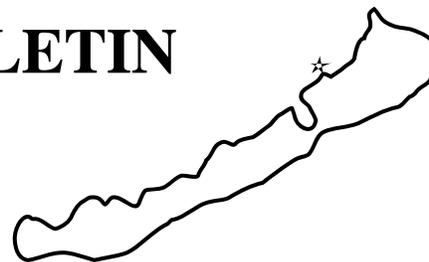


THE BALATON BULLETIN



Newsletter of The Balaton Group

APRIL 2002

TABLE OF CONTENTS

From the Editors	2
Balaton Group Steering Committee Notes by Gillian Martin Mehers	3
Balaton Group Annual Meeting 2002: The Oil Peak and the Precautionary Principle—Caution or Conflict?	4
Ongoing Balaton Group Future Discussions by Wim Hafkamp	6
EEA Draws Key Lessons From History on Using Precaution in Policy-Making	8
Follow-up to International Summit on Science and the Precautionary Principle	10
Twenty-One Vermont Towns Endorse Earth Charter by Gwen Hallsmith	12
World Summit on Sustainable Development — Global Action for Women by Marie Haisová.....	13
A New Political Party Shakes Costa Rican Politics by Carlos A. Quesada	14
And The Winner Is: Diversity by Alan AtKisson	16
Niels Meyer's Acceptance Speech at Leonardo da Vinci Medal Ceremony	17
System Thinking News by Jejel Ezzine	18
Announcements	19
News From The Members	20

FROM THE EDITORS

This issue of the Balaton Bulletin features a report from the recent Balaton Group Steering Committee meeting, hosted by Joan Davis from 25-28 January in Zurich. Eleven Steering Committee and Balaton Group Members were present and together during the weekend crafted the programme and topic for the next annual meeting of the Balaton Group. We would like to call your attention to the fact that the BG meeting will be held from 7-10 September this year, later than usual, due to the World Summit on Sustainable Development in Johannesburg. This later date should provide us the opportunity to hear first-hand about the Summit from those who attended.

The working title for the next BG annual meeting is *The Oil Peak and the Precautionary Principle—Caution or Conflