading capacity.

These following conclusions of the Meeting were:

- a need to deepen the discussion about the management and administration of rural tourism
- the need for a balance in tourism in general in the Region with sustainable development
- the absolute urgency to consider the local people as main beneficiaries of income coming from tourism
- finally; they agreed on the urgency to establish a clear definition of rural tourism as well as to instrument quality guidelines with their necessary adaptations to the local circumstances
- in the practical aspect, the fundamental agreement to expand the REDBIOS Network to Azores, Madeira (Portugal) and Mauritania was adopted.

They made some recommendations that had certain relevance later. In that way, for example, they recommended and offered their cooperation for the expansion of the Reserve of Los Tiles to the entire Island of La Palma, which, as we know, took place that same year.

Also, they decided to provide technical support for the creation of a transboundary reserve which covered the Diawling Reserve in Mauritania, and Djoud in Senegal. This transboundary Reserve, named Biosphere Reserve of the Senegal River, was created in 2005 being, perhaps, one of the most important results of the existence of REDBIOS Network.

Lastly, it was agreed to give technical assistance to the Projects of creation of new Reserves in the Region whose results will be looked at in later stages.

In the practical aspect, and as it is traditionally done, on Tenerife Island there was an exhaustive visit to the Teide National Park and on the Island of la Palma, to the, by then called, Biosphere Reserve of los Tiles and the rest of the island with the idea of providing elements for its expansion.

Before their separation, it was decided to accept the invitations of Mauritania and Azores to hold, respectively, the V Meeting in 2002 in Mauritania and in 2003 in Azores.

V REDBIOS Meeting Nouakchott, Mauritania, 8–14 December 2002

Just like it was planned, the 5th Meeting of the Network took place in Nouakchott, (Mauritania), from 8 to 14 December 2002, convoked also by UNESCO and organised by ARBIOS, which was attended by all the members of the Network.

The Meeting was divided into three differentiated parts. The first one, as it had been planned, represented the main topic of the Meeting and was devoted to studying ‘the cooperation and fight against poverty, foundation of the conservation of the Biosphere Reserves’.

The topic was developed by the delegation of Mauritania who, in their intervention, after pointing out that poverty affects particularly the rural zones, where extreme poverty is concentrated, mentioned the main fighting methods based on the creation of a national strategy of reduction of poverty which promotes universal access to the basic services, bearing in mind the evolution of the concept of conservation and effective participation of local people, all this within a decentralisation framework.

They recommended the implementation of a national Plan in favour of the environment and the sustainable development, in which the fight against poverty and the improvement of the access to basic services should be essential elements.

Lastly, they emphasised the importance that the figure of protection and development that the Biosphere Reserves represent, has for the solution to the problems of poverty.

Although it was outside of the main topic, they also analysed the Mauritanian environmental Plan, and in particular, of the National Park of Diawling, thinking of turning it primarily into a Biosphere Reserve, and ultimately, seeking the creation of a transboundary Reserve with Senegal, which, we have seen earlier, is already a fact.

In the last place, the representatives of la Palma Biosphere Reserve introduced the topic 'technological innovation in environmental education', setting as example work done on Canary Islands.

In the second part, and as regards the participants' Reports about their respective executions, there was special interest, due to its novelty, the one provided by the representatives of Madeira, who, for the first time, made reference to the Project of creation of a Biosphere Reserve in the archipelago of Madeira.

The third part of the meeting was devoted to reflecting about possible projects to develop by the Network, from which maybe it is wise to highlight the ones referring to the instrumentation of the Arganeraie Reserve, the promotion of rural tourism in the Network Reserves, the fight against poverty and, above all, the support to the creation of new Reserves or the merger of Reserves.

During the meeting, some general conclusions were made, from which these stand out:

- General acknowledgement of the fact that Biosphere Reserves are a highly effective tool in the fight against poverty in the countries of the Region even with the condition of being inserted in the framework of a national strategy. Within this context, it was unanimously acknowledged the need for an active participation of local people in the management and administration of the Network Reserves.
- Apart from that, it was acknowledged the specific aspect of the Rural areas protected for the restoration of the preexisting ecosystems and the need to use for this purpose, means and systems especially suited to it.
- Besides this, it was made explicit the importance of developing the humid zones existing in arid systems of the area in the same way as it is done in the insular terrestrial systems in the ocean.

