Environmental Education

As we are making our way into a new millennium, mistakes of the past can be replaced by positive action for the future. Global peace, good health and respect for the environment can become a reality, and the participation of every one of us is needed for the construction of this tower of hope and vision. A tower that may allow light and brightness to prevail over confusion and anxiety.

Changes in the attitudes of people throughout the world can be achieved by raising awareness of existing environmental threats and by eliciting an all-encompassing appreciation of bios. Institutions and individuals are therefore urgently requested to participate in the establishment of an International Court of the Environment, which will impart the leadership and vision necessary to prevent further catastrophes.

The International Court of the Environment Foundation and all of its distinguished members, the Secretary General of the Permanent Court of Arbitration, Supreme Court justices, law professors and other eminent personalities are promoting an urgent initiative aiming at global environmental justice and the right to a clean environment. The Biopolitics International Organisation (B.I.O.) is proud to be part of this effort, and we therefore held a meeting in Athens, on January 20-22, to discuss future plans and action.

This meeting was a follow-up to meetings held in the Hague, Washington D.C., New York and Rome, and we hope it will make a significant contribution towards the launching of an internationally acknowledged legal mechanism for resolving environmental disputes. B.I.O. emphasizes that, rather than developing into yet another positive institution, it is important for the International Court of the Environment to function in the spirit of arbitration and conciliation, under the auspices and guidance of the Permanent Court of Arbitration.

On behalf of the B.I.O. Board of Trustees, I would like to thank all who contributed to the realisation of this meeting and especially the sponsors who make it possible for us to pursue our goals for a brighter future.

Agni Vlavianos-Arvanitis

Tjaco van den Hout
Secretary General, Permanent Court of Arbitration, The Netherlands

The difficulties encountered in the relationship between social interest for the protection of the environment and nature on the one hand, and economic interests on the other, are being redressed (trade, foreign investment). New approach methods are being discussed in order to bridge the existing gap and resolve tensions. It is becoming evident that there is no existing framework for the exchange of opinions, to which states, governmental agencies, non governmental agencies, multinational enterprises and individual citizens will have access, when there is a need to find solutions on matters concerning the protection and conservation of the environment.

While the process for the establishment of a new institution is under way, the Permanent Court of Arbitration with its 100-year history in resolving international disputes has recently moved in a direction that may provide it with the ability to act effectively in this field.

Francesc Cousteau
President Equipe Cousteau
France

For over fifty years Commander Cousteau shed light on the mysteries of the world oceans and made it possible for us to discover the beauty and fragility of our planet. At the same time, he made us conscious of our responsibility to guard this precious treasure. Today, our planet is endangered and so are the rights of future generations. To the Cousteau Foundation we believe that to safeguard the rights of future generations there is an urgent need for a globally acknowledged executive instrument with the necessary jurisdiction to implement legal regulations for air and water. We therefore ask for a global authority to be established to set standards for air and water and to ensure that they are enforced. We fully associate ourselves with the efforts of the Biopolitics International Organisation and we will join forces to see that this goal is realised.

Bio News

No. 26 - April 2001

A newspaper for the preservation of the bio-environment, a shift from an anthropocentric to a bio-centric vision

www.hol.gr/bio

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Need for an International Court of the Environment

To raise awareness of the need for an International Court of the Environment, B.I.O. sponsored a major conference in Athens on January 20-22, 2001. The conference was attended by many prominent personalities, including diplomats, parliamentarians, business leaders and academics. The Resolutions were disseminated in 111 countries world-wide, in an attempt to promote the urgent nature of this endeavour.

B.I.O. hopes that the international community will acknowledge the necessity for a legal instrument specifically assigned with the responsibility of resolving environmental disputes. B.I.O. also wishes for the International Court of the Environment to act as a beacon of new values for a global appreciation of bios. At a time when our responsibility to save life on our planet is becoming a priority, such models of inspiration are crucial.

see pages 1, 8-10

Paying the price or winning the Prize?

Economic development at the expense of the environment is a disastrous prize. Environmental abuse is a heavy load resting on the shoulders of future generations.

Do we want to pay this price? Do we want to jeopardise our future by imperilling the gift of bios - life - the most precious possession on our planet? Is this our vision for the new millennium? Instead, let us all become involved in the race to save the environment. Let us all become Bios Prize candidates and winners.

Let us all become involved in the race to save the environment. Let us all become Bios Prize candidates and winners.

see Editorial, page 2

Environmental Education Workshop

To assess progress in environmental education, B.I.O. held a workshop in the framework of the dissemination activities of the European Union Leonardo da Vinci Programme. Discussion topics included:

- Why is environmental education essential?
- Defining the environment and the issues at stake.
- Scope and limits of the Bio-Syllabus.
- Teaching and dissemination methods. Teacher training.
- Incorporating environmental education in existing educational systems.

The workshop was attended by scholars and educators from Germany, Spain, Turkey and Greece. The Recommendation drafted upon the conclusion of the deliberations was forwarded to B.I.O. friends and members in 111 countries.

see pages 12-15

Environmental Education Workshop

BIO-EDUCATION & Bio-Syllabus Workshop
Athens, March 23-25, 2001
BIO NEWS
APRIL 2001

Editorial

Pricing environmental abuse

Environmental destruction has been ‘cheap’ because the environment was never priced. Economic development at nature’s expense has been the norm rather than the exception. In a global market, where multinational corporations compete on cost-cutting, the cheapest places on earth for natural resources or labour are precisely those nations which place no value on democracy, human rights or environmental protection. When it is a time of plenty, people can be trusted to exploit all they can before beginning to conserve. And people are seldom frugal on someone else’s bill. As the world is now faced with an environmental crisis of unprecedented proportion, future generations will be called upon to pay a heavy fine. The price of environmental abuse is high. It is not a matter of money in the bank. It is a matter of jeopardising the very continuation of life on our planet. Humanity cannot ‘profit’ from destruction. Sound environmental protection is also sound economic policy. States which put a high priority on environmental protection are states that prosper. Being at the bottom of the economic barrel goes hand in hand with environmental destruction. Lack of care for the environment can be traced directly to the lack of political leadership. Governments show a weak character when environmental planning pits itself against the popular vote. Therefore, to reverse these negative trends, the mobilisation of every individual is needed. The concept of sustainability is expanding, but not enough. If new models are not immediately implemented, there is a danger of perpetuating and not washing away the mistakes of the past.

Business and finance all over the world are quickly orienting towards investments in environmental preservation. ‘Green stock’ options and zero emissions goals for industry are examples of new strategies in the globally expanding investment markets. Cleaner Production strategies are focusing increasingly on the transformations necessary to implement preventive environmental management practices, and international organisations such as the European Union fund initiatives based on strict environmental specifications. Since its inception B.I.O. has proposed a ‘Green Salary’ in place of benefits for the unemployed, with the aim of encouraging the unemployed to get involved in environmental protection. By engaging the unemployed in environmental projects, businesses could be granted special tax cuts and other incentives promoting new job opportunities and economic growth.

But how can we encourage every citizen on the planet to begin involved in environmental protection? The word ‘athletics’ comes from the Greek term athlos meaning achievement, both physical and mental. The Olympic Games is a perfect opportunity to turn the world’s positively focused attention to the environment. Achievements in environmental protection - in all professions and specialties - can be awarded Bioso Prizes so that every individual may participate in the race to save the environment.

Bio News is published by the Biopolitics International Organisation

Publisher and Editor — Agni Vlavianos-Arvanitis
Deputy editor — Helen Papadimitriou
Production design — Christopher Averinos
Editorial consultants — Theoharatos Hlavropoulos, Dimitris Synodinos, Christopher Dimopoulos
Media consultant — Antonis Himonas
ISSN 1106 - 5117

BIO NEWS

2001 SPONSORS

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BIO represented in 111 countries

Africa
Algeria, Benin, Botswana, Burkina Faso, Chad, Congo, Egypt, Ethiopia, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Nigeria, Senegal, Seychelles, South Africa, Sudan, Tanzania, Togo, Uganda

The Americas
Argentina, Bahamas, Barbados, Bermuda, Brazil, Canada, Chile, Colombia, Cuba, Ecuador, Guyana, Honduras, Mexico, Panama, Peru, United States, Uruguay, Venezuela

Asia
Armenia, Bahrain, Bangladesh, Cambodia, China and Hong Kong, Georgia, India, Indonesia, Iran, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Pakistan, Philippines, Saudi Arabia, Singapore, Sri Lanka, Taiwan, Thailand

Europe
Albania, Austria, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, FYROM, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Vatican City, Yugoslavia

Oceania
Australia, Papua New Guinea, New Zealand, Samoa, Solomon Islands

BIO goals

INTERNATIONAL CO-OPERATION FOR THE BETTER UNDERSTANDING AND APPRECIATION OF BIOS (LIFE) AND THE BIO-ENVIRONMENT

The bio-environment recognises no ideological or geographical boundaries, no East-West, North-South or developed-developing countries. Bios provides the unifying force for the harmonious co-existence of all forms of life, leading to a new era of bio-diplomacy.

BIO-CULTURE - BIO-ENVIRONMENT

Textual dimensions for building new societal values for the millennium.

PROMOTION OF BIO-EDUCATION

through the International University for the Bio-Environment, launched in order to reform education world-wide by promoting a biocentric curriculum for every educational level.

BIO-ASSESSMENT OF TECHNOLOGY

A diachronic search for new societal values that will channel technological progress in a direction that leads to a better quality of life through the appreciation of the bio-environment.

INTERNATIONAL LEGISLATION ON BIOS RIGHTS

It is important to protect all forms of life by enacting rules that prevent the deterioration of the bio-environment, and ensure the fundamental right to a clean environment and to a better quality of life.

A WORLD REFERENDUM

to allow for people throughout the world to express their willingness to preserve bios on our planet.

RAISING PUBLIC AWARENESS OF THE RAMIFICATIONS OF THE BIOLOGICAL SCIENCES

in order for more people to realise that progress in the biological sciences relates to their own field of interest. This acknowledgement may lead to new fields of human endeavour, such as bio-legislation, bio-medicine, bio-ethics, bio-arts, bio-linguistics, bio-economics, bio-athletics, bio-computing.

