Bio News

Bio News No. 10 - April 1997
A newspaper for the appreciation and protection of the bio-environment, a shift from an anthropocentric to a biocentric vision

Bio-Peace for the Millennium
Bios may serve as a lever to lift the spirit of the world

Rising from the ashes
a biocentric vision for Chernobyl

World Referendum
a new pathway for democracy

On the occasion of the 11th anniversary of the Chernobyl disaster, Ukraine has undertaken a series of initiatives to search for ways of overcoming current difficulties and securing a brighter future. In this crucial period of transition, decision-makers and government representatives have considered Biopolitics and the Biopolitics ideals as capable of providing Ukraine with the necessary models for change. As a result, the B.I.O. was called upon April 14-17, 1997 to elaborate on the implementation of biocentric concepts in Ukraine, in order to ensure economic and societal development that respect the environment and improve quality of life, on a long-term basis. In a series of discussions with members of parliament, in Kiev at a conference held in Slavutich, with Biopolitics as the governing theme, it was possible to elaborate on an action plan that would enable Ukraine to exit the present crisis, through the pursuit of biocentric endeavours.

Slavutich, the city adjacent to the Chernobyl Power Plant, and, hence, most affected by a potential shutdown, is in dire need of attention. It is therefore essential to promote employment opportunities that will guarantee the development of the region and will also take advantage of the available infrastructure, in an effective manner. Within this framework, the initiative to turn Slavutich into a university town could not be more timely. The B.I.O. International University for the Bio-Environment (I.U.B.E.) Visiting Scholars Programme would be a very good first step in this effort and could prepare the ground for more extensive academic development in the future. Furthermore, the evolution of Slavutich into a "biopolis" model, where every endeavour would be geared towards environmental appreciation, can help restore confidence in population, and promote constructive and productive enterprise.

Chernobyl, a place of destruction, can serve as a powerful model to help society acknowledge the importance of embracing biocentric values and preserving bios on our planet. Like a phoenix rising from the ashes, Chernobyl can be reborn. A biocentric vision can help create a balanced society, with the appropriate legal framework to support both technological progress and environmental protection. On the wings of the phoenix, messages of hope can resonate across the entire planet.

Bios Olympiad

The B.I.O. is convinced that the future belongs to the young. The B.I.O. has also been among the first to point out the multilateral nature of environmental protection. In celebration of the new millennium in the spirit of "bios" culture, a concept that stresses the complementarity between human culture and the bio-environment, the B.I.O. will be holding the First Bios Olympiad, in January 2000.

By bringing together all fields of human endeavour to promote evolution of bios, the Next Bios Olympiad will be set the pace for a millennium of hope, peace and the harmonious co-existence of all forms of life.

Bios Prizes

We are on the threshold of a new millennium. In order to overcome the crisis of values in modern society, brought on by severe environmental deterioration, a new order of priorities is essential. Everyone has to take action if we are to reverse negative trends and ensure the harmonious co-existence of all forms of life. Humanity is wasting time. Solving environmental problems requires a dynamic approach, combining past experiences and present opportunities to establish new, enriched models for the future.

In October 1996, the B.I.O. awarded Commander Jacques-Yves Cousteau the First Bios Prize, in recognition of a lifetime achievement in environmental protection. Commander Cousteau was not just the first, but also the only Bios Prize recipient for this century, emphasising the enormous impact of his work and his status as a pathfinder and a pioneer. On the eve of a new millennium, it is essential to start promoting environmental achievements, in every field of human endeavour, with the goal to award Bios Prizes on a regular basis, in as many fields as possible.

This has been one of the major B.I.O. aims, since 1992, when, the B.I.O. suggested the enrichment of the Olympic Games with biocentric values and proposed the award of Bios Prizes to individuals or institutions that have made a significant contribution to environmental appreciation and preservation. Furthermore, the B.I.O. has been making efforts for global cease-fire during the Olympics, an initiative that was adopted as a UNA resolution, in 1994.

The International University for the Bio-Environment (I.U.B.E.)

To reach a new state of the world, education is key. An integrated biocentric education, that secures lifelong environmental literacy for every citizen in the world, is a necessary vehicle for the successful furtherance of a global appreciation of bios. Bearing in mind that universities should be, by definition, "universal," the I.U.B.E., launched by the B.I.O. in 1990, promotes a model bio-education, by introducing environmental concepts to all academic disciplines. The I.U.B.E., which is primarily responsible for the global dissemination of the B.I.O. goals (p.2), is based on a Visiting Scholars Programme, whereby educators and decision-makers, from around the world (p.14-15), promote biocentric concepts in current educational curricula. The aim is for the I.U.B.E. to become a worldwide initiative for the development of multidisciplinary environmental concepts, beyond the confines of conventional environmental science, leading to a revised educational system for the entire planet.

The U.B.E.E. in Budapest

To facilitate the above plans, the B.I.O. has recently established an I.U.B.E. branch in Budapest, Hungary. The purpose is to launch a pilot programme in "Bio-Diplomacy and Bio-Diplomacy" consisting of vocational training lectures and seminars, for public administrators and business executives. This programme will be officially launched in Budapest in August 1997, with the participation of the Fletcher School of Law and Diplomacy and other prestigious institutions. A separate lecture series for students is also being planned.

The urgent task ahead is to be aware of these challenges, and be morally and mentally prepared to face the uncertainties ahead.

For this crucial task to be successful, it is essential to have global participation. Presently, even in democratic regimes, citizens rarely speak out as a majority and are often overshadowed by the pre-sumptuous attitudes of arrogant minorities. Current breakthroughs in the field of communication technology can provide the opportunity for the public to be actively involved in issues concerning our daily lives and be able to cast a vote, anytime, through computer networks and other communication link-ups, which can make immediate feedback possible from any corner of the globe. A World Referendum on the commitment to protect the bio-environment can be the manifestation of such an attempt, with many more dimensions to follow. These dimensions can open up new pathways for a participatory democracy, where opinions will be actively expressed and politicians will no longer be able to evade their responsibilities.

In order to avoid a robot-like, mechanistic society, human creativity needs to be channelled towards an inspired and productive "renaissance." Technology, coupled with a sound system of values, provides ample opportunities for growth and can lead to the blossoming of the human spirit. As we are traversing an electronic era, telecommunications could change the future of our society. It is therefore imperative that we apply the full potential of these new tools to guarantee a society made up of responsible and affected citizens.
Goals of the B.I.O.

International co-operation for the better understanding and appreciation of the bio-environment. The bio-environment recognizes 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.

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. 

Bio-culture - Bio-environment. Two essential dimensions for building new societal values for the next millennium.

Promotion of Bio-education through the International University for the Bio-Environment. The International University for the Bio-Environment was launched in order to reform education world-wide, and promote a biocentric curriculum on 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.

Raising public awareness of the ramifications of the biological sciences, in order for more people to realize 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-communication, bio-history, bio-education and bio-diplomacy.

International Campaign for Environmental Olympi- cics and Bios Prizes. The Biopolitics International Organisation has been proposing the introduction of a new kind of Olympic Games, a proposal which has received world-wide support. This acknowledgement may mean to new fields of human endeavour, such as bio-legislation, bio-medicine, bio-ethics, bio-arts, bio-linguistics, bio-economics, bio-athletics, bio-communication, bio-history, bio-education and bio-diplomacy.