As it is traditional in the REDBIO Network, there were visits to the Kermacen camp and the Diawling National Park and there was another one planned to the historic and monumental Chinguetti village, which could not be made due to an accident experienced by the author of these lines who, from here thanks the solidarity that his partners showed with him.

Informal Meeting in Madeira (Portugal), 15-19 January 2004

In an informal way and convoked by UNESCO and the Secretaría Regional do Ambiente e Recursos Naturais de Madeira (Madeira Regional Office of Environment and Natural Resources), an Informal Meeting of the REDBIOS Network members was held on the island of Madeira, attended by representatives of Madeira and of the Biosphere Reserve Network of Canary Islands. This Meeting was also organised technically by ARBIOS.

The Meeting had a double goal. On one hand, an exchange of opinions to have an assessment of the situation of presence and perspectives of the REDBIOS Network with a view to the organisation of its following Meeting, and on the other hand, instrument a frank and informal discussion about the possible creation of a Biosphere Reserve in the Madeira and Azores archipelagos.

In relation to the island of Madeira, there was wide and very detailed information about the project that was developed in Porto Santo. The participants of the meeting had an important debate about their possibilities and made concrete recommendations regarding the Project.

During their stay in Madeira, they also had the opportunity to visit in situ the island of Porto Santo and meet with the local authorities. Unfortunately, this project did not come to a happy conclusion and was never presented to UNESCO.

With reference to a possible Biosphere Reserve in Azores, the representatives of that island issued a presentation, also very complete, of the possibilities, concluding, due to its convenience, that the future Biosphere Reserve could be located on an island of the Western group of the archipelago.

It was very positive that the participants offered their collaboration to travel to Azores and hold an informative session with the local authorities from the different islands about the concept and functions of the Biosphere Reserves.

As regards the future of the Network, the most important topic was the presentation from the representatives of the Biosphere Reserve of la Palma, of a wide Project about the application of Local Agenda 21 in the Biosphere Reserves.

The Project was highly welcomed and considered as possible medium-term agglutinative tool in the future of REDBIOS, and it was decided to deal with it in-depth in the next REDBIOS Meeting.

For this purpose, the representatives of Azores offered their archipelago as venue for the VI Meeting just like they had offered it in the Senegal Meeting.

VI REDBIOS Meeting

Horta, Azores (Portugal) 16–19 September 2004

The VI Meeting took place in Horta (Azores) from 16 to 19 September, 2004 as usual, convoked by UNESCO and organised by ARBIOS with the cooperation of the authorities of the Regional Secretariat of Environment from the Government of Azores and the Government of Canary Islands.

It was attended by representatives of Canary Islands (Spain), Madeira (Portugal), Morocco, Mauritania and Senegal.

The President of the International Council of MAB Programme from UNESCO was also present and he highlighted the excellent work the REDBIOS Network is carrying out against the desertification which the Sahara is treating the Macaronesia.

Among the topics dealt with, we will highlight in the first place, the exhaustive presentation that the representatives of the Biosphere Reserve of La Palma gave about what they had already stated in the previous Meeting, which is the Project called 'Local Agenda 21'.

This project, just like in the previous meeting, aroused great interest among the participants and in order to consolidate it, a specific working group was created, that drew up a 'Statement of intentions', which was unanimously approved.

According to it, REDBIOS agreed to put into practice these actions:

- activate and consolidate the local human and technical capacities in view to the training and management
- select the indicators which are applicable to each existent or potential Biosphere Reserve and to the Network itself
- develop the Local Agenda 21 in the existing Biosphere Reserves or in process of creation
- create an action plan of the Biosphere Reserves of the Macaronesia
- instrument a communication and awareness-raising plan to make the inclusion and support of the local people possible during the execution of the activities of the Project.

For the dynamic transformation and execution of this Project, it was entrusted to the Biosphere Reserve of la Palma in coordination with ARBIOS.

A very important topic in this Meeting, especially because it request of the cooperation from all the REDBIOS members, was the presentation, from the authorities of Azores, the so-called Biosphere Reserve Project of the Mid-Atlantic Ridge.

The part of the Ridge which would be the most interest area from the Reserve is situated in the southwest of the Azores and has been chosen as example for study by scientists and scholars due to its closeness to the Azores archipelago and due to its shallow situation. The area has received numerous scientific expeditions to study geological evolution. The area is characterised by the hydrothermal vent that enable the study of the energy of the centre of the Earth, its influence on the ocean temperature, the genesis of the Earth and the possible development of the life. In this area, the Plate Tectonics move, the inner magma of the Earth comes out and there are submarine eruptions, the water penetrates inside of the faults produced, which makes it richer with materials with hydrogen, methane and carbon dioxide.