ENVIRONMENTAL OLYMPICS AND BIOS PRIZES

The Biopolitics International Organisation has been proposing the introduction of ‘green’-fees into the Olympic Games, a proposal which has been incorporated as a United Nations Resolution. In order to promote the bio-assessment of technology and a global bio-culture for the new millennium, B.I.O. proposes the establishment of international committees in every field of human endeavour, assigned with the responsibility to assess progress in their respective fields. Bios Prizes in every discipline will be awarded to individuals or institutions that have contributed to the preservation and appreciation of the bio-environment.

PROPOSED ACTION

Action is crucial in order to apply technological progress towards preserving the bio-environment. It is therefore essential to:

• develop a bio-syllabus and new curricula for every level of education, as well as electronic and audio-visual materials on issues related to bios and the environment

• introduce a positive feeling of self-respect in the unemployed by paying a Green Salary instead of benefits, with the commitment to work for the protection of the environment

• encourage a clearing-house for individuals and organisations to provide, through the use of computer link-ups, a network of people wishing to cooperate on the promotion and appreciation of bios

• generate environmental action groups drawing both on the enthusiasm of the young and the experience of senior citizens, to tackle local issues

• encourage a bio-supporting economic strategy to replace destructive policies, and promote a worldwide interdisciplinary exchange of information on the appreciation of the environment

• promote the establishment of a computerised Bank of Ideas in which scientists, scholars and philosophers, as well as any interested party may contribute their thoughts and create a rich repository of information and reflections on bios.
Lifestyles for the Third Millennium
Parliamentary Assembly of the Council of Europe - Meeting in Santorini, Greece

A conference organised by the Council of Europe’s Commit- tice on the Environment and Agriculture, in co-operation with the Helsinki Union, will convene on the island of San- torini, Greece, from 4-6 June 2001. The conference will address initiatives aiming at sustainable development requiring not only the active support of civil society but also - and above all - major changes in our lifestyles. The radical changes which are taking place in the economic, political and information spheres, and of which the environment is only one of several elements, are chal- lenges to our societies, which must not submit to them passively, but must find the best ways of meeting and overcoming them. Dr. Agnii Vlasianu-Aravani has been invited to chair a special section on the “Environment as a Symbol of the Crisis” and will be participating in the conference deliberations along with some other eminent B.I.O. members.

Euro-Arab Conference for the Environment
University of Rostock, Germany, 24-26 April 2001

The 11th Euro-Arab conference for the environment took place in Rostock, Germany, from 24-26 April 2001, with main emphasis on the following subjects:

- Waste management - Recycling - Utilisation Technology
- Disposal and municipal technology
- Water, Sewage and canalisation systems
- Air conditioning systems, used and waste air cleansing sys- tems, filters, compressors, pumps, flue gas cleaning facility, dust protection
- Recycling equipment, control and monitoring facilities, emissions protection
- Building materials

Climate protection and air pollution control
Air conditioning systems, used and waste air cleansing sys- tems, filters, compressors, pumps, flue gas cleaning facility, dust protection, measuring and laboratory equipment, protection equipment, control and monitoring facilities, emissions protection, technical building equipment, domestic technology, etc.

Earth Day 2001

The Biopolitics International Organisation joined the “Action for Sustainable Asia Pacific 21” effort for Earth Day 2001 (ASAP21, former Earth Day Japan International Team). Our common belief is that the feeling of being connected beyond borders brought about through this occasion will con- tribute to making the 21st century a century of environment. And it goes without saying that partnership among NPOs, NGOs and people across the globe established or reinforced through this co-operation will be a driving force to protect the environment. See B.I.O.’s website (www.holg.bg) “What’s New” section.

Forum 2001 Foundation Gaia and Culture Symposium
Tuscany, Italy

The Forum 2001 Foundation is sponsoring a symposium themed “Gaia and Culture,” to be held 22-24 June 2001 at La Fratta in Southern Tuscany, Italy. The B.I.O. President will be one of the main speakers at the symposium.

Urban Green Spaces
Lviv, Ukraine

An international conference on “Urban Green Spaces” will con- tinue in Lviv, Ukraine, from 3-5 October 2001. The confer- ence is organised by the Ukrainian State University of Forestry and Wood Technology and the Ministry of Education and Science of Ukraine, with the co-operation of the Biopolitics International Organisation, the National Botanical Garden of Ukraine, the National Academy of Sciences of Ukraine and the Urban Ecological Centre of Iviv. The conference is chaired by Professor Kon- standin Systuk, Director of the National Academy of Sciences of Ukraine Institute of Botany. The B.I.O. President is one of the Co-Heads of the Conference, together with Professor T. Cherevchenko and Professor V. Kucheryavyi.

The following topics will be addressed:
- The role of botanical gardens in ornamental plants introduction
- Ancient park: problems of restoration, conservation and recon- struction
- Gardens and squares of the historic centers of ancient cities: ecology, architecture and design
- Greening of new dwelling regions
- Urban ecological parks
- Suburban park-forests: ways of landscape management
- Problems of park biodiversity
- Problems of decorative nursery gardens

Money Show 2001
Athens, Greece

On the occasion of the Athens Money Show, to con- ven in June at the Grande Bretagne Hotel, B.I.O. will be holding a panel dis- cussion themed “Prof- it and the Environment,” with the par- ticipation of diplo- mats, business lead- ers, scientists and educators. Speakers will discuss the envi- ronment as a prior- ity in today’s expand- ing investment markets.

The Athens Money Show, organised under the aegis of the German Hellenic Chamber of Commerce and Industry, is a cut- ting-edge international financial forum promoting new invest- ment strategies, products and services. It is a joy and privilege for B.I.O. to be part of this initiative and have the opportuni- ty to address the increasing importance of environmental issues in the rapidly emerging global economy scheme.

Euro-Arab Centre
Cairo, Alexandria, Egypt

As a member of the Board of the Euro-Arab Co-operation Centre, the B.I.O. President participated in a conference held by the Petroleum Institute in Cairo and in a Euro-Arab Co- operation Centre meeting in Alexandria, in November 2000. In her speech at the opening ceremony of the Petroleum Insti- tute, in which the President participated and stressed the need to intensify efforts to save non-renewable energy sources such as oil. One of the main B.I.O. goals is to facilitate specialists in the energy sector, who will in turn provide the necessary technical knowledge that will help to prevent catastrophes and to establish a sustainable global economy. In this framework, the Petroleum Institute could play a significant role in the research and appli- cation of innovative solutions.

Coastal Ecosystems
Gdynia, Poland

The 3rd International Symposium on “The Functioning of Coastal Ecosystems in Various Geographical Regions” will be held in Gdynia, Poland from 19 to 22 June 2001. The sym- posium is organised and sponsored by the Centre of the Euro- Arab Co-operation and its structure is designed to facilitate the development of the International Union of Biological Sciences and to promote the development of long-term bilateral and international cooperation initiatives which can boost the growth of a mutually beneficial framework. Tourism, culture and the environment, and the better understanding of the environment we all share can promote the development of long-term bilateral and international cooperation initiatives which can boost the growth of a mutually beneficial framework. Tourism, culture and the environment, and the better understanding of the environment we all share can provide local organisations and initiative opportunities for cross-boundary initiatives. The B.I.O. President participated in a conference held by the Petroleum Institute in Cairo and in a Euro-Arab Co-operation Centre meeting in Alexandria, in November 2000. In her speech at the opening ceremony of the Petroleum Insti- tute, in which the President participated and stressed the need to intensify efforts to save non-renewable energy sources such as oil. One of the main B.I.O. goals is to facilitate specialists in the energy sector, who will in turn provide the necessary technical knowledge that will help to prevent catastrophes and to establish a sustainable global economy. In this framework, the Petroleum Institute could play a significant role in the research and appli- cation of innovative solutions.
Global Economic Governance: How Can We Build Equity?, Watson House, UK

Keynote presentation at the Petroleum Institute Conference, Cairo, Egypt

Keynote presentation at the Board Meeting of the Euro-Arab Co-operation Centre, Alexandria, Egypt

Keynote presentation at the conference for the establishment of an International Court of the Environment, Italian Supreme Court, Rome

Biopolitics seminars on environmental legislation and environmental management at Academia Istropolitana Nova, in Bratislava, Slovakia within the framework of the European Union TEM-PUS programme

Slovak participants from the above mentioned seminars visit Greece to take part in a Biopolitics clean energy and environmental administration project in co-operation with the Regional Energy Centre of the Peloponnesus within the framework of the TEM-PUS Mobilities EU programme

Keynote presentation and chairing of an event on Cultural Olympiads, with the participation of the Mayor of Athens and other personalities. The event sponsored by the Global Federation of Beasiswa Abroad, Old Parliament Building, Athens, Greece

Participation in the European Union "What energy options for Europe in 2020" conference, Brussels

Keynote presentation at the Steering Committee meeting for the conference "What Lifestyles for the Third Millennium" of the Council of Europe's Parliamentary Assembly, Paris, France

BIO.E. PUBLICATIONS

"Bio-Syllabus for European Environmental Education" CD-ROM and printed education manuals (in prep.) sponsored by the European Commission

"Bios Olympiad." Monograph by A. Vlavianos-Arvanitis (Greek edition, 111 pp.)

"Biopolitics - the bio-environment - Bios Olympiad," proceedings from the B.I.O. conference held in 1999 in Ancient Olympia (Greek edition, 209 pp.)

"Biopolitics - the bio-environment - biopolis versus megapolis: a Biopolitics at the Wilton Park Conference on "What Lifestyles for the Third Millennium?" Council of Europe, Paris

"Biopolitics - the bio-environment - Millennium Values," keynote presentation at the millennium celebration on the island of Patmos, Greece

Biopolitics at the Pontifical Academy for Life's General Assembly, The Vatican

Participation in the seminar on "Environmental Obligations and Opportunities for Business," British Embassy, Athens

Presentation in the organisational meeting for the conference on "What Lifestyles for the Third Millennium?" Council of Europe, Paris

Biopolitics presentation in "Forum 2000" conference of the American Foundation for Greek Language and Culture, Tampa, Flori,

USA

Biopolitics at the Wilton Park Conference on "Earth Summit 2002: Identifying the Agenda," Wiston House, UK

Biological keynotes at the conference on "Tourism and Culture," Ancient Olympia, Greece

Biopolitics at the conference on "Olympic Values, Tourism and Culture," Ancient Olympia, Greece

Participation as Vice-President of the International Bioethics Society in the Society's Biannual Scientific Committee meeting, Gijon, Spain

Biopolitics keynote at the conference on "Environment and New Millennium" project

Quarterly publication of BioNews, the official B.I.O. newspaper

"Bios Prize" in St. Petersburg - a Millennium of Bio Culture," video release (English, Greek)

"The Kogi of Colombia: A Tradition of Safeguarding the Environment," video release (English, Greek)

"Biopolitics - the bio-environment - the biopolitical context of pluriculturalty," contribution to the volume of proceedings from the conference on "The Challenges of Pluriculturalty in Europe" in co-operation with European House Zagreb

"Protecting water resources and the bio-environment: A priority for the millennium," keynote presentation at the conference on "The challenges of Pluriculturalty in Europe" in co-operation with the Regional Energy Centre of the Peloponnesus within the framework of the TEM-PUS Mobilities EU programme

Keynote presentation at the conference Praga 2000 Natura Megapolo-

sis of the Czech IUCN

MEDIA COVERAGE

Keith Suter Comments on Biopolitics. Radio 2GB News Com-

mentary, Australia. Broadcast on Friday 17th November on Radio

2GB's "Brian Whish Programme" at 9pm, and on the 19th Novem-

ber "Sunday Night Live" at 10.30pm

Interviews with ANTI TV Satellite-Pacific, broadcast in Australia, Canada and USA.

Weekly B.I.O. articles in the Athenian daily "Adesmeftos"

Extensive press coverage in Spain, Russia and Japan


Racing to Save the Environment
Biopolitics as a Solution to the Climate Change Gridlock

Commentary by Keith Suter, Consultant for Social Policy, Sydney, Australia

The 7th European Roundtable on Cleaner Production (ERCP) was held from 2-4 May 2001 in Lund, Sweden. The 7th ERCP was a continuation of the ERCP series, the first of which was held in Graz in 1994. Following this initiative, successive, annual Roundtables were held in Rotterdam, Kalundborg, Oslo, Lisbon and Budapest. The central theme of the 7th ERCP was “Sustainable Production and Consumption Systems - Co-operation for Change” addressing 12 sub-themes related to the integration of cleaner production, cleaner products, environmental efficiency and regional, economic and social sustainability. The aim of Cleaner Production strategies is to continuously improve environmental efficiency through minimisation:

- environmental impacts in all societal activities;
- environmental impacts throughout the entire life-cycle of products;
- the quantity and toxicity of all wastes at their sources;
- the use of hazardous raw materials and processes, non-renewable resources, water and energy.

The B.I.O. President participated in the conference and was invited by the Chairman to deliver the closing remarks. She stressed that environmental law is an important institutional tool for policy and action, and essential to the development of the Olympic Games’ infrastructure. However, the Olympic Games are also a brilliant opportunity to use the world’s positively focused attention to promote environmental issues. Achieving excellence in sports alone cannot provide the long-term vision necessary for humanity to exit the present crisis in values. The term “biopolitics” is based on the idea that biology links all the people around the world. When it comes to living on this planet, there is more unity humankind can achieve in this task.

The organisation is campaigning for a Green Salary by which unemployed people will be paid to work on projects that save the environment. One again, some progress has been made in this area in Australia via the “Work for the Dole” schemes because some of the projects are concerned with protecting the environment, such as bush regeneration.

Third, the organisation is calling for the development of economic strategies that will more effectively mobilise economics in the interests of saving the environment. There is still much more to be done in this area - and I am not too confident about an optimistic outcome from the climate change conference now underway in The Hague. Hence the need for organisations like the Biopolitics International Organisation to create a groundswell of public opinion in favour of major changes to protect the environment.

If we are too important to be left to generals, then the environment is too important to be left to environment ministers.

The B.I.O. supporter and friend.

Second, the organisation is designing new networks and to find new cooperation partners with similar goals and objectives.

The Society’s President, George Kremlis, who chaired the conference, is also the Head of Judicial and Legislative Affairs at the European Commission DG XI, and a distinguished B.I.O. supporter and friend.

Environmental Protection is a “Must”

Alexandria, Egypt

T he 11th International Conference on “Environmental Protection is a Must” will take place in Alexandria, Egypt, 8-10 May 2001. The conference is organised by Alexandria University, the Euro-Arab Co-operation Centre (V.E.A.) and the International Scientists Association (I.S.A.), under the auspices of the Professor Mofid Shalaby, Minister of High Education and Scientific Research, and Professor Mohammed Nassar El-Deeb, President, Alexandria University.

The B.I.O. President, Member of the Scientific Committee of the conference, will be one of the keynote speakers in the opening session. The conference will also include a plenary panel of Egypt’s Minister of Petroleum, the Syrian Minister of Petroleum, the Governor of Alexandria and the Governor of Damascus.

Speakers and participants will address the following topics: Air and soil pollution; Fresh water and marine pollution; Hospital waste disposal; Sustainable management, environmental planning and impact assessment; Waste recycling in industry and agriculture; Environmental engineering; Environmental information and education; Environmental laws and applications; Tourism and the environment; Energy and the environment; Small enterprise and the environment; Peace and the environment; Gender and the environment; Environment and climate.

Tristan the 7th ERCP was designed to be especially beneficial for corporate managers, government officials and non-governmental representatives, especially those involved in Local Agenda 21 and sustainable development programs, environmental organisation, founded in Athens in 1999 with the aim of developing, disseminating and promoting environmental law and environmental policy in Greece. The Society’s President, George Kremlis, who chaired the conference, is also the Head of Judicial and Legislative Affairs at the European Commission DG XI, and a distinguished B.I.O. supporter and friend.

Olympic Games and the Environment

The Hellenic Environmental Law Society sponsored a major conference on “Olympic Games and the Environment” at 10:30 PM, on the occasion of the Sixth Radio 2GB’s “Brian Wilshire Programme” at 9 PM, addressing the following themes related to the integration of cleaner production, cleaner products, environmental efficiency and regional, economic and social sustainability.

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Tristan the 7th ERCP was designed to be especially beneficial for corporate managers, government officials and non-governmental representatives, especially those involved in Local Agenda 21 and sustainable development programs, environmental organisation, founded in Athens in 1999 with the aim of developing, disseminating and promoting environmental law and environmental policy in Greece. The Society’s President, George Kremlis, who chaired the conference, is also the Head of Judicial and Legislative Affairs at the European Commission DG XI, and a distinguished B.I.O. supporter and friend.

Environmental Protection is a “Must”

Alexandria, Egypt

The 11th International Conference on “Environmental Protection is a Must” will take place in Alexandria, Egypt, 8-10 May 2001. The conference is organised by Alexandria University, the Euro-Arab Co-operation Centre (V.E.A.) and the International Scientists Association (I.S.A.), under the auspices of the Professor Mofid Shalaby, Minister of High Education and Scientific Research, and Professor Mohammed Nassar El-Deeb, President, Alexandria University.

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Bioramic_architecture in a way of designing buildings and manipulating the environment within buildings by working with natural forces around the building rather than against them. This takes itself with climate as a major contextual generator, and with benign environments using minimal energy as its target. It aims to protect and enhance the environment and life, and is developing on many different levels from rethinking basic concepts about our need for shelter and the function of the "city" in our lives to developing recycled or sustainable building materials.

Perhaps the most important challenge facing the world today is the impact that the projected population growth will have on urban centers. Currently two billion of the world's population live in cities built by the year 2050 that figure will grow to around six billion with most of the expansion taking place in the so-called developing countries. The environmental, as well as the social and economic, impact of this explosion is daunting.

Important issues will have to be faced on how to cope with this increase in urban populations. How do we design urban environments to accommodate them? How do we improve the social and economic conditions of the growing urban population without jeopardizing the life systems on which we depend? There are 1.2 billion people in the world today without adequate shelter. The design, construction and maintenance of traditional buildings in developed countries have a tremendous impact on the environmental and natural resources. Statistics from the USA show that residential and commercial buildings account for over 1/3 of all the energy consumed and 2/3 of all electricity. In addition, buildings are a major source of pollution causing urban air and climate changes. Many of the pollutants damaging urban air quality come from buildings (40% of the sulphur dioxide, and 10% of particle emissions) In the USA, buildings also produce 35% of the carbon dioxide, chief among pollutants affecting the climate.

The impact of traditional building on the environment and natural resources is enormous. However, the ideal of designing and building structures that are environmentally friendly has become fairly widespread throughout the community of architects and builders in developed nations. In many areas there is the necessity of complying with new regulations and standards aimed at protecting the environment. In addition, there are an increasing number of incentives for putting up buildings with more efficient energy consumption and that reduce the negative impacts on natural resources by using recycled or sustainable materials. While these vary around the world, there is awareness that our need for shelter must not jeopardize the environment.

There is growing interest in "Green" building practices, which offer an opportunity to create environmentally sound and resource-efficient buildings by using an integrated approach to design. "Green" buildings promote resource conservation through energy efficiency, renewable energy, and water conservation features. They take into consideration the environmental impact of the building and minimise waste. Other goals are to "create" a healthy and comfortable environment, reduce operation and maintenance costs, and address issues such as historical preservation, access to public transportation and other community infrastructure systems. The entire life cycle of the building and its components is considered, as well as the economic and environmental impact and performance.