Bio-ethics, bio-economics, bio-education and bio-diplomacy. A biocentric curriculum on every educational level, as well as new curricula for every level of education, as well as audio-visual materials on issues related to bios and the bio-environment.

Sponsors

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Progress

* Television interview at WNYX, New York, USA

* Biopolitics featured in the documentary “Morality as a basis for overcoming the crisis in Ukraine,” a major Ukrainian production on the occasion of the 11th anniversary of the Chernobyl catastrophe

* Opening address, conference on “Perspectives on sustainable ways of living,” Olomouc, Czech Republic

* Lecture, Hungarian Academy of Sciences, Budapest

* Recipient of the Lions Club “Athena” award

* Closing address, Second World Conference of the Centre for Hellenic-American Friendship, Athens

* Weekly B.I.O. articles in the Athenian daily Asfidesfot

* Weekly B.I.O. articles in the New York daily National Herald

* Monthly B.I.O. articles in the Greek Business Journal

* The B.I.O. President is appointed Corresponding Member of the Pontifical Academy of Life

* Participation in the Pontifical Academy of Life Third General Assembly, The Vatican

* Lecture, Aegean University, Chios, Greece

* Lecture, Panhellenic Union of Biologists Conference, University of Athens

* Biopolitics as the governing theme, conference on “Morality as a basis for overcoming the crisis in Ukraine,” on the occasion of the 11th anniversary of the Chernobyl catastrophe, Ukraine

* Series of meetings with Ukrainian members of parliament and discussions on biocentric initiatives for Ukraine

* Lecture, WREMINSECO 97 Conference, Sofia, Bulgaria

* The B.I.O. President is appointed “Doctor Honoris Causa” by the Council and Rector of D.I. Mendelejév University of Chemical Technology of Russia

* Danube River Bonds: Bio-Environment - Bio-Culture, conference organised in cooperation with City University Bratislava, Bratislava, Slovak Republic

* Series of lectures on biodiversity and bio-culture, Skopelos, Greece

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


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**Coastal zone pollution**

Dredging in estuaries affects the environment in a number of ways. These include alteration of tidal levels and the loss of fish nursery areas such as seagrass beds. Dredging in Botany Bay has severely reduced the extent of seagrass beds. On the northern shores of the bay, seagrass beds were overgrown by sedge or weed. In the area where these have been destroyed, the water quality has declined, and the estuary has become more turbid.

**Washing your car without polluting the environment**

Some helpful tips provided by the New South Wales Environmental Protection Agency

1. **Where to wash your car**
   - **To try to wash your car on a grassy area to minimise the runoff.**
   - **Wash your car in the driveway if it drains onto a lawn or garden area, but avoid using the driveway if the water runs into a street or drain.**
   - **Always ensure the area where you wash your car does not drain into the stormwater system, including the drains in the street.**
   - **If you have no suitable area to wash your car, look for an alternative location - perhaps your friends or neighbours have a suitable area you can use.**
   - **Some service stations provide an area for car washing, where runoff water is treated to remove pollutants before it goes into the sewer.**

2. **When you wash your car**
   - **Use a trigger hose - or even better, a bucket to save water.**
   - **Use detergents and soaps sparingly.**
   - **Providing information to the public on the quality of water through the Beachwatch, Harbourwatch and Hawkesbury-Nepean water quality programmes and the State of the Environment reports.**
   - **Supporting environmental education programmes, as well as providing financial resources to communities through great programmes such as the Environmental Trust.**
   - **Working with the community to tackle difficult water quality problems such as stormwater pollution and urban runoff.
The common heritage of mankind and the new concepts of responsibility

The common heritage of mankind is one of the most pronounced concepts of modern environmentalism. Its scope has been steadily widening and its protection is gradually becoming the subject of environmental ethics and international law, at the same time. However, depending upon its definition and different ethical approaches, the importance attributed to the concept of common heritage changes. The variable character of the concept is further complicated by the nature of the responsibility towards its protection and development.

International Environmental Law is still far from having concrete rules to ensure the proper defence of the common heritage of mankind. The protection and utilisation of transboundary watercourses is one of the most important tasks in our community. Upper riparian States often interfere with the flow of watercourses in various ways and distort the environmental balance through pollution, thus disregarding their international responsibilities. It is therefore essential to review the concepts of common heritage and responsibility, and to emphasise the need for bilateral and multilateral efforts to protect the common heritage of mankind.

Environmental governance for Management of transboundary freshwater bodies in a manner and politically acceptable poses a

Dr. Julia I Ullo Academic Officer
The United Nations University, Tokyo, Japan

There are numerous rivers, such as the Danube, that are shared by two or more countries. Management of transboundary freshwater bodies in a manner that is environmentally sound, as well as socially, economically, and politically acceptable poses a challenge to the international community. The issues involved are complex and cover both quantity and quality of water for competing uses, including water supply, industry, agriculture, energy production, navigation, recreation, and ecosystem needs.

Goverance refers to the complex set of values, norms, processes, and institutions by which society manages its development and resolves conflicts, formally or informally. It involves the State, but also civil society at the local, national, regional and global levels. For environmental governance, it is necessary to develop international legal instruments and mechanisms that set the rules for dealing with the various issues. In Chapter 39, the UN Agenda 21 called for the review and development of international environmental law in order to evaluate and to promote the efficacy of that law, and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns.
Water resources have been essential to the evolution of life and human civilization and have played a crucial role in socio-economic developments. The Danube, one of the largest European rivers, traverses 10 nations (Germany, Austria, Slovak Republic, Hungary, Croatia, Yugoslavia, Romania, Bulgaria, Ukraine and Moldova) and influences the lives and livelihood of millions of people.

In the recent political transition period of these nations have experienced, the time is ripe to re-examine prospects for co-operation (based on the potential expansion of the European Union) and focus on the growth of commercial and cultural relations, using the Danube as a common point of reference. As the river itself has suffered serious deterioration due to environmental pollution, the development of long-term multilateral initiatives for its restoration and protection, as well as for a more thorough appreciation of bio, can bring all these nations together in a common cause.

The bio-environment has been the single most important correlation in human history and can successfully promote international co-operation and understanding. With the construction of a network for collaboration, the “Danube Countries” can come together in celebration of their culture and heritage. As the Danube flows from the Black Forest to the Black Sea, it carries messages of peace, hope and cooperation. Applying these messages to every endeavour can improve our quality of life and lead to a brighter future.

This conference will serve as a forum for the exchange of ideas on the importance of drawing lessons from history, with regard to the interactions among people living near the Danube, and using these lessons to build a harmonious future. With the implementation of biocentric principles as a governing theme, leaders in the fields of politics, diplomacy, science, academia and business will discuss the contributions their respective disciplines can make, and will propose models for new thinking and action.

**Business co-operation among Ukraine and other Danube countries: environmental aspects**

Dr. Stanislav Sokolenko
Chairman of the board
UKRMPEX Joint Stock Company, Ukraine

Environmental awareness is an integral part of the development of bio-culture, bio-education, bio-policy, bio-management, integration and bio-concepts, which are important for the establishment of mutually beneficial international co-operation among the “Danube countries.” Much attention is given to bio-legislation, water and environmental management, and waste processing and utilisation. Environmental factors are extremely important for the future development of the agricultural potential of Ukraine. The Danube is the main source of water supply to southern Ukrainian fields, currently suffering from water deficiency. It is essential to develop new ways for Ukraine to exit the economic and environmental crises. Bio-business and the introduction of clean and environmentally compatible technologies, therefore, is a priority.

**transboundary water resources**

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The United Nations University project on Hydropolitics and Eco-Political Decision-making aims at a comprehensive and objective study of water as a limiting factor for resources sharing and international water bodies, in view of providing bases for sustainable environmental and political management of crucial resources. The project aims to identify the issues in dispute concerning water resources, select alternative scenarios that could lead to the solution of complex problems related to water and the environment. Several important questions bear on the relationships between and the conditions processes through which the concerned countries are likely to agree on mutually satisfactory solutions to the problems. Of the studies under the project is concerned with the discussed case of the Czabcikovo-Nagymenyos Barrier System in the Danube, between the Slovak Republic and Hungary.

**PROGRAMME, cont.**

**WATERWAYS AND WATERWORKS**

**INTERNATIONAL CO-OPERATION AND CONFLICT RESOLUTION**

HYDROPOLITICS AND CONFLICT RESOLUTION: lessons from the Colorado, Indus, Nile, Jordan, Irrigation, and Danube, Professor Masahiro Murakami, Department of Infrastructure Study, Tokyo Institute of Technology, Japan

• Globalization of health: sea-borne disease, Migration, Vladimir Holzik, Research Institute, Slovak Republic

• The Galicniko-Nagymenyos dam: social, political and cultural conflicts, Miklos Okus, University of Bratislava, Slovakia

• Political Science and Economic Cooperation: contribution to the Danube, Jan Humel, Department of Government Commissioners, Slovak Republic

• Environmental governance for transboundary water resources, Dr. Juha I. Laitinen, The United Nations University, Tokyo

• Biological and water resources: local to regional, to mobile, Libor Jansky, Comenius University of Bratislava, Slovakia

• Waterworks of Danube tributaries, Jan Humel, Department of Government Commissioners, Slovak Republic

• Water resources and the environment: a psychologist’s standpoint, Dr. Karoly Szoke, Institute for Environment Protection, Hungary

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**Environmental NGO law**

Professor Efthimiopoulos, Technical University of Crete, Greece

**Nuclear power stations on river banks: ecological aspects**

Research Institute Bratislava, Slovak Republic

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**Environmental pollu**

• Environmental pollu**

**Kernforschungszentrum Karlsruhe, Germany**

**Restoration Centre**

Jozef Turcan, Department of Political Science Central European University, Hungary

**Cultural programme**

Jozef Turcan, Department of Political Science Central European University, Hungary

**International Hydropower**

Professor Dragan Simeunovic, University of Lodz, Poland

**Geophysical Institute Belgrade, Yugoslavia**

• Benefits and risks of today’s science and technology: a psychologist’s standpoint, Dr. Jovana Djoric, Faculty of Political and Social Sciences, University of Belgrade, Serbia

• New trends in water protection and measure, Jerrod L. Davis, College of Coastal Georgia, USA

**Biopolitical problems of large-scale hydrotechnical construction**

Professor Alexander Tkac, Academy of Sciences, Ukraine

**Bio-culture: non-violence and future quality of life**

Professor Antonina Brucevi, Saint Petersburg State Technological University for Plant Polymers, Russia

**Sanjin Dragojevic**

• Hydroelectric power projects, Jerrod L. Davis, College of Coastal Georgia, USA

**Bio-environment has been the single most important correlation in human history and can successfully promote international co-operation and understanding. With the construction of a network for collaboration, the “Danube Countries” can come together in celebration of their culture and heritage. As the Danube flows from the Black Forest to the Black Sea, it carries messages of peace, hope and cooperation. Applying these messages to every endeavour can improve our quality of life and lead to a brighter future. This conference will serve as a forum for the exchange of ideas on the importance of drawing lessons from history, with regard to the interactions among people living near the Danube, and using these lessons to build a harmonious future. With the implementation of biocentric principles as a governing theme, leaders in the fields of politics, diplomacy, science, academia and business will discuss the contributions their respective disciplines can make, and will propose models for new thinking and action.**
Forest ecosystems and soil preservation

Organic farming in the Baltic countries: social aspects of development

Dr. Alja Zobena
Assistant Professor
Department of Social Sciences
Latvia University of Agriculture

Along with structural changes, new farming practices have developed in the Baltic countries during the last two decades. Two different types of organic farming were introduced in the late 1980s. Today, in Latvia, about 20% of farmers have converted their farms - a total of 1000 ha. to organic or biodynamic farming. Moreover, the first “green labels” were just recently established. Estonia has approximately 119 ecological farms in total. In Lithuania, organic farmers control 1171 ha. of land. The aim of this study is to analyse the social aspects of development of organic farming and evaluate the future prospects of such farming practices. First, the understanding of the concept of organic farming in the Baltic countries has been analysed and the position of organic farming among other agricultural practices has been looked upon. Secondly, connections between organic farming and the agro-food chain have been addressed. Thirdly, the future prospects of the development of organic farming in the Baltic States have been discussed.

Analysis of organic farming as a farming style allows to draw some conclusions about its development and future prospects in the Baltic countries:

1. Organic farming, as a sustainable farming practice, offers the most radical solution to environmental problems in agriculture.

2. Organic farmers are very active in forming voluntary organizations.

3. State support for the development of organic farming in the Baltic countries is positive, but due to poor financial conditions some farmers are unable to take up the practice.

4. Organic farmers have serious problems with marketing their products.

Waterways and waterworks International co-operation and conflict resolution

International rivers, hydropolitics and conflict resolution

Professor Masahiro Murakami
Department of Infrastructure System Engineering, Kochi University of Technology
Japan

There were 214 international rivers and lake basins covering 47% of the land area in the world in 1978. After the end of cold war in 1989, there are more international rivers in the regions of Eastern and Central Europe, with some fears of increasing potential conflicts among the riparian States. International river development had significant influence and/or adverse effects on the socio-economic system balance not only along the rivers, but also in the inland and/or coastal delta. Not much attention was paid to solving the increasing potential conflicts over international waters and the creeping environmental problems, and time is fast running out.

Not much attention was paid to solving the increasing potential conflicts over international waters, or the creeping environmental problems, and time is fast running out.

Integrated ecosystems: a recent strategy for water management

Dr. Pavel Punochar
T.G. Masaryk Water Institute, Czech Republic

"There is no life without water." The first article of the European Water Charter (Strasbourg, 1968) clearly states the basic importance of water, not only for economic and social development, but also, for sustainability of life on the Earth. The principles of the Charter are continuously implemented, through environmental policies, by all developed countries. Later, the Rio (1992) and Gland (1994) Declaration of the urgent protection of water resources as an essential condition for the development of future generations. The protection of water resources within the natural basin represents the recent strategy for water management. This implies, inter alia, the application of environmental approaches, taking into account the fact that the state of and changes in water quality result from interactions between water quantity, biotic and abiotic factors, and habitat structure in the streams and floodplains. Accordingly, restoration of biodiversity, as close as possible to the natural situation, is one of the main goals of watershed rehabilitation. Because of this, environmental research and programmes for protection and improvement of watercourse habitats form an integral part of water management action plans. In this context, the Commission for the Elbe River Protection will be illustrated.