The Reserve, therefore, would affect and include all the islands of the Azores archipelago and a wide maritime zone which would affect the coastal areas of the islands, the submarine mountains, the hydrothermal sources and the abyssal plain.

The main objective of the conservation of the marine heritage of the Azores is to safeguard the biodiversity and cultural heritage of the marine environment promoting its sustainable use for the benefit of the people from Azores.

The selection of the Biosphere Reserve area has been made after considering it as representative of different kinds of habitats, of ecological processes, of biological communities and physiographical structures.

To sum up, the future Reserve would include not only the Portuguese territorial waters, but also the area of exclusive marine exploitation, which would make it an authentic international Reserve.

Apart from its scientific interest, it would allow a global utilisation of the terrestrial and marine environment with a clear benefit not only for the affected people, but also for the mankind.

Besides, it would favour a global outlook of the environmental problems and an obvious reduction of conflicts among the users of the marine environment.

The presentation was followed with great interest from the participants, who showed their total and whole-hearted support, after emphasising both scientific interest and the human development importance of the Project.

During the debate in which all the participants took part, they discussed and analysed the most suitable strategies possible to carry out properly as well as the probable administrative and legal difficulties may be encountered.

One other relevant topic of the Azores Meeting was the presentation from the representatives of the Grand Canary Island, of a Project for the creation of a Biosphere Reserve on that island.

In the presentation, the representative of Grand Canary highlighted the complexity of the island with great geographic variety, settled over a volcanologic evolution particularly expressive and diverse. The island has representative ecosystems from Canary Islands with a biodiversity in which the highest population density of the archipelago (450 inhabitants/km²) and a high visitors' rate (4 million tourists per year) coexist.

It demonstrated the coexistence on the island of high natural values (45% of the insular territory is protected natural space) with a high population rate which has been possible, among other reasons, because of the historical reasons of the island so that currently 50% of the population is concentrated in less than 7% of the territory.

We must add that the high level of environmental awareness of its inhabitants also has contributed in a significant way to this coexistence.

It finally stated that, with this proposal, the Grand Canary Town Council tried not only to contribute to the socio-economic development of local peoples, but also to show, according to the insular model, that it is possible to have high natural and traditional values near highly-technified agricultural zones, together with densely-populated areas, by establishing synergies between each other.

The proposal of the Biosphere Reserve had been created respecting the MAB Programme criteria, and especially, the ones resulting of the Conference of Seville. Territorially, it integrates totally or partially, 7 of the 21 Town Councils of the island, which represent one third of the insular territory in its Western side, and hosting about 3% of the population of Grand Canary (around 20,000 inhabitants).

Centred in two core zones (Integral Natural Reserves of Inagua and Special Natural Reserve of Güi-Güi), these, as well as the buffer zones and transition areas have preexisting protection figures (Reworked Text of Territory and Natural Spaces' Regulation of Canary Islands or LICs of the Natura Network 2000).

It includes a terrestrial area (from 0 to 1500 m.s.n.m.) and the surrounding marine area (as buffer zones and transition areas). We must add to the natural values a spectrum of humanised landscapes, witness of a historical relationship of man with this environment, where the archaeological testimonies and places of ethnographic interest abound.

After the presentation, which was followed with great interest, there was a debate session where practically all the participants took part, emphasising the positive points of the process.

In short, we can say that the participants acknowledged the intrinsic interest of the Project and decided to support it.

The third most significant point was, the analysis of the Project 'Local Agenda 21 of the Macaronesia' which, as mentioned earlier, had been presented in the previous Meeting and, once more, was welcomed with great interest by the participants, stressing that this Project could, and had to be, the main REDBIOs activity in the short and medium-term.

Lastly, the participants informed about the foreseeable future of their Reserves.

Among information that received consideration and support of the participants, the following are stressed:

- the development of the potential Biosphere Reserve of Madeira
- the possible creation of Biosphere Reserves over the palm grove and the transhumance in Morocco
- the Intercontinental Reserve Project of the Western Mediterranean Reserve which would cover the Higher Maghreb of Morocco and the Subbética of Spain and precisely, with the technical support among others, from REDBIOs, became a reality in 2006
- the representatives of Mauritania informed about the easy going of the Biosphere Reserve of the Senegal river, whose monitoring Committee had got together several times.