As public awareness of environmental issues increases, construction developers are also beginning to see that "green building" can be profitable and a selling point. Market surveys are showing that a surprising number of potential buyers are interested and will pay the higher price for a home that is environmentally friendly. In the last few years there has been much talk concerning environmentally responsible architecture, that is, architecture that is respectful of the earth's resources and its natural beauty. Unfortunately, many of the architects and designers who profess interest in the concept of sustainable architecture do not practice it in their own work or for whatever reason, be it their client's lack of interest or their own lack of conviction. In fact, most architect's ignore the issue altogether, preferring to market architecture as fashion. This is a terribly irresponsible view, because in the traditional use and visual pollution, buildings have had an increasingly severe and damaging impact on the environment. This makes the issue of sustainable architecture not only an important consideration but also a necessary one. As a philosophy for nation-building which was introduced to the world by the United Nations in 1992, it seems that sustainable architecture, or "integrated biologic architecture," is the only logical and responsible approach.

What is integrated biologic architecture? It is an architecture that arises out of the landscape, with the site determining the orientation and construction of a building, not just aesthetically, but also mechanically. In the case of heating, cooling, and lighting too. Thus, it is an architecture that respects nature and its resources and provides its occupants with the most comfortable and pleasing environment possible. However, this architectural approach need not be a restrictive one for imaginative practitioners. As integrated biologic architecture encompasses examples of vernacular architecture, like the typical whitewashed Mediterranean fishing village, as well as neoclassic architecture, which draws on the materials, textures, and plants of the surrounding landscape for its inspiration. Indeed, good integrated biologic architecture should exist in harmony with the site.

New trends in urban management

Environmental protection brings together social, economic, moral and political considerations. Urban management must take these considerations into account and incorporate the following principles:

Environmental limits. Uncertainty about the environmental threshold of the earth's carrying capacity requires the adoption of the precautionary principle and demand management.

Environmental efficiency. The use of natural resources, increasing durability and closing resource loops will contribute to long-range environmentally compatible urban management.

Welfare efficiency and equity. Multiple use and social and economic diversity, as well as a fair distribution of natural resources are key elements to be considered in urban planning.

To reconcile continuing development with environmental limits we must choose certain types of development rather than others. Efficiency has meanings beyond maximising the economic output of each human activity. Human benefit is not necessarily identical to utility as measured by neo-classical economics. Quantification of goods should be replaced with quality of life. Environmental protection is closely connected to social equity.

In Europe, the European Commission's Green Paper on the urban environment of 1996 and the Sustainable Cities Report of 1996 both promote an integrated approach to urban problems encompassing social, economic, and environmental factors. The Sustainable Cities project, started in 1993, aims at encouraging and assisting cities and towns to establish and implement local Agenda 21 or similar sustainability plans through policy reports, exchange of experience, networking and dissemination of good practices cases. In the spirit of environmental policy, the EU is now adopting a more bottom-up approach and implementing in a partnership approach the use of alternative instruments in environmental policy, among which the urban dimension plays an important role. The "greening" of the Structural Funds has also become a central concern, as explained in the Communication on Cohesion and Environment.

Natural building materials

Natural building has emerged as a response to an increasing concern for our built environment. Natural materials can provide an alternative to toxic substances which have lead to widespread environmental illness. While interest has surged in the industrialised West, the ancient roots of natural building are being lost in many traditional areas. Ironically, builders in the industrialised countries are now turning to these very cultures for solutions to their building problems. It is to be hoped that increased interest and research into vernacular building systems will increase respect for these timeless ideas and help to preserve our natural heritage.
Coastal zone problems

The coastal zones of Europe face a range of interrelated biological, physical and human problems. As a complex, dynamic natural system, the coastal zone is subject to the forces of water currents, sediment flows and frequent storms. It is also particularly vulnerable to inappropriate or excessive human uses.

Problems of water quality and quantity affecting the quality of coastal waters. From agricultural runoff upstream in neighbouring countries is particularly significant in areas that are undergoing rapid economic land development, or sea exploitation. This problem is particularly vulnerable to inappropriate or excessive human uses.

Coastal erosion is perceived as the most significant threat to maintaining income in many areas living from tourism. It leaves the shore more vulnerable to currents, thus imperilling property and lives.

European strategy

The European Union Strategy for Integrated Coastal Zone Management consists of a series of concrete actions for each of the aforementioned general areas of action, based on the conclusions of a Demonstration Programme operated from 1996 to 1999 by the Directorates General for Environment, Fisheries and Regional Policy. To ensure effectiveness and efficiency of the coastal zones may also be benefitted by inappropriate human infrastructure (including that intended for “coastal defence”) and development too close to the shoreline. Engineering works in some port areas have contributed to accelerated erosion of the adjacent shoreline because the works did not adequately account for coastal dynamics and processes.

Habitat destruction, as a result of poorly planned building and land development, or sea exploitation. This problem is particularly significant in areas that are undergoing rapid economic expansion, such as in the countries of Central and Eastern Europe.

Loss of biodiversity, including decline of coastal and offshore fish stocks as a result of damage to coastal spawning grounds. Regional Biodiversity Action Plans have identified up to 30 actions necessary to prevent further habitat loss and species decline in certain coastal areas in the North-West European Metropolitan area.

Contamination of soil and water resources, as pollution from marine or on-land sources, including landfills, migrates to the coastline. In some Member States, river borne pollution derived from agricultural runoff upstream in neighbouring countries is affecting the quality of coastal waters.

Problems of water quality and quantity as demand exceeds supply or wastewater treatment capacity. Saltwater intrusion from overexploitation of coastal aquifers is a major problem in many parts of the Mediterranean basin. The damage to the aquifer normally results in a permanent reduction in available water resources.

Unemployment and social instability resulting from the decline of traditional or environmentally-compatible sectors, such as small scale coastal fisheries. In many areas, professional coastal fishing is experiencing difficulties in remaining competitive.

In many cases, the actions announced may in fact be specifically addressed to the coastal zone, but be tools to promote good integrated management in any territorial unit, including coastal zones. This is wholly appropriate in view of the fact that the guiding principles for good management of the coastal zones may also be usefully applied to other areas.

This strategy is comprehensive and as such includes many distinct actions of differing significance. It is not, however, an end in itself, but is conceived as a coherent package. Its implementation will require the involvement and collaboration of many national and international bodies.

Regional management

In the Netherlands the concept of restoring resilience of the coastal zone was launched in 1996 during public fora of major actors/stakeholders from the governmental, business, academic and nature conservation communities. Increasing natural resilience by restoring the strength of the buffer capabilities of the coastal areas is seen as a response to the increasing pressure of urbanised population and as an anticipation to the impacts of climate change, such as accelerated salinisation. The essence of this concept is to provide more space for dynamic coastal development in the different coastal compartments (dunes, coastal sea, urban waterland, etc.) through drastically revising the water and sediment regimes and integrating the different functional uses of the coastal zone, land in water and water in land.

In Poland, by the 1991 Coastal Act, a coastal belt was established, consisting of a technical belt and a protective belt. Since 1996 effective mechanisms and co-ordinating activities have been functioning. Especially in Poland, with its rapidly increasing economic development, the key issue in ICZM plans is the balance of activities in the coastal zone by adjusting preparation of ICZM plans within the coastal provinces.

The USA has recognised the desirability of diversity. The US Coastal Zone Management Act 1972 envisages a programme of co-ordination of the different levels of government and different sectors of the economy and non-governmental organisations (NGOs). Since March 1997 three Regional ICZM consultative bodies have been installed in which representatives of all levels of government, science, industry, NGOs and landowners participate. They stimulate co-operation and the balance of activities in the coastal zone by adjusting the preparation of ICZM plans within the coastal provinces.

The basic problem for coastal zones all over the world is that development is not kept within the limits of the local environmental carrying capacity.

In conformity with the proportionality principle, the EU measures will not go beyond what is necessary to achieve the various objectives set.

In many cases, these physical and biological problems have led to, or compounded, the human problems facing the coastal zones as the number and intensity of human uses increase, namely:

- Destruction of cultural heritage and dilution of the social fabric following uncontrolled development, especially of tourism. Many of Europe’s islands - from the Canaries Islands to the archipelago of Sweden and Finland - are experiencing this problem.

- Loss of property and development options, as the coast erodes. Coastal erosion is locally perceived as the most significant threat to maintaining income in many areas that live from tourism.

- Lost opportunities for employment, as resources are degraded.

- Boats are frequently treated with tributyltin (TBT), which can have a negative impact on the aquaculture industry.

The basic problem for coastal zones is experiencing difficulties in remaining competitive.

Problems of water quality and quantity affecting the quality of coastal waters. From agricultural runoff upstream in neighbouring countries is particularly significant in areas that are undergoing rapid economic land development, or sea exploitation. This problem is particularly vulnerable to inappropriate or excessive human uses.
From Rhetoric to Reality

Kitty Kyriacopoulos
Honoray Chairman, Silver and Barley Ore Mining Co., Greece

The protection of the environment concerns every human being on this planet, and unless we realize this fact, I hear that we will not be able to protect our planet for future generations. Education is the only way to achieve this awareness. This is why the teaching of the Biopolitics philosophy is so important and should start even as early as kindergarten. However, this is a long-term mission. Meanwhile, there is much to be done in other fields. Obligations should be imposed on all enterprises - not only industries - to respect the environment.

I believe ethical should became the number one objective of all governments throughout the world. However, the big responsibility lies with those countries which have achieved their economic advantages not only at the expense of their own environment but, often, at the expense of less developed regions of our world. The creation of an International Court of the Environment is imperative. Action should be taken immediately; time will not wait.

International Court of the Environment Need and Structure

Judge Amedeo Postiglione
Director, International Court of the Environment, The Netherlands

The International Court of the Environment would ensure a universal economic development based on the fair exploitation of resources, by complying with the legal standards and the obligations as foreseen by international law. Only with such an innovative legal instrument will it be possible to remove the case of environmental damage during international relevance from the fields laying outside jurisdiction, since it is society that experiences the environmental damage.

Today, it seems urgent and necessary to establish - without international relevance - an International High Authority for the Environment, a real State-actors in the dispute resolution process. It thereby takes the responsibility of an International Criminal Court, since its role in environmental crimes, such as terrorism, is not protected by the current legal system.