The philosophy of river problems local to regional, static to mobile

Libor Jansky
Comenius University
Faculty of Natural Sciences
Bratislava, Slovak Republic

According to the statistics, thirteen of the twenty-five major river basins in Europe are transboundary river basins. The Danube river basin is the largest transboundary river basin in Europe. As a result, several local and regional problems arise and are exacerbated by their superimposition on other non-river problems, e.g. religion, politics, historical issues, regional conflict, relative prosperity issues, etc. The disputes over the Gabčíkovo waterworks between Slovakia and Hungary is one such example.

The Danube river basin is the largest transboundary river basin in Europe. As a result, several local and regional problems arise and are exacerbated by their superimposition on other non-river problems, e.g. religion, politics, historical issues, regional conflict, relative prosperity issues, etc.
Biopolitics in action: visions and projects of hope cornerstones for a positive future

Most solutions offered to our unprecedented but manmade global crisis are either inadequate or lack a strategy of implementation. A realistic response must at the same time think big (problem-adequate) and build on/link the wide diversity of local/regional solutions already available, leading to a shift in the public perception of what is possible and the experiment of new strategies. This requires inter alia new international institutions which both democratise the global level (‘globalisation’) and install a bioethical framework for this process by promoting a new hierarchy of values.

Jacob von Uexkull
Chairman, The Right Livelihood Award

Environmen tally-sound hydroelectric power projects

Tibor Harosi
Renewable Energy Club
Budapest, Hungary

Rivers running on their own alluvial cones form inland deltas, with numerous branches and islands, and large floodplains with wetland ecosystems. Alluvial cones are used to accommodate large potable water stocks. These river sections generally cause considerable shipping problems. The “classical” hydropower plant construction elements i.e., transverse dams, reservoirs, river canalisation, diversion of the majority of the water to artificial canals, series of drops in the original river bed, etc., generally cause unacceptable changes in the environment and especially in the wetland ecosystems. My innovation and proposal is a new approach: planning hydroelectric power plant systems with environmentalist principles; planning for maximisation of nature protection and conservation instead of maximisation of electric power production; planning hydroelectric power projects without reservoirs, transverse dams, and cascades to the floodplain. The environmentally sound hydroelectric power project for rivers running on alluvial cones is a self-regulating system, which can produce electricity without using the potential energy of the entire river, but only of certain “free” parts, which are not necessary for transporting the sediment. It can maintain the original dynamics of water level changes below the floodplains and neighbouring terrains, because it will involve the construction of transverse dams only in the insulated shipping canals and not in the main river bed. It can save and restore the original wetland ecosystems and can save the quality of groundwater stocks in the alluvial cone. Moreover, it can support the normal shipping route for the whole year.

Building a civic society: democracy and civilisation

River power politics and bio-diplomacy

Ambassador Kai Falkman
Ministry of Foreign Affairs, Sweden

The mythical power of rivers, their healing capacity, consequences of respect and disrespect for “living water,” river water as a political instrument and the role of diplomacy for international allocation of water resources, in order to prevent conflicts, are discussed. Bio-diplomacy is the new dimension in future river power politics.

Biopolitics versus sustainable development

Christos Efthymiopoulos
Physicist
Biopolitics International Organisation, Greece

Sustainability introduces new development models. Biopolitics introduces new value models for society. Sustainability is an anthropocentric concept. Biopolitics is a biocentric concept; it gives priority to the protection of bio rights and to the promotion of bio-culture. Sustainability is a one generation approach to human development. The bios theory is a millennium approach to bio-environmental development. Sustainability provides practical guidelines for policy. Biopolitics provides sound ethical and educational foundations for society. Biopolitics provides sound ethical and educational foundations for society. Sustainability is an intermediate step towards Biopolitics.

Quality of life: improving or deteriorating with time?

Dr. Konrad Waloszczyk
Technical University of Lodz, Poland

A basic distinction among environmental thinkers is that the present, dominant techno-economic system causes a deterioration in quality of life, even in developed countries. This process has been particularly evident during the last two or three decades. There are arguments to this view, however, that do not focus as much on environmental degradation, but on other indicators of quality of life: a better education, health care, protection of civil rights, new means of communication etc. How can we establish the real indicators of quality of life? Is it improving or deteriorating in our time?

Biocentrism: new thinking

Professor Zdzisława Platek
Head of the Institute of Philosophy of Natural Science, Jagiellonian University, Krakow, Poland

Biocentrism requires a radical revision of the position of man in nature and a certain detachment from our moral intuitions, that are shaped by anthropocentric traditional ethics. To comprehend the place of humans in nature, from a biocentric standpoint, a profound change in the widely accepted points of view is needed.

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Continued on page 12
The state of the environment in Venezuela

Ministry on the Environment and Natural Renewable Resources

Venezuela

The need for environmental monitoring is especially important in countries like Venezuela that enjoy an extraordinary variety of ecosystems, and a wide range of soils and climates. The conservation, protection and improvement of the environment in Venezuela is a strategic objective of the nation’s development plans. The Ministry of the Environment and Natural Renewable Resources (MARNR) has been responsible for the generation, compilation, analysis and dissemination of baseline information on the environment and renewable natural resources. MARNR is responsible for the generation, compilation, analysis and dissemination of baseline information on the environment and renewable natural resources. In 1993, MARNR established a National Centre for Environmental Monitoring to provide reliable information on the scale of environmental problems in Venezuela, and on the successes and failures of environmental policy in dealing with them. What follows is a series of reports on the state, quality and quantity of Venezuelan water resources, and an analysis of environmental problems linked to pollution from agricultural, industrial and urban activities.

Figure 1: Trends in water levels in selected aquifers 1970s-93

Monitoring

The Ministry of the Environment and Natural Renewable Resources (MARNR) is in charge of monitoring climate and water resources. It has an extensive network of rainfall stations, but insufficient hydrological and particularly weather stations (ranging from 24-94% below recommended densities). Rainfall Data collected at sites for the period of 1968-91 showed that an average annual figure for Venezuela is 1,705 mm. Rainfall for 1993 was 1,874 mm, almost 10% higher. Evapotranspiration: the average for 1968-91 was 1,105, while in 1993 it was 1,400 mm, some 6% lower.

Water flows: measurements were taken at Maracay near the Orinoco delta and at Coro, on the Caribbean, from 1970-1992. The average flow was 37,395 cubic metres per second (m³/s). In 1990, it averaged 41,787 m³/s, some 11.7% higher. Average water levels in coastal waters have been monitored in ten aquifers (looking at average levels in four or more wells in each). The average water level fell by an average of 0.27 metres a year (m/y). Water levels rose in 2 aquifers, by an average of 0.13 m/y. In 1990, levels fell in 6 out of 9 aquifers by 0.36 metres. They rose in 3 aquifers by 0.27 metres. Figure 1 illustrates these trends.

Water supply

From 1943, the National Institute of Sanitary Works (INOS) was responsible for discharging water supply and waste water treatment for the vast majority of the population. In 1968, a major restructuring of central government services saw the decentralisation of public water supply, creating HIDROVEN (the Venezuelan Hydrological Company) and ten regional water enterprises (EHRs), which started in mid-1991. After a period of transition, the EHRs are expected to become self-financing by charging for water supply.