Before the end of the Meeting the representatives of the Gran Canaria island proposed, and it was accepted, to hold the 7th Meeting of the Network in Grand Canary in November 2005; and that the main theme would be 'The problems of water in their broaden dimension', topic that would be presented and drawn up jointly with the Network members from Morocco.

Also, as usual, during their stay in Azores, the members of REDBIOs undertake two field visits, followed by technical discussions; one to the World Heritage Landscape of Vinha do Pico and Natural Reserve of Montanha do Pico, both on the island of Pico and the other one, to the Volcano dos Capelinhos on the island of Faial.

Informal Meeting San Miguel, Azores (Portugal), 4-8 July 2005

From 4 to 8 July 2005, took place in San Miguel (Azores and Portugal), convoked by UNESCO and the General Environment Management of the Autonomous Government of Azores, in Furnas (San Miguel and Azores), an Informal Meeting, organised technically by ARBIOs, which was attended by representatives of Madeira (Portugal), Canary Islands (Spain) and authorities of Azores.

The main objectives of the Meeting were, on one hand, to prepare the 7th Meeting to be held in Las Palmas of Grand Canary (Canaries and Spain) the following November, and on the other hand, to examine and discuss with the competent authorities of Azores about the potential creation of a Biosphere Reserve in that archipelago.

With reference to the first point, the Programme and the participants for the Meeting of Las Palmas were completely finished due to the excellent preparation carried out by the Canaries authorities.

About the second point, the authorities of Azores gave a detailed presentation of the elements that could constitute the future Reserve that would cover the islands of Corvo and Graciosa.

After the acknowledgement of the value of the proposal, the participants made a very detailed analysis of it and gave very clear recommendations as to the zonation and management systems of the future Reserve which were very appreciated by the authorities of Azores.

Here, in this Meeting, it was clearly demonstrated the importance of the REDBIOS Network in the cooperation for the creation of Biosphere Reserves in the Region, not only providing information, but also studying and analysing in detail the existing proposals.

Finally, the representative of the island of La Palma, gave a clear presentation of the situation and difficulties of the Project 'Local Agenda 21 of the Macaronesia', which he hoped to be definitely implemented in the following Meeting in Grand Canary.

As it is tradition, there was a very exhaustive visit to the protected places of the San Miguel island.

VII REDBIOS Meeting

La Palma, Grand Canary (Canary Islands, Spain), 16–19 November 2005

Just as planned, the 7th Meeting of the REDBIOS Network took place in two stages in Canary Islands from 16 to 19 November 2005.

The first stage, held on 16 November on the island of La Palma, had a main goal to sign an Agreement of joint action for the execution of the project 'Local Agenda 21 in the Macaronesia', as we have been mentioning, was one of the objectives of the Network.

This Agreement was solemnly signed by the representatives of UNESCO, of the Government of Canary Islands, of the Biosphere Reserves of la Palma, el Hierro, Lanzarote and las Palmas, of the Autonomous Governments of Madeira (Portugal), of Cape Verde, of Senegal, of Mauritania and of Morocco, and by ARBIOS.

In virtue of the Project, the signatories committed themselves to carry out some actions:

- training of trainers in the Biosphere Reserves aiming mainly at obtaining the necessary practical knowledge to apply the Local Agenda.
- development of a general system of indicators for all the Biosphere Reserves of the Macaronesia.
- issuing an Action Plan for each Biosphere Reserves or Biosphere Reserve Projects which signed the agreement.
- instrumentation of the conjunction of all the Action Plans, a global Action Plan of all Biosphere Reserves of the Network.
- identification of financing lines of the actions included in the different Action Plans.
- creation and implementation of a Communication Plan.

The execution of the Project was in charge of the Biosphere Reserve of la Palma, under the technical direction of ARBIOS.

The second part of the Meeting was held on the island of Grand Canary and these three aspects were successively dealt with:

- A Just as expected, the main theme of the Meeting was devoted to the debate about 'Biosphere Reserves and water', which was presented by the Biosphere Reserve of Grand Canary and supplemented by an exposition given by the Biosphere Reserve of Arganeraie.

In their presentation, after a wide analysis of the historic situation of the water shortage in the archipelago of Canary Islands, they informed about the processes of desalination and utilisation of renewable and experimental energies on the islands.