Nevertheless, international courts are a prerequisite for the development of international environmental law and can also play a very important complementary role to support the work of the PCA, which for the time being, could be the right forum for the development of an International Court of the Environment.

By its recent Draft Optional Rules for Arbitration of Disputes Relating to Natural Resources and/or the Environment, the PCA offers new innovative instruments for an effective control of the application of national and international environmental law, as well as for the participation of private parties and other non-state actors in the dispute resolution process. It thereby takes into account the increasing importance of NGOs, environmental interest groups and individuals in the field of environmental protection.

Dr. Ivanio Iai
Constitutional Court, Italy

The Charter of the International Criminal Court, signed in 1998 in Rome, contains certain interesting aspects relating to the environment. These aspects are crucial elements that can be integrated under the jurisdiction of a future instrument for universal justice. The Charter treats crimes against the natural environment, such as the use of poisons or toxic weapons and gases in the case of war or war crimes. The creation of an International Court of the Environment will not constitute an obstacle for the jurisdiction of the International Criminal Court, since its role in environmental issues is limited to environmental damage caused by war.

John Sarmas
Member of the National Court of Audits, Greece

Extensive effort, global mobilisation, increased expectations by the international community, but despite milestones such as the Rio Declaration and Agenda 21, reality is grim. The international community proceeds with great hesitation to the legal settlement of environmental disputes and only when the circumstances are sufficiently, or not have a comprehensive competence to protect the environment sufficiently, or cannot guarantee the rights of NGOs or individuals, because of lack of legal access. Nevertheless, international courts are a prerequisite for the development of international environmental law and can also play a very important complementary role to support the work of the PCA, which for the time being, could be the right forum for the development of an International Court of the Environment.

Professor Alfred Rest
Senior Academic Counsellor, University of Koln, Germany

An International Environmental Court is indispensable. National courts are still most ineffective and, at the international level, courts do not have a comprehensive competence to protect the environment sufficiently, or cannot guarantee the rights of NGOs or individuals, because of lack of legal access. Nevertheless, international courts are a prerequisite for the development of international environmental law and can also play a very important complementary role to support the work of the PCA, which for the time being, could be the right forum for the development of an International Court of the Environment.

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that we experienced in the recent war.

states agree, there will be a proposal in co-operation with the Council of Europe is making its decisions along with the Council of many of the subjects that will be discussed here today. The Conference at George Washington University on April 15-16, 2000, in particular the relevant articles pertaining to the respect for nature and protecting our common environment; and

Recalling the spirit of the resolutions adopted at the conference at George Washington University on April 15-17, 1999, by the Biopolitics International Organisation on June 7, 2000, and at the International Court of the Environment Foundation Conference in Rome, on November 10, 2000, it is resolved that:

1. There is an urgency to recommend to governments, parliaments, international organisations and non-state actors to consider, without further delay, the establishment of an International Court of the Environment with mandatory jurisdiction and broad legal access.

2. There is a fundamental human right to a healthy environment that can be protected through such a court.

3. Pending the establishment of such a Court considers that the Permanent Court of Arbitration (PCA) is the appropriate forum to resolve environmental disputes.

4. The recent efforts made by the PCA to develop a specific set of rules of procedure to resolve disputes pertaining to natural resources and the protection of the environment are welcomed.

5. Governments and parliaments are invited to be guided by the spirit of this resolution in their forthcoming meetings and conferences on these and related issues.
Present threats to bios are international problems. The required solutions entail the development plans of action for peace and international understanding. International co-operation may lead to a new era for the diplomatic world; the era of bio-diplomacy. Nations will no longer be at war with each other but, with environmental destruction and abuse. Foreign policy may thus shift from a fragmented, competitive framework to a vision of unity and interdependence.

Bio-diplomacy recognizes that cultural differentiation constitutes the wealth of the body of humanity. Humanity is part of the overall body of bios, where DNA, the genetic code for every living organism, is the link connecting all forms of life. Trees, the source of oxygen on our planet, can be considered the “lungs” of the body of bios. Damage to the lungs is not an isolated event but results in the whole body suffering. These uniting concepts are promoted as the primary consideration of bio-diplomacy which is involved in enhancing international co-operation in environmental issues and actively supports efforts to maintain biological and cultural diversity. At the same time, bio-diplomacy seeks to improve human relations and attain the goal of world peace by replacing current diplomatic attitudes with a complete international and intercultural perspective. Diplomats of all ranks and nations should be able to appreciate the great importance of this task and make the best possible use of all the levels of their power at their disposal.

The pursuit of bio-diplomacy in a co-ordinated fashion, at the international, national, regional, and local levels, will undoubtedly provide for increased co-operation among people across all borders separating them. Especially where issues of “transborder pollution” are concerned, the need for internationally agreed upon preventative policy is crucial. Diplomacy can encourage international co-operation in environmental protection to enable countries not only to control, but also to promote the eradication of environmental deterioration, through international co-operation and the sharing of experiences and know-how. The role of major international environmental laws (e.g., Kyoto etc.) can be crucial, and make a significant contribution to the reversal of global climate change and the implementation of Agenda 21.

To encourage international co-operation in the world needs to stop investing in war and start investing in the preservation of the bio-environment. Competition for ways to destroy, should become co-operation for ways to save. Without interfering with vested interests, the greatest challenge for the 21st century should become the development of new ways of channelling current defence protocols so as to adopt the principle of defence for bios as the primary national and international priority. Existing defence equipment can be amended and used for reforestation, water resource clean-up, soil erosion recovery, protection of the ozone layer and the de-contamination of areas affected by nuclear radiation.

In our time, an era of transition to a new age when the multi-level has been done, and there a good part of the sea and coastline?

Nobody in their right mind would do any of the above, irrespective of their environmental sensitivities. Therefore, environmental issues should be taken into consideration when participating in or financing any project. The environment has been deteriorating and development is endangered. Our only hope is that our “No-awareness” has increased. Bio-awareness can save the environment and provide development. Financing is undertaken by banks and international organisations. If we compare the projects financed that have burdened substantially the environment to those projects that are environmentally friendly the conclusion is not encouraging. Today’s global society is neither as civilised nor as healthy as we think.

Economy and ecology have the same prelic eco. It comes from the Greek word for "home." Therefore, economy deals with the laws (nomos) of our home and ecology deals with the logic that should govern it. Our home, today, is our Earth. I would like to conclude by stating the obvious: There is no economy and ecology without life - bios - and there is no life without economy and ecology.
EU ENERGY POLICY

The dawn of the third millennium should have coincided with important crossroads for the energy sector at the global level. Environmental concerns are grounding on purely economic considerations, but above all, decision makers are now facing crucial long-term energy policy choices. The decline in coal, dependence on oil, the future of nuclear power, the profitability of renewable and new energy sources: there is no lack of challenges. For Europe, which accounts for 16.6% of the global energy consumption but only for 6% of the world’s population, the time has come to face some serious choices. The on-going liberalisation of the gas and electricity markets is profoundly changing the structure and dynamics of energy markets in Europe. Markets are becoming more fluid at the Community level and decisions affecting one Member State need affect the others too.

In compiling this article, information from the European Commission’s Green Paper “Towards a European strategy for the security of energy supply,” Brussels, 29 November 2000, was used.

**Oil**

Oil has a larger share of the energy market than any other fuel type, although this proportion is falling. In 1970, oil represented more than 60% of primary energy supply, this figure is now down to 44%. Demand for oil continues to grow, particularly in the transport sector. Transport is important to oil markets because it is both almost completely dependent on oil as an energy source, and one of the major customers for oil.

Without a technical background, transport is likely to maintain a growing appetite for oil and could account for up to 60% of oil demand by 2030.

**Natural Gas**

As is of particular significance to the supply security debate for three reasons. First, it is increasingly becoming the favoured fuel for electricity generation (including combined heat and power) replacing coal and oil. Second, due to its chemical composition, gas has lower greenhouse gas emissions than oil and coal for many types of energy services. Finally, it benefits from being easily available from reservoirs both within the EU and close to its borders.

Gas demand has risen across the community over the last 10 years, representing a growth in market share from 16% to 21%, albeit at uneven rates. On average, the market share of gas is estimated to rise from 21% in 1990 to 27% in 2020. The third of the increase in demand is accounted for power generation.

**Solid Fuels**

Solid fuels include anthracite, coal and lignite. They are attractive in supply security terms because European reserves, particularly of hard coal, are plentiful. Indigenous coal production is falling for a range of reasons, thus increasing EU dependence on imports, while the attraction of solid fuels for many operations has diminished due to the harmful emissions from its use. Technological advances could renew interest in coal.

The EU coal demand is following a determined downward trend, due to the wide-scale removal of coal from domestic households, the substitution of coal generation by gas and the restructuring of the steel industry. Domestic production is falling even more quickly, leading to a slight increase in imports. Imports are not rising as quickly as they would have if EU coal demand had remained constant.

Enlargement could benefit the EU’s coal balance if Eastern European coal satisfied some of the demand in the existing EU. A more likely scenario is that restructuring in accession states leads to new falls in production without corresponding falls in demand. The net result is likely to be increased dependence on coal imports.

**Nuclear**

From a small base in 1970, the EU now depends on nuclear power for 35% of its electricity production. Conventional nuclear power depends on uranium, so any analysis of prospects for nuclear must focus on the availability of uranium. Several Member States have taken a political decision to phase out nuclear, replacement fuel is not easily and cheaply available in large quantities. Another difficulty is that alternative conventional fuels emit significantly more polluting gases.

Enlargement is not going to accentuate the current situation. Some candidate countries are also highly dependent on nuclear generation, e.g. 40% of Bulgaria, 40% of Hungary, 44% of Slovakia, 38% of Slovenia and 77% of Lithuanian electricity generation comes from nuclear. It has been estimated that the nuclear share of electricity generation in accession countries plus Switzerland and Norway could fall from around 15% now to 5.5% in 2020 (source ESMIBL-LASCA, Brussels).