In 1994, HIDROVEN and the EHRs produced 2,854.4 million m³ water, supplying 83% of the population. Some 62% of the population are connected to waste water and rainwater collection systems. Domestic users account for 31% of abstracted water, industry for 4%. Nearly 55% of abstracted water was not invoiced.

The cost of a cubic metre of water is roughly 23 Bs (In late 1993, there were approximately 100 Bolivars to the US Dollar), and uses 11.6 kg of chlorine and 38.7 kg of aluminium sulphate.

Water quality

Water quality requirements are determined by end use. In Venezuela, there are 7 such categories: domestic use, agriculture, shellfish farming, recreation, industry, navigation and energy generation.

Figure 2: Beaches and seashore fit for recreation, 1985-94

Pollution

Venezuela’s main pollution hotspots are in the north. Deterioration arises from intense agricultural, industrial and urban pressure on water, air and soil resources. Rivers, lakes and coastal waters are affected by different pollutants, such as partially treated or untreated sewage from industrial and urban centres, and from agricultural and cattle farming activities. Recently, rivers in the south-eastern region have registered contaminants arising from gold mining and the extraction and processing of iron and aluminium.

The water bodies most affected by pollution are lakes Maracaibo and Valencia, the Manazanares, Nevert, Toquio, Turbio, Try and Yanco rivers in the south-east. The Venezuelan government has promulgated a series of laws to control effluent discharges. A recently enacted Environmental Penal Act lays down a range of environmental offences and sets out the penalties for committing them.

Information

MARNR has developed information-gathering programmes for Lakes Maracaibo, Valencia, and the rivers Try, Nevert, Yanco and Manazanares, as well as beaches and coastal waters which are heavily used for recreation and tourism. Water quality standards have been set for discharges to water bodies. A major data gathering exercise on water quality has been undertaken by the Hydrology Department and across a national network of 205 stations on 172 rivers since 1986. This has yet to be analysed for systematic data on water quality. Prior to periods when there is an influx of holiday-makers, a sampling programme is required by law on popular beaches to determine their suitability for recreational use.

In general, the percentage of unfit beaches increased from 1985 to 1992, and has been falling steadily in 1993/94. The Dirección General for Environmental Quality of MARNR maintains a register of pollutant activities, covering aquatic, atmospheric and solid waste emissions. There are 5,246 sources of water pollution in the country, with 11,528 industries on the register. Of these, 374 (32%) have waste water treatment systems. Industries can be required to report on up to 33 different parameters for effluent quality. MARNR requires water samples to be analysed at the expense of industry by one of 50 registered laboratories. The Pan-American Health Organisation’s rapid evaluation methodology for pollution sources gives emission factors to the range of industrial processes.

The Caribbean receives a pollution load corresponding to almost 69% of national industrial activity.
“Archipelagic Sense” asserts the essential unity of land and water in Indonesia, and their complimentarity with the air and sky above. It affirms that all four are vital components of the country called Indonesia, and its people are, therefore, called upon to defend, protect and foster, not only the individual components, but also the unity that sustains their existence.

**“Wawasan Nunantara”**

The Archipelagic Sense

Irawan Abidin
Ambassador of the Republic of Indonesia to the Holy See

It is of great significance that the Indonesian word for country is not just tanah, but tanah air meaning “land water.” The reference, of course, is to the fact that Indonesia, being the world’s largest archipelago, has notably more marine territory than land.

There is also a good historical reason behind this. We Indonesians are of Malay stock - just like the Malaysians, Bruneians and Filipinos. Tens of thousands of years ago, our common ancestors lived in Southern China but with the explosion of the population of the Han people, they were pushed southward. By moving south, they always oriented towards the sea. That is how peoples of Malay stock came to occupy much of the coastal part of mainland Southeast Asia and virtually all of insular Southeast Asia. Sumatra, Indonesia’s largest island, gave rise to the Srivijaya empire, the greatest naval power that Southeast Asia has ever known.

But things changed radically when, starting in the 16th century, the countries of Southeast Asia were successively colonized by Western powers. The ocean which once united the countries of Southeast Asia, in trade and migratory movements, now became a barrier to their interaction, as the Western powers carved up the area among themselves and denied the people of the region the use of their own seas. It is, therefore, no wonder that after regaining their independence in the wake of the Second World War, the Southeast Asian countries, especially Indonesia, would become exceptionally zealous in guarding, not only their land territories, but their marine territories, as well.

This concept has had a great impact on Indonesia’s stance on security issues. Knowing that Indonesia will never have sufficient man-power or military resources to be able to defend its vast land and marine territories against a determined invader, or invaders with vast resources, the Government has called upon every individual citizen - every man, woman and child - to exert his or her best efforts to protect the integrity of the components of the Fatherland.

The concept of Wawasan Nunantara was also the guiding consideration behind Indonesia’s diplomatic initiatives, that helped bring about the successful conclusion of the 1982 United Nations Convention on the Law of the Sea (UNCLOSE). The concept of Wawasan Nunantara was the guiding consideration behind Indonesia’s diplomatic initiatives, that helped bring about the successful conclusion of the 1982 United Nations Convention on the Law of the Sea (UNCLOSE). Thus, on December 13, 1957, the Government of Indonesia issued a Declaration spelling out a policy on “Wawasan Nunantara” which may be roughly translated as “the Archipelagic Sense.” It asserted the essential unity of land and water in Indonesia, and their complimentarity with the air and sky above. It affirmed that all four are vital components of the country called Indonesia, and its people are, therefore, called upon to defend, protect and foster, not only the individual components, but also the unity that sustains their existence.

The concept of Wawasan Nunantara was the guiding consideration behind Indonesia’s diplomatic initiatives, that helped bring about the successful conclusion of the 1982 United Nations Convention on the Law of the Sea (UNCLOSE). The concept of Wawasan Nunantara was the guiding consideration behind Indonesia’s diplomatic initiatives, that helped bring about the successful conclusion of the 1982 United Nations Convention on the Law of the Sea (UNCLOSE). The concept of Wawasan Nunantara was the guiding consideration behind Indonesia’s diplomatic initiatives, that helped bring about the successful conclusion of the 1982 United Nations Convention on the Law of the Sea (UNCLOSE). Thus, the UN Convention on the Law of the Sea devotes its entire Part IV to defining the archipelagic State, and its right to make use of its extraordinary marine resources, but also the safety and convenience of vessels or aircraft belonging to other states that may find it necessary to make use of its archipelagic waters. Since its conclusion in 1982, the Convention has proven itself to be an important instrument for ensuring peaceful and co-operative relations between countries with common marine borders.

In this era of high technology and global interdependence, and as we learn more about the biological processes on this planet of ours, we in Indonesia find the concept of Wawasan Nunantara growing even more relevant. The concept has ever increasing applications, as it now represents a broader unity. Not just the unity of Indonesians with their land, marine territories, air and sky, but also their unity with all the life forms that are sustained in the land, air and water environment.

We now have to be more conscious of the fact that all living things - human beings, animals, insects, plants and, even microscopic creatures, are united in a symbiotic relationship, as they are also united in a reciprocal relationship with their environment. The Government of Indonesia has not yet issued a Declaration on the new context of Wawasan Nunantara, but I believe that Indonesian people are beginning to realize that, in the long run, they cannot survive by overly exploiting their God-given environment. They must also serve as conscientious trustees of that environment and of all the other creatures therein.

The people of Indonesia must serve as conscientious trustees of the environment and of all the creatures therein, the fact that all living things - human beings, animals, insects, plants and, even microscopic creatures, are united in a symbiotic relationship, as they are also united in a reciprocal relationship with their environment. The Government of Indonesia has not yet issued a Declaration on the new context of Wawasan Nunantara, but I believe that Indonesian people are beginning to realize that, in the long run, they cannot survive by overly exploiting their God-given environment. They must also serve as conscientious trustees of that environment and of all the other creatures therein particularly the biological diversity of their land and water resources. This entails the policy and practice of sustainable development, to which the Government of Indonesia happens to be already deeply committed.
Sustainable soil, water and air quality

The ultimate challenge and opportunity in the 21st century

J. Patrick Nicholson
Chief Executive Officer
N-Viro International Corporation, USA

In the historic novel A Tale of Two Cities, the author, Charles Dickens, tells us ‘it was the best of times and it was the worst of times.’ As time runs out on the 20th Century, no words better describe the 20th Century’s historic impact on civilization.

In the 20th Century, we witnessed unparalleled advances in science and technology, in the quality of life, in education, in communication, in medicine, and indeed in the very seeds of democracy. Yet, in the 20th Century we also witnessed more bloodshed of man by man, more terror and the development of the tools of terror, more destruction of family life and human discipline, more crime, more drugs of all kinds, and finally, in the end, more greed and avarice than ever before. Most importantly, we witnessed the unparalleled destruction by man of man’s very home and environment. We witnessed man’s greed and power allowing man to pollute and harm the air we breathe and the soil and water so essential to our survival. We began in this century to recognize the impact of our actions, but these calls to action have been blunted and delayed and deliberately confused by the power of special interest to maintain the status quo which is so profitable to so few and so destructive to so many.

At the Fifth Biopolitics International Conference in Istanbul, in May 1992, Deonanan Oudit and Udo Simons proclaimed that the hope for the future is conditionally dependent on decisive political action to begin managing environmental resources to ensure both sustainable human progress and human survival. ‘We are not forecasting a future; we are serving a notice — an urgent notice based on scientific evidence — that the time has come to take the decisions needed to secure the resources we need for ourselves and our coming generations.

In today’s society can any world leader bring that to the 21st Century? Can any Chief of State the independent political leadership and courage to do what is crucially needed to sustain this planet Earth for our children, our children’s children and their children? This indeed is the ultimate challenge and opportunity in the 21st Century.

Today, we are not providing sufficient food for the world’s population and today, in providing what we do provide, we are destroying the quality of earth’s soils, waters, and air. Let’s spend a few minutes to seek the truth. Finally, let’s look at the problem.

Mankind does not need to look to the future to see the folly of its actions, or more accurately, to look at the terrible Third World devastation caused primarily by food shortages. Is society responding to this terrible human tragedy? Malnutrition is the major contributing cause in the deaths of over 14,000 children per day.

The degradation of worldwide farmland has been an escalating crisis for many years. Erosion, acidification, loss of organics and minerals, and overuse of chemicals and pesticides are causing great damage. Soil conservation efforts for the development of no-till farming are major efforts to stem the tide of farmland destruction.

Today, most Third World countries do not have the soil to sustain agriculture production so necessary for their current food requirements and economic development. With a worldwide need for organics and minerals to sustain soil fertility, the wanton disposal of such resources in incinerators and landfills or in the oceans of the world is an international disgrace.

Concurrently, overuse and mismanagement of organic wastes such as cattle, hog and chicken manures, bio-solids, and some industrial wastes have caused great environmental damage to worldwide waterways and watersheds, through non-point source discharge pollution. The terrible damage to the Chesapeake Bay and the Florida Everglades are two well publicised cases in point. Proper use and treatment of organic and mineral waste can solve the sustainable soil fertility crisis and help protect water-sheds.

Beneficial utilisation of bio-solids makes total sense. However, solving one problem by creating another does not. Organic land application programmes, whether they be bio-solids, manures, or industrial wastes, must not contribute to water pollution. Today most land application programmes contribute significantly to the problem of water pollution, particularly where seasonal restrictions are absent, where site restrictions and management practices are not adequately enforced, and where organic and mineral wastes have large concentrations. Soil and water quality demand seasonal restrictions, coupled with immobilisation technologies, to ensure slow release of organics and nutrients to provide sustainable soil conservation and fertility without destroying water quality. The management practices and technologies needed to achieve this vision are now available. We only need the willpower and the leadership to act.

In 1993, the US Department of Agriculture developed an excellent report titled Agricultural Utilisation of Municipal, Industrial and Animal Waste." In that report, the USDA stated that "annual animal manure production exceeds 2.2 billion tons." This is 40% more than the human sludge or bio-solids waste. Moreover, the report showed that BOD levels from such wastes were 10-100 times higher than from treated bio-solids. In other words, manures are 500-5000 times a bigger problem or opportunity than bio-solids. However, in all reality, manure management is non-existent because non-point source water pollution regulation is non-existent. We have spent billions on point source pollution prevention. And yet we have done practically nothing on non-point source water pollution.

What special interests are preventing sound and scientific environmental and agricultural policies and practices? Why are these issues being ignored? All we seek is the truth.

Waste utilisation problems present a challenge and an opportunity for agriculture. We are currently confronted with the long-term goal of developing crop production practices that promote sustainability. Animal wastes and many municipal and industrial wastes have substantial potential for sustainable agricultural utilisation. The development of methods to optimally integrate waste utilisation into sustainable agricultural practices could provide a major part of the solution to urban and industrial waste disposal problems.

The challenge and the opportunity have been well defined by other international authorities besides the US Department of Agriculture. For example, the National Research Council’s 1993 report on Soil and Water Quality: An Agenda for Agriculture, stated that, ‘Envision, compaction, acidification, and loss of biological activity reduce the nutrient and water cycling, slow the rate of waste or chemical degradation, and can increase the likelihood of loss of nutrients, pesticides, and salts from farming systems to both surface water and groundwater.’

Consequently, the National Research Council has pointed out that the situation for drinking water needs to be a bigger problem or opportunity than bio-solids. In all reality, manure management is non-existent. We have spent billions on point source pollution prevention whereas we have done practically nothing on non-point source water pollution.

Let’s summarise:

1. Our soils world-wide are losing their sustainability due to many factors, including an over dependence on chemical fertilisers and pesticides, soil erosion, mismanagement, and diminishing organic and mineral content.

2. A great opportunity exists through proven established technology to utilise the huge quantities of organic and mineral wastes generated annually to complement, not supplement, chemical fertilisers and pesticides, and to ensure world-wide sustained soil fertility. However, the current uncontrolled use of such waste materials creates immense water quality, sociological, and public health concerns and problems. Land application regulations of biosolids and manures must require safe and inaccessible storage, pathogen reduction until time of use, responsible odour control, and management practices that control leaching to ground water and runoff to surface waters.

3. Today’s regulations, especially management practices and site restrictions must be enforced. Today there is little, if any, enforcement. When the government sets regulations that are predicated on off-site contractor compliance, then that government must pay for the funds to enforce these regulations. Without enforcement there is no compliance. Without compliance, public health responsibility, and environmental protection are all seriously endangered with current land application practices.