Finally, they gave a complete presentation on the hydrologic Plan of Canary islands.

The presentation was supported by a visit to the facilities of the Technologic Institute of Canarias and the X International Water, Energy and Environment Fair.

- B The second aspect that we were referring to earlier, was the introduction to the Network of the Biosphere Reserve of Grand Canary itself, which had been declared as such by UNESCO that same year. A very detailed visit to the Reserve was carried out, whose highest point was the opening of its Visitors and Interpretation Centre.

During the debate that followed the visit, there were suggestions as to the presentation of the Reserve and the possibility of its expansion to other parts, even the whole island.

- C As for the third aspect we mentioned before, there was a deep reflection about the future of REDBIOS, where all the participants unanimously pointed the need to continue with the processes of mutual information, the search for agglutinative projects and the internal cooperation in the creation and improvement of the Reserves' management.

Finally, they agreed that the main topic of their following meeting to be held apparently on the island of El Hierro, would be devoted to 'Biosphere Reserves and local economies'.

Both Meetings had been organised technically by ARBIOS in collaboration with the authorities of both Reserves.

3 Executions and conclusion

We have made a summary description of the historic path of REDBIOS. It is enough to read it in order to know what it is and what it has produced during its years of existence.

As we said at the beginning of this paper, despite all the difficulties and problems, it is still a Network and it is a Network that works as such.

We will very briefly try to point out which have been for us the most visible outcomes of the Network.

The first one is, undoubtedly, its survival and existence. In fact, in spite of all the difficulties that hinder its existence, from which a significant one is the scarce financing, the Network, thanks to the good predisposition of its participants and faith in the future, has been able and is still able to fulfil a duty to inform, cooperate and instrument projects.

Directly or indirectly, and I do not mean to be immodest, the Network has contributed very efficiently to the creation of the Biosphere Reserve of El Hierro; to the creation of the Biosphere Reserve of Grand Canary and to the expansion to all the island of the Biosphere Reserve of la Palma.

It has also been, partially, fruit of its work, the transformation of the Biosphere Reserve of Arganeraie, which, at an early stage was more concerned about forest conservation than taking deeply into account the factors of sustainable development and of participation and development of the peoples and their products.

We should not forget, besides, the role that REDBIOS has played in the creation of the Transboundary Reserve of the Senegal river between Mauritania and Senegal.

During its meetings, they have dealt with and debated topics of thorny current importance, such as 'Hunger and Biosphere Reserves', 'Rural tourism and Biosphere Reserves' and 'Water and Biosphere Reserves'.

A result of its work has been the adoption of the significant 'Statement about sustainable use of natural spaces of the Macaronesian environment'.

Of no less importance, although, so far it has not given the expected results, has been the cooperation given to Cape Verde, Madeira and Azores in the creation of their future respective Biosphere Reserves. Let us hope that one day these Reserves will be a tangible reality.

Finally, the Network has produced an important document fund and has devised several cooperation Projects, from which we stress the one currently being carried out 'Local Agenda 21 of the Macaronesia'.

I would not like to conclude without stressing that perhaps one of the most important causes of the survival of the Network has been, precisely, its informal nature and the absence of administrative mechanisms of coordination and control. This has made possible that, with scarce resources, the communication and contact among the members of the Network have been fluid, direct and human.

Lastly, allow me, on behalf of ARBIOS, which has acted throughout the process as linkage among the Network members, to thank UNESCO, the authorities of the countries, Regions and Reserves who have been the real protagonists of the Network due to the trust they have put in us, but above all, I wish to extend this gratitude to the participants of the Network who have shown friendship bonds that are for me a special honour.

References

The following REDBIOS Meeting Records have been used as references:

- Praia (Cabo Verde), 24–29 September 1998
- Agadir (Marruecos), 6–11 April 1999
- Dakar (Senegal), 8–12 February 2000
- Tenerife y La Palma (Canary Islands, Spain), 29 January–2 February 2002

- Nouakchott (Mauritania), 8–14 December 2002
- Madeira (Portugal), 15–19 January 2004
- Horta (Azores, Portugal), 16–19 September 2004
- San Miguel (Azores, Portugal), 4–8 July 2005
- La Palma, Gran Canaria (Canary Islands, Spain), 16–19 November 2005.

The working documents presented or produced as a result of these meetings have also been utilised.

The meeting records can be found at: <http://www.unesco.org/mab/>.