EU demand for uranium has stabilised at about 20,000 tonnes per year. It is only partly fulfilled by fresh production, and the gap between production and requirements is likely to remain for some time, as secondary and non commercial sources are being run down. Currently Molybdenum contains around 3,000 tonnes per year of uranium equivalent.

Future trends in demand are unclear given the uncertain future of nuclear power in several Member States. Demand for uranium in the EU will increase if nuclear generation increases. This will create greater competition for uranium on external resources, e.g. Russia, Canada, and Australia including uranium no longer needed for defence purposes. Recycling spent fuel and using fast breeder reactors could moderate this increase.

Demand for nuclear energy will be strongly affected by demand for electricity on the one hand and the capacity to generate electricity, cleanly, from renewables and coal.

**Renewable Energy Sources (RES)**

The major RES sectors are wind, photovoltaics (PV), solar thermal (solar thermal power plants and solar energy in buildings), hydro (small and large scale), biomass (with and without wastes), and geothermal energy.

Renewable energy sources are currently unevenly and insufficiently exploited in the European Union. Some countries, such as Germany, France and Sweden, and Italy have large renewable energy sources, some, such as Germany, have intensive programmes in programmes or legislation in favour of renewables and some have little exploitation of renewable sources. In one renewable sector, large hydropower, potential EU capacity has been almost fully developed, while in others, such as PV and solar thermal, very little potential has ever been exploited. The renewable industry has created many new jobs, around 15,000 in the Danish wind industry alone.

Although their potential is significant, renewable sources of energy make a disappointingly small contribution of around 6% to the Union’s overall gross inland energy consumption, of which 4% is hydropower. The challenge for the renewable sector is to increase its proportion up to 12% by 2010. This is helpful to environmental targets, because, in general, renewable energy sources are CO2 neutral.

For renewable sources of energy to take off (wind energy, in particular) financial or fiscal incentives are needed. The target of 25% substitute fuels by 2020 will probably remain a dead letter, without favourable fiscal incentives, regulations for their distribution by oil companies and voluntary agreements with industry. It is unfortunate that at Community level there is no harmonisation on taxation of biofuels, particularly the Commission put forward a proposal to that effect in 1992 and, on the contrary, efforts made along these lines within certain programmes have been called into question for legal reasons.

**Hydropower**

All renewable sources, the large scale hydropower sector is the best exploited and perhaps most mature. Hydro represents about 90% of all EU RES production and supplies some 14% of electricity demand in the EU. Hydro production has continued to rise fairly steadily across the globe and is likely to continue, as undeveloped countries tap an almost unexploited potential. A growth rate of 2,800 to 3,000 MW is anticipated by 2010 (small scale hydro which increases head speed and vari- able generation, reduces in the cost of equipment and environmental mitigation technologies will enhance the attraction demand for mini- hydropower.

**Wind**

Installed capacity for wind energy more than doubled in the 1990’s and the potential in the EU is for a further dramatic growth. It is estimated that a quadrupling of market potential is possi- ble by 2020 (world-wide the potential growth is estimated as 10 times). In the long term, and sub- ject to tackling technical and local planning bar- riers, wind energy could have the potential to contribute up to 30% of the current electricity demand.

**Photovoltaic (PV)**

PV production is on a small scale in the EU. Cost is a decisive factor-installation costs of 5,000 euro/kW compared with 1,000 euro/kW for wind, and production costs at 0.32 euro/kWh in Southern Europe-more than 5 times that of wind. Costs in Northern Europe are more than 10 times higher. PV is not highly dependent on local conditions, providing that there is direct light from the sun. Installed capacity has not grown as quickly in the EU as in the rest of the world. However, it is estimated that a significant market potential exists-possibly as high as 2000 MW in 2010, compared with 52 MW in 1995 and around 200 MW in 1999. Current market growth is around 30% per annum.

**Solar Thermal**

Solar thermal collectors, which produce low temperature heat for domestic applications face similar economic barriers, although there are less dramatic production cost of 12 euro/kWh and installation costs of 2,500 euro/kWh. Instantly, there is a clear world-wide potential for this technology, the availability of solar energy in the 1990’s was relatively small. It is particularly attractive to integration into buildings as a replacement for gas or oil in heating or hot water installations. Solar energy has further uses in buildings, such as for lighting and cooking, which can significantly reduce energy demand. Even in Northern parts of the EU, its potential for applications in new and existing buildings, including private home, is enormous.

**Biomass**

Biomass as an energy source, with or with- out other fuels (solid fuels/waste) is now commercial in units of 10-30MW. Small, decentralised Combined Heat and Power (CHP) applications are of increasing efficiency and importance. Production costs are comparable with wind and solar energy, although installation costs are somewhat higher. EU capacity did not increase sub- stantially over the 1990’s. Predictions of market growth are positive, not least because of investment in technology development proj- ects. It is estimated that market potential in the EU could rise from 3,862 MW in 1995 to 8,766 MW in 2010. In the long term, Biomass has a theoretical potential of up to 25% of current primary energy (assuming 20 million ha of arable land for fuel crop with a yield of 6 to 8 Mtoe per ha and the avail- ability of 150 Mtoe of waste biomass).

**Geothermal and Heat Pumps**

Geothermal energy depends primarily on technology to the oil industry. The installed capacity in the EU has risen gradually in the 1990’s and is likely to be up to 20% of current primary energy. However, the market potential in 2010 is unlikely to exceed 2,700 MW, unless costs can be brought down. In order to increase this potential, low enthalpy sources need to be exploited and the exploitation of proven reserves must be intensified.
Since its inception in 1985, B.I.O. emphasises the interdependence of humanity and the natural world. The understanding of changing environmental circumstances and of the fluidity of the concept of environmental protection requires the development of a critical appreciation of the numerous influences affecting the interactions between humanity and the environment. Environmental pollution is an inter-national problem and a matter of vital importance for all. Concern over the many environmental questions is an inter-national task, particularly for highly developed, industrialised countries. We must acknowledge our individual and social responsibilities and the fact that environmental protection involves confronting conflicting interests. There is a need to balance environmental and economic priorities in order to achieve safe and just global management. Environmental education consolidates awareness of the importance of incorporating the environment in every human endeavour and enables the realisation of the interdisciplinary nature of environmental protection.

Defining the environment and the issues at stake

Telling the international character of environmental problems and the multidisciplinary nature of the environment is a priority in environmental education and one of the major B.I.O. goals.

The environment is an integrating concept referring to the sensitivity, experience and culture of each member of society. Environmental quality and quality of life are inextricably linked. Human rights violations, disease, hunger, lack of safe water resources and poverty are more common in areas of severe environmental abuse. Health problems linked to the environment, food subsistence and access to culture and general welfare, including security and peace, are some of the challenges to be faced. In this framework, culture - bio-culture - as defined by B.I.O., is a priority.

Scope and limits of the Bio-Syllabus

In 1990, B.I.O. launched a groundbreaking Bio-Syllabus demonstrating the incorporation and implementation of environmental dimensions in many academic disciplines. Now, more than a decade later, it is essential to revise and update the Bio-Syl- labus in view of the increasing societal demands for an all-encompassing environmental education. The scope of this revision is to dynamically promote the development of environmental education in primary, secondary, tertiary and adult education, as well as in vocational training. It is also to focus on the development of conceptual, methodological and practical guidelines for teachers and trainers, as well as for decision-makers in charge of the development and management of environmental education. Environmental education should be perceived as a priority in every academic, administrative (public and private), business and professional initiative. The subject matter of the Bio-Syllabus and the teaching methods to be applied aim to achieve a highly efficient environmental education with a view to the future.

Teaching and dissemination methods

To be interesting and effective, teaching techniques must focus on the state of the art in information and technology and also be continuously researched and revised. Caution should be applied to tailor the educational material available to the needs and mentality of the recipient population through appropriate assessment and research. Adaptation to local reality and the learner’s interests is vital in this context. Environmental education should be disseminated as widely as possible with the assistance of educational institutions, businesses, municipal authorities, governments, NGOs and other stakeholders. By promoting joint action in all sectors of society and the economy, a broad consensus about points of discussion

Why is environmental education essential?

The need for good quality training for teachers involved in environmental education cannot be overstressed. Projects to develop peer support systems for teachers seeking to introduce environmental curricular units into their classrooms should be encouraged, with teachers leading professional development activities in their schools and regions during the academic year. A network of teaching fellows and senior associates could be established to promote networking on a world-wide level. Through this Leonar-do da Vinci initiative, such projects could be enhanced. Teachers must also be encouraged and trained to use methods in which students become agents of their own learning by being truly involved in the learning process. Moreover, teachers should try to facilitate a holistic approach to environmental problems with special attention to the interdisciplinary nature of the environment.

Incorporating environmental education in existing educational systems

Environmental education is an interdisciplinary subject of relevance to many fields of teaching. Given the complexity and the various levels of relationships with society as a whole, a wide range of subjects can contribute to environmental education. Educational institutions should therefore be encouraged to devise their own environmental education profiles, based on their strengths and the overall focus of their activities. The non-exclusionary approach of environmental education is an opportunity to lift the barriers separating different disciplines and to offer a well-rounded education which is not bogged down by overspecialisation.

Environmental education is hard to dispense inside the classroom, cut-off from the outside world. Schools are encouraged to open up to the outside world through partnerships, consultation of research specialists, working with local communities and authorities, etc. Such objectives and methods necessitate inventing new ways of managing time in schools or other educational institutions. New programmes and curricula should be designed with this in mind, with the necessary adjustments in other sectors and agendas. The promotion of environmental education in practice involves the use of teaching techniques that are not necessarily routine. Therefore, the direct participation of teachers in designing and producing teaching and learning materials should be encouraged. The learning process has to be flexible and interactive so that students become independent and develop their own sense of initiative, responsibility and commitment. Current inefficiencies in teacher training could pose serious problems in the future. To better prepare for the challenges ahead, attention should be given to the intensification of initial and in-service training. Experience has shown that training geared onto the general educative process predominates over more specific options. Substantial efforts must be made to revamp the training curricula based on a rigorous analysis of each specific case so as to prepare teachers adequately on the basis of clearly formulated goals.