4. Current disposal practices for organic waste are not sustainable.

Deonanan Oudit, Senior Economics Affairs Officer, United Nations, and Professor Udo Simons, Science Centre Berlin

Fifth Biopolitics International Conference, May 1992
Waste management in Scandinavian countries

Waste is creating major problems, especially in large cities. New ways of waste management must be implemented in order to handle the problem. Landfills take up a lot of space, pollute the air and the ground water, and waste precious energy, as recyclable material is treated as garbage. In the search for new ways of reducing the waste problem, and creating new forms of energy - bio-energy, several methods of treating waste have been developed.

Bio-energy from sewage treatment in Stange, Norway

Cambi AS is now building a plant for treatment of organic food waste in Lillehammer. This plant will produce an extract by heating the raw material. The extract will be delivered to the communal sewage treatment plant in Lillehammer, which needs a fuel source to keep the processes going. Up to now, they have been using alcohol as fuel.

The EU/EEC area produces more than 40 million tons of waste annually, and it is expected that the governments will enforce tough restrictions and taxes on waste disposals at landfills. This gives Cambi AS high expectations about the possibilities for plants such as the one in Lillehammer.

The market for organic waste treatment will increase tremendously in the coming years. This technology is also applied at Vestmarka, in Eidskog. The raw material is wood shavings and the resulting product is fuel pellets. While conventional pellets have a loose consistency, fuel pellets produced by Cambi Bioenergy AS are harder and burn longer. These pellets can then be used, instead of coal, to power central heating systems.

Source: Forskning 7/96 (Norges Forskningsrad)

The Waasa process

In Finland, mesophilic and thermophilic waste treatment methods have been in operation since 1989, when the biogas plant outside Waasa was built.

The Waasa Process combines the following elements:

- Mechanical pre-treatment. Mechanical pre-treatment, such as the shredding and separation of waste, is an essential step before the waste can be fed into the system for digestion. Pre-treatment methods depend on the type of waste used, as well as on how it was separated at source.
- Mix separator. One of the vital components in the Waasa digestion system is the Mix separator. It has several functions in the process, such as mixing the in-flow, homogenising the waste, separating and removing inert material, heating the waste, adjusting total solid content, weighing the waste, ventilating air/gas, intermediate storing. Each one of these functions is required for achieving a controlled treatment of household waste.
- The Mix separator was developed in close cooperation with the operator at the full scale plant. Frequency-controlled motors in combination with efficient screw mixers achieve the result of the separation and mixing phases.

The Waasa Process has the following advantages:

- Guaranteed hygienic retention time for all material fed to the reactor, which is divided into various, clear-cut, zones. The first zone is made up of a pre-chamber inside the reactor which has been tested in the digestion of household waste over many years. The unique advantages of the Twin Reactor are: (a) no risk for short-circuits due to the use of the pre-chamber, which gives a guaran-teed hygienic retention time for all material fed in; (b) natural and efficient flow through the machine; (c) efficient mixing achieved through compartmentalisation; (d) efficient collection and emptying of sediments; (e) the process is not affected by possible temperature fluctuations of the injected batch.
- Bacteria injection system. By injecting bacteria through a pump and a set of nozzles a small part of the active digestate is spread into the new waste to be treated. The bacteria injection is an uncomplicated, well proven system. Its advantages are: shorter retention time and avoidance of phase separation in the reactor.
- 3C system: CITCEC has been testing a computerised control system for measuring and controlling process. Effective control and monitoring of the digestion process, namely loading and temperature, is carried out by means of loading cells built into the Mix separator in combination with the monitoring of various parameters. The 3C-system uses special algorithms to optimise its operation, and unnecessary breakdowns can be avoided.
- Bio-Expert System: CITCEC’s Bio-Expert System can learn by gathering experiences from other Waasa Process plants, monitoring different operational parameters and obtaining information from the operator. The Bio-Expert System is then used by the operator, in the same way a patient consults his doctor on the diagnosis of an ailment and suggestions for treatment.

Biogas and Energy production: Biogas production can be optimised by use of a modern control and monitoring system in combination with well trained operators. Alternative biogas uses include electrical energy and heat generation, automotive fuel, and the connection to natural gas pipelines.

Production: After a retention time of 10-20 days in the digestor, the end product, called the compost, is extracted. The quality of the compost at the end of the process depends on several factors: the purity of the material fed in, the process type and also the post-treatment reducing process. Effective control and monitoring of the digestion process results in a higher compost quality.
**Evolution of a river: biodiversity, history and culture**

### The evolution of rivers

Dr. Igor N. Malakhov  
Head of Council, National Ecological Centre of Ukraine

A river is a beautiful image of everlasting and mysterious evolution. When we look at water flowing in a river we never know where it is going or what its goal is. However we know for certain that the result of evolution is irreversible. The role of a river changes during the evolution of a society. Rivers were one of the most important channels of communication at the beginning of civilization, because the process of "ethnocentrism" is particularly pronounced at the point where a river crosses the line of steppe. Presently, rivers have been transformed by the industrial and post-industrial societies to anthropogenic objects, consisting of several systems of water regulation. Sometimes a river can be nothing more than a chain of artificial lakes or a channel of pollution. So, in fact, rivers, as a rule, have irreversibly gone from being a natural channel of communication and information, to being an anthropogenic channel between forest and farming.

A river is a beautiful image of everlasting and mysterious evolution. Presently, however, rivers have irreversibly gone from being a natural channel of communication and information, to being an anthropogenic channel of trans-border pollution.

### The role of historical rivers in human civilisation

Dr. Mykola M. Sappa  
Kharkiv State University  
Environmental Sociological Group Ukraine

Historical rivers are those that have shaped human civilisation. Specific conditions made people of different ethnic groups unite and join forces to combat hunger and natural catastrophes. This taught people solidarity and helped them form complex societies. In recent years, rivers as a means of communication, have contributed to the spreading of civilisation and to the cultural exchange among peoples. On the eve of post-industrial society, the environmental movement has put forward a new system of values, based on the harmonious development of nature and society. Its goal is to preserve the biosphere for the future.

It is interesting to note that saving rivers can be viewed as a concrete embodiment of this task. This concerns large rivers such as the Danube, the Order and the Dniester, but also several small rivers, that are usually taken care of by local NGO’s. Rivers can unite people again, just as we did at this conference.

### Rivers versus towns: front or back orientation?

Dr. Wojciech Kosinski  
University of Krakow, Poland

Scholars have often stressed the fact that in the history of our continent, rivers have played a considerable cultural role, shaped human settlements, intertwined with the history of States, towns and nations, and became one of the main features determining the fitness of architectural and urban projects. For many centuries, most Polish towns developed in close harmony with rivers, which were not only essential to their social and economic progress, but also an important element of their landscape, immortalised by painters and photographers. The growing degradation of many rivers, the establishment of towns further and further away from their main channels, and the gradual loss of their previous importance for agglomerations, have been responsible for the displacement of rivers from their historical role. For example, the Danube has been transformed into a product of human intervention, by transforming the question of the city of Bucharest, into an issue related to environmental quality and nutrition, and involving our biological needs, while leisure time involves our spiritual needs and our quest for self-realisation. Quality of Life is reflected in the harmony between man and the environment. The stream of evolution will be skewed, if harmony does not exist. That is why Quality of Life is a priority for achieving harmony between man and nature.