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& New Millennium Education Workshop

rado da Vinci Programme

29 - April 1, 2001

I
n view of the urgent need to counter the
crisis in values that has resulted in seri-
sous environmental threats and to assure
the continuity and appreciation of the frag-
gile gift of bio - life - on our planet, the par-
ticipants of the B.I.O. Workshop on Envi-
ronmental Education, who convened in
Athens on March 29 - April 1, 2001, reiter-
ate the B.I.O. proposals for an all-encom-
passing environmental education and, being
encouraged by the progress resulting from
the expansion of the sustainability concept
promoted by the UN, its special Organisa-
tion and numerous NGOs, recommend the
implementation of the following issues of
highest priority:

Building new ethics through
environmental education

- Environmental education should be at the core of
every human endeavour. The involvement of
every individual and sector of society and the
co-ordination of culture and technology are vital in
this context.

- There is need for a holistic interdisciplinary
approach in curriculum planning and design. This
is indispensable in order to integrate social, cul-
tural and environmental aspects and, in particu-
lar, values and ethics.

- Environmental rules and principles should be incor-
porated in obligatory codes of conduct for
representatives of public authorities, diplomats
and businesses.

- It is crucial to stress the positive relationship
between environmental ethics and the notions of
peace, poverty alleviation, and equity in soci-
ety.

- Environmentally ethical behaviour implies indi-
vidual responsibility that leads to action. Lifestyle
patterns should become disengaged from over-
consumption and for the protection of non-renew-
able natural resources are essential.

- To avoid further degradation and catastrophe,
the concept of defence has to be restructured on
the basis of environmental ethics and with a long-
term vision of international co-operation in envi-
nromental protection.

Investing in environmental education: a genuine profit for society

- The concept of profit needs to be redefined to
include the dimensions of quality of life, pres-
vovation of natural resources and biodiversity, bet-
ter health, and economic growth, elements which
constitute a "genuine" profit for humanity.

- Governments and international, regional and
national financial institutions as well as the pro-
ductive sector should be encouraged to mobilise
additional resources and increase investments
in education and public awareness.

- An independent fund for environmental edu-
cation needs to be considered. This fund would
encourage contributions from the public at large,
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issues.

- Investment is a crucial mean for capitalising on
the full force of education. Environmental edu-
cation can shape the attitudes of the profit-seek-
ing sector positively.

Reorientation of formal and non-formal education towards sustainability

- There is need to reorient education towards
lifelong learning. As promoted by the U.B.E.,
an interdisciplinary environmental education
lab library for every citizen on the planet is a priority.

- Non-formal education is as important as for-
mal education. There is a need to capture the
widespread attention of the general public and
actively involve the local administration (may-
ors, municipal authorities, etc.) in environmen-
tal awareness and training.

- Environmental education in vocational training
is indispensable not only for the transfer of new
but also for the enhancement of employment
opportunities.

- Environmental education is needed in business
and economics, in policy and decision-making, in
science and technology as well as in the fields of
legislation and jurisdiction.

- A two-way link between teachers and schol-
ar/sstudents, need to be created. Learners should be
the opportunity to acquire new knowl-
edge and skills through concrete projects and to
develop their own ideas and problem-solving ini-
tiatives.

- Participatory environmental education can act
as a catalyst for participatory democracy.

Proposals for implementation

- Revision and expansion of the existing Bio-Syl-
labs and development of new curriculum mate-
rials for all educational levels as well as audio-visu-
al materials on environmental issues.

- New economic and incentive / tax savings (ecu-
t) promoting investments in Cleaner Produc-
tion strategies.

- A Green Salaries instead of unemployment ben-
efits, in order that the unemployed to get involved
in environmental projects (tree-planting, recy-
cling, city cleanup, etc).

- A clearing-house to provide the use of
computer link-up networks of people wishing
to co-operate in environmental education.

- An electronic Bank of Ideas to be available on
the Internet can promote a world-wide interdis-
ciplinary exchange of information and encourage
environmental awareness.

- Volunteer environmental action groups to tack-
le local issues. The participation of youth and
senior citizens is particularly valuable.

- Environmental Olympics and Bios Prizes to award
individuals or institutions that have contributed to
the preservation and better understanding of the
environment.

- A World Referendum for people throughout the
world express their willingness to preserve the
environment and the continuity of life on our
planet.

- Environmental education can enhance the devel-
opment of an International Court of the Envi-
nroment, under the auspices of the Permanent
Court of Arbitration.

Participants

Expanding the vision of bio-environmental education: Biocentric ethics and culture
Dr. Agis Vavlanos-Arvanitis
President and Founder
Biopolitical International Organisation, Greece

Environmental ethics - a matter pending in
European curricula
Professor Marta Salona-Bordas
Department of Zoology
Universidad del Pais Vasco, Spain

Social and cultural environmental education
Professor Sofia Dascalopoulou
Head, Department of Social Anthropology
Dean, School of Social Sciences, University of the Aegean, Greece

Applications of energy and environmental education - environmental problems as a cultural issue
Vassilis Dikaioulakos
Scientist Associate
Energy Centre of the Peloponnese, Greece

International co-operation in curriculum development
Professor Hanay Efthy
Director of Environmental Studies
Cukurova University, Adana, Turkey

New trends in education for energy and
the environment
Professor Nicholas Hatziargyriou
Energy Systems
National Technical University of Athens
Greece

Environmental education as moral education:
Notes on the relation between natural and social
natures
Professor Michael Opieka
Director, Institute of Social Ecology, Germany

The shift of a paradigm: from "environmental education" to "bio-education"
Professor Alfred Rest
Senior Academic Counsellor
Institute for International Public Law and
Comparative Public Law
University of Koln, Germany

Environmental education curriculum
development
Professor Constantina Skanavi,
Director of Environmental and
Communications
University of the Aegean, Greece

Regional curriculum development
John Stylianakis
Regional Director for Environmental
Education, Crete, Greece

The importance of pluralism in
environmental education
Professor Nikolaos Vernicos
University of the Aegean, Greece
International co-operation in curriculum development

Professor Huny
Director of Environmental Studies
Cultural Anthropology
Aegean University, Aridaia, Atika

The general aim of B.I.O. is to encourage cross-cultural discussion and strengthen friendships between colleagues from different disciplines with a special focus on environmental education. There is a great need to establish an international educational programme in bio-environmental and bio-ethics in order to ensure that scientific knowledge and community values are joined into a common and shared perception to deal with the growing environmental crisis.

Regarding current inadequacies in environmental education, there are several questions to answer: What are the bottlenecks and disadvantages of the existing system? Why is the introduction of the life sciences in environmental education essential? An effective environmental education is crucial. The role of environmental education must be emphasised. Curriculum must be changed and the Bio-Syllabus must be disseminated through the I.U.E.B. We are all on the same boat: the globe. The important thing is what we do together for the optimisation of the world conditions through appropriate environmental teaching. How? The answer is through international collaboration. There are three key factors involved: Communication: Communication is the secret to success. Pass it on. Teamwork: Snowflakes are one of the nature’s most fragile things, but just look at what they can do when they stick together. The future promises fundamental changes in the global balance. Environmental education requires the development of a new force of society, the force of politics and the force of law, in close cooperation with bio-ethics. The growing awareness for environmental issues has also a strong influence on the nature of global priorities. It appears that the need for international collaboration in environmental education continues to increase significantly.

Environmental education curriculum development

John Stylianakis
Regional Coordinator for Environmental Education, Crete, Greece

Environmental education in our schools is mostly based on a theoretical curriculum, and projects are encouraged. Some general goals applicable to most projects are: raising student awareness through knowledge; active participation in initiatives that are useful for society and the environment; progress towards sustainable development. Through hands-on experience with environmental problems students have the opportunity to formulate ideas and attitudes concerning these problems. International student exchange programmes, such as Socrates and Comenius, are also an opportunity for students to learn about environmental problems in other countries. Field trips and visits to environmental research centres are encouraged in our schools, and teachers receive careful training in environmental education.

However, this is still not enough. If our planet is increasingly threatened by an environmental crisis, this is mainly the result of insufficient training and education. We have no more room for mistakes and cannot remain idle. The following priorities in environmental education are therefore proposed:

- All students should take classes in environmental education without being graded. A “green zone” addressing the needs of environmental education should be introduced in all school curricula. The syllabuses should be designed with the aim of promoting sustainable development. Investments in environmental education should also be encouraged. Teachers should be adequately trained to be able to cope with programmes in environmental education; A mutual benefit that a relationship between schools and society should be established; Environmental education can be introduced as an elective subject in tertiary education; Decision-makers should be encouraged to support these efforts and not hinder progress in environmental education; Ways of controlling the efficiency of the above measures should be established on a local, regional, national and international level.

- It is the era of globalization and distance education are very important. There is a very close relationship between the environment and society. Therefore, the basic concept of environmental education has to include the dimension of cultural potential.

By the year 2030, 3 billion young people will have to find jobs; this is a very serious issue for those who are involved in the education process. The curriculum at the University of the Aegean follows the same direction as Bioethics. Cooperation between B.I.O. and the University of the Aegean is strongly encouraged.

Environmental ethics - a matter pending in European curricula

Professor Marta
University of the Aegean, Greece

Bioethics is the field of applied ethics, mostly considered a synonym for medical ethics. Bioethics has various implications for developments in medicine and the biological sciences, such as in vitro fertilisation, surrogate motherhood, sperm banks, gene manipulation, abortion and euthanasia, organ transplants, human experimentation and quality of human life, that frequently require the co-operative efforts of philosophers, physicians, scientists and theologians.

But bioethics should not disregard environmental issues. In many parts of the world deforestation, loss of soil fertility, loss of biodiversity and local impoverishment are seriously threatening the quality of life. Extinction is forever; there is no return. Biodiversity is a non-material enrichment. Nowadays, many countries in tropical areas are forbidding the collection of plants and animals in their areas to prevent “bio-piracy.”

On World Environment Day, June 2nd 1998, the Governing Council of the Provincial Government of Ikaria approved an institutional declaration proposing that the environment be recognised nationally and internationally as a human right. This declaration was drawn up in co-operation with the Human Rights Institute of the University of Deusto and UNESCO Etxea, the UNESCO Centre in the Basque Country. The key concepts on which the proposal is based is what we do together for the optimisation of the world conditions through appropriate environmental teaching. How? The answer is through international collaboration. There are three key factors involved: Communication: Communication is the secret to success. Pass it on. Teamwork: Snowflakes are one of the nature’s most fragile things, but just look at what they can do when they stick together. The future promises fundamental changes in the global balance. Environmental education requires the development of a new force of society, the force of politics and the force of law, in close cooperation with bio-ethics. The growing awareness for environmental issues has also a strong influence on the nature of global priorities. It appears that the need for international collaboration in environmental education continues to increase significantly.

Environmental education curriculum development

Professor Constantine Skanavi
Director of Environmental Education and Communications, Environmental Department, University of the Aegean

Environmental education and awareness are popular concepts, however they have been much abused. All who concern themselves with the environment would like to see a more involved citizenry. Therefore, environmental education is essential. But today knowledge alone is not enough. Continuous education and training are necessary in order to mobilise every member of society and all age groups. Both children and adults must take a personal interest in the environment. They must also exert pressure on the politicians and demand environmental policy.

Very often the mass media blow environmental problems out of proportion, provoking false hysterical reactions from the public. Once these reactions die down, environmentalists are faced with derision. The public ceases to believe that environmental issues are important and considers the environment a dangerous hobby for the independently wealthy.

My research group at the University of the Aegean, in co-operation with three universities in the USA, is developing ways to measure and assess public environmental awareness. This is a complicated task because environmental awareness involves a number of different elements such as the protection of nature, overpopulation, natural resources consumption, environmental pollution, the environment inside our own homes, buildings, and waste reduction and management.

Most of us are aware of global problems like the greenhouse effect, ozone layer depletion, marine pollution, unsafe water resources, etc., but how can we determine whether the general public possesses this knowledge and what this means for environmental awareness?

The Environmental Communications movement aims at providing knowledge, raising awareness and developing behaviours and skills to allow citizens to participate intelligently and efficiently in decision-making that enhances environmental quality and counters environmental abuse. With the right assessment of knowledge and public sensitisation we can provide information for practical use and not just for blindfolded consumption.

Through a truly international and multidisciplinary environmental education, every citizen of the world can contribute to the spiritual renaissance of humanity. The Olympiad Sport can play a leading role in stimulating the process with the inherent aesthetic value of life on our planet. Environmental Olympiads and Bio-Olympiads, as proposed by B.I.O. since 1985, can encourage every individual on the planet to become involved in the race to save the environment.

The importance of pluriculturalism in environmental education

Professor Sofia Dascalopoulos
Head, Department of Social Anthropology
Dean, School of Social Sciences, University of the Aegean, Greece

In this era of globalisation and distance education are very important. There is a very close relationship between the environment and society. Therefore, the basic concept of environmental education has to include the dimension of cultural potential.

By the year 2030, 3 billion young people will have to find jobs; this is a very serious issue for those who are involved in the education procedure. The curriculum at the University of the Aegean follows the same direction as Bioethics. Cooperation between B.I.O. and the University of the Aegean is strongly encouraged.

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Todays a cultural and ecological crisis is apparent worldwide, and only education can help society to overcome this crisis. Education is humains best hope and most effective means in the quest to achieve sustainable development, i.e. to guarantee life and bios on our planet. Instead of focusing our attention mostly on economic development and new technologies, we must highlight the many other dimensions of progress, in particular ethics and moral values as promoted by B.L.O. since 1985. Over 100 million children between the ages of 6 and 11 have never attended school and tens of millions more drop out of school within a few months or years. Furthermore, there are over 800 million illiterate adults, most of whom have never been enrolled in school. Therefore, the first requirement in the quest for development and equity must be to change this situation and make schooling of quality available to all. But this goal, alas, is still far away.

At the end of the 1980s and the beginning of the 1990s, however, a new vision of education under the term education for sustainable development took shape. Education was no longer seen as an end in itself, as manifested, inter alia, by the principle of life-long learning, and as means for personal enlightenment, but also as a means for cultural renewal for facing global problems.

For environmental education to be successful, there is a need to reorient education towards sustainability. Adjustments or additions to existing educational systems will not be sufficient. Curricula and teaching methods need to be re-ordinated.

Non-formal education is as important as formal education, and bio-education for decision-makers, especially in business and economics, is key. Since its first International Conference in Athens in May 1987, B.L.O. has been a leader in matters of reformatting environmental education. In particular, by its concrete proposals for a curriculum revision and with the development of the Bio-Syllabus already by 1989, B.L.O. created the basis for a reform in educational systems towards the direction of a bio-education, including all levels of formal and non-formal education. In particular, with the creation of the International University for the Bio-Environment (I.U.B.E.), established in 1991, B.L.O. can guarantee and promote teaching and training of teachers, especially on the university level, and of decision-makers at every level. The I.U.B.E. can also contribute to a large extent to future environmental research and public service. The input of B.I.O. to the programmes of UNESCO, the Commission on Sustainable Development and related institutions is immense. When looking at the conferences and recommendations of B.I.O. since 1985, it can be stated that the UN activities have incorporated and stressed numerous B.I.O. proposals.

The B.L.O. vision for an environmental education for the future post-industrial society is an intensive concern. By and large, it should strengthen and support the co-operation with UN bodies, other NGOs and the private sector in order to increase its influence on running projects being supported by numerous governments and to expedite the realisation of its innovative approaches to environmental education.

New trends in education for energy and the environment

Professor Nicholas Hatziargyriou
Director, Institute of Social Ecology
Germany

Environmental questions cross over many areas. One of the most important obstacles to overcome is the commonly held perception that social problems are pitted against environmental problems. This is wrong, because society and the environment are intertwined concepts and nobody can do anything in society without affecting the environment. Furthermore, national and environmental policies are developed separately and this creates further confusion in society. It is therefore essential for environmentalism to become a societal priority and not just a matter of concern for minorities.

Environmental education needs sound goals, at least for education at primary and secondary levels. It needs sound goals, at least for adult education. It needs knowledge training, but also the development of motives for action. For environmental education to be successful, there is a need to reorient education towards sustainability. Adjustments or additions to existing educational systems will not be sufficient. Curricula and teaching methods need to be re-ordinated. Effective environmental education must be driven by perception, contact, judgement and action from both educators and students. Political intervention and standard-setting are crucial; a politically-sound message is needed at all levels. Positive re-education is also essential. But the question remains: Are we allowed to keep harming nature?
Bio-Syllabus for European Environmental Education

ARCHITECTURE

Most European city problems could be resolved by paying greater attention to the environment. Pollution reduction, waste minimisation and energy conservation can be furthered through environmentally-friendly urban design and construction. Awareness and information on opportunities existing worldwide to deal with the development of new possibilities for new types of buildings and new spaces in restructuring urban and agricultural areas, as well as human settlements in general.

"Bio-architecture" links the appreciation of the environment and biodiversity with urban design and planning. A "Biopolis," as promoted by B.I.O. since its inception in 1985, is the manifestation of this appreciation and function as a model for the harmonious co-evolution of human interaction with the bio-environment. It is based on the application of clean energy sources, cleaner production and bio-materials, and aims at creating a self-sufficient, aesthetically pleasing urban environment with minimal waste generation and with an active participation of every member of society in the protection of bio-diversity.

ECONOMICS

Economic projects can no longer be carried out for the sole sake of gaining maximum monetary profit. Important measures have been taken worldwide in an attempt to minimise the deleterious effects of the economy on the environment and communities around us. The world economy is now at the point of radically changing its attitude towards environmental preservation, and corporate leaders are encouraged to introduce bio-oriented values into their activities. The long-term goal of transforming the economic environment into one where development will be sustainable for generations to come has been achieved via sustainability promoting economic policies in industry, energy, transport, agriculture and regional development.

ETHICS

Human actions are altering environmental properties as processes in ways that have many unknown implications. Recent evidence that human intervention is seriously threatening life on our planet adds urgency to the need for "environmental ethics" to help society re-evaluate priorities and take action against negative trends. The EU acts as "catalyst" and enforces environmental protection and biodiversity conservation policies. It aims to harmonise the ethical guidelines for environmental protection with the bio-environment in order to achieve a sustainable world for its impact on the environment is not stable. New technologies that prevent pollution, rely on clean energy sources and encourage resource conservation should be further researched and pursued. Moreover, progress in every field of human endeavour should be evaluated in terms of its contribution to environmental appreciation and protection.

POLICY on industry-related risks, scientific research in and development of clean technologies and nuclear safety and radiation protection, must be implemented globally. The "bio-assessment of technology," as promoted by B.I.O. since 1985, involves a thorough re-evaluation of priorities in technology and the development of initiatives that respect and help the environment. These initiatives include environmentally-friendly technology as well as progress in genetic engineering and biotechnology, which should, however, always be carried out with the aim of protecting every form of life on our planet.

PUBLIC HEALTH: The environmental field is one of the most rapidly developing industries worldwide. The EU promotes environmentally-friendly tourism and encourages environmental impact assessment as one of its major integration policies. It is important to stress environmental and cultural appreciation in tourism, and to further activities that promote an international exchange of experiences in environmental preservation.

DIPLOMACY: Pollution does not discriminate along national boundaries; therefore, the environment is possibly the strongest link in international co-operation. Especially in issues like "transborder pollution" are concerned, the need for international cooperation has increasingly agreed upon preventa- tion of transborder pollution. Diplomatic capacity can enable countries to exert control, but also to eradicate environmental deterioration, through international co-operation and the sharing of experiences and know-how. "Bio-diplomacy" aims at pursuing environmental goals through diplomatic channels. It contributes to preserving the natural environment and the great wealth of bio. The co-ordinated pursuit of bio-diplomacy at the international, national, regional and local level, will undoubtedly provide for increased co-operation among people across all dividing lines.