### The importance of the Danube in Slavonic history

Dr. Valery Evorovsky  
Research Fellow  
Institute of Philosophy and Law  
Belarus Academy of Science

Rivers have been cardinal to the history of most nations and have made the evolution of civilizations possible. When man became a social creature, he started struggling with nature in an attempt to dominate it. In this way he has been creating a parallel world, where reality has turned into a product of human evolved human thinking. Different cultures regard rivers in different ways. Mongols, the children of the steppes, considered rivers a serious barrier to their expansion. For Egyptians, the Nile was a symbol of life, that guaranteed their welfare by supplying them with water. The North European and East Slavonic cultures have another image of the river. The Dnieper, Danube and Western Dvina, by virtue of their channel system, were attributed beneficial characteristics.

Rivers flowing through particular lands influence the images of local civilizations, and their material and cultural configuration. The symbolism of rivers is otherwise very flexible and lacks complicated historical dynamics. However, the Danube has played a special part in the creation of the modern picture of the European World. Settlements and ancient migrations have historically been connected to the Danube. The fight for a gateway to the Danube has always been a weighty strategic and diplomatic aim.

### Settlement evolution in the Danube basin

Professor Alexander Reteyun  
Moscow State University, Russia

A study of the long-term process of urban changes on the banks of the Danube river (with tributaries of different orders, according to the Horton-Rhainitsin system) and their environmental implications will be presented. The analysis reveals a tendency of populations to move towards major rivers and especially towards the Danube. This effect poses different stresses on the environment in upstream and downstream regions. Pictures taken by Russian satellites, since the 1970’s, show an expansion in urban development, shrinkage of river wetlands, and the deformation of the Danube delta. It is, therefore, possible to foresee possible trends in population distribution, for the coming 20-25 years, and draw some conclusions about the environmental status of the Danube basin in the future.

### Biodiversity in the Bulgarian sector of the Danube

Dr. Svetoslav Gerassimov  
Institute of Ecology of the Bulgarian Academy of Science

The Bulgarian sector of the Danube covers a 460 km course, between the river’s 885th and 375th km of flow. The total area of Bulgarian wetlands has been reduced by a factor of 20 during the last few decades, as a result of an increase in arable lands and other anthropogenic activities, including industrial and household waste pollution. This reduction has led to a considerable decrease in flora and fauna biodiversity, especially in the regions of S vitin, Belene, Tzibar, Archar, and Vantia.

This study focuses on the problems of biodiversity in the wetlands near the Danube, as well as its estuaries, and proposes measures for its protection. The status of the Zherzha Biosphere Reserve, as a typical example of the wetlands in the vicinity of the Danube, is also addressed. A brief review of the changes in the biodiversity of amphibians, birds and mammals is made with an accent on rare, endangered and protected species. The different categories of protected areas are also reviewed. The possibilities for improving the management for nature conservation through effective use of national legislation, international co-operation and constant monitoring of the region are discussed as well. A common economic policy on the Bulgarian sector of the Danube and adjacent territories is suggested.
Environmental education on the way to new thinking

Olga Mushikina
Director, Business Technical Assistance Centre
Head of Foreign Language Department
Ncovornysy, Russia

The extensive development of industry, agriculture, construction and tourism, in all the countries of the Black Sea coast, over the last decades, to the appearance of complex environmental problems. These include among others, the problem of marine eutrophication, associated with the sharp increase of biogenic substances (phosphorus, nitrogen, etc.) in river sewage collection. The drainage basin of the Danube, Danipper and Drin, during which carries each year an average of 280 cubic meters of fresh water, where the concentration of phosphorus has risen from 10 to 200 mg/k, and that of nitrates from 20 to 180 mg/k. This led to a mass increase in seaweed, to the decrease of oxygen production, and to the destruction of benthic organisms.

Red tides became chronic in the coastal waters of Bulgaria and Romania. Eutrophication is especially severe in the shallow, north-western part of the Black Sea. The Black Sea was polluted, with dangerous amounts of hydrogen sulphide, following the Chernobyl disaster: Ncovornysy is the biggest Russian port on the Black Sea and has to overcome the same problems as the other countries of the Black Sea region. The environmental crisis, compromising the whole globe at the end of the 20th century, is the result of our “cowboy” attitude towards nature. In order to overcome this attitude, we need to muster the help of all accessible methods, including social environmental education. This will help install the necessary new thinking, without which it is impossible to solve environmental problems, and secure the stable coexistence of man and nature. In this process, the role of educators and educational institutions is of major importance.

The symbolism of water: philosophical anthropology and aesthetics

Maria Golczewska
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Water, the source of, and a necessary condition for, all forms of life, may be considered from several points of view. As a simple chemical formula (H2O), as a smaller or greater entity, accessible to our perception, and as an aesthetic experience. This experience is multifaceted, as it can be shared by all the senses (sight, hearing, touch, kinesthetic etc.). A particularly fascinating aspect in the appearance of water is its continuous movement and change. To the vital role of water, one can add utilization, moral values (duty to protect the purity of water reserves) and aesthetic values, which are close to the moral ones: it is important to preserve the beauty of water resources in their different states. A large number of problems concerning the Danube river appear here, because it is an international river, flowing through 10 countries. Does it link various countries and nationalities, or divide them (social aspect of water)? How deep is the international engagement in an endeavour to clean up the Danube (ecological and moral aspect)? What is the Danube like in the eyes of artists? What is the importance of the Danube for the countries through which it is flowing? What values, connected with this fact, are most appreciated in each of these countries?

Historians can point to several disasters that rivers have caused over time. For water, being friendly to man, can also be the cause of calamities and disasters like floods, inundations, mudslides etc. Does this also concern the Danube? The Danube may be treated as symbol for bringing nations together, and for promoting industrial development, environmental health and the beauty of nature. The river is the frontier that divides and unites at the same time.
BIO NEWS Who's Who in the B.I.O. April, 1997

INTERNATIONAL

[Content of the page discussing various individuals and their affiliations in different countries.]

[The page contains detailed biographical information about various scientists, academics, and professionals from around the world, including their names, affiliations, and contributions to various fields such as chemistry, biology, and environmental science.]
B.I.O. Publications on the Internet

Proceedings

BIOPOLITICS - THE BIO-ENVIRONMENT - VOLUME I

BIOPOLITICS - THE BIO-ENVIRONMENT - VOLUME II

BIOPOLITICS - THE BIO-ENVIRONMENT - VOLUME III

Business

BUSINESS STRATEGY FOR THE BIO-ENVIRONMENT - VOLUME I (Greek)

BUSINESS STRATEGY FOR THE BIO-ENVIRONMENT - VOLUME II (Greek)

BUSINESS STRATEGY FOR THE BIO-ENVIRONMENT - VOLUME III (Greek)

Diplomacy

BIOS IN THE NEXT MILLENNIUM

BIOE IN THE NEXT MILLENNIUM
Lecture by the Right Honourable Lord Ennals, Hellenic-British Symposium, 1988

BIOPOLITICS - PROTECTING THE BIO-ENVIRONMENT
Lecture by Israeli Ambassador C. Bonnis, Third B.I.O. International Conference, 1989

BIOPOLITICS - THE BIO-ENVIRONMENT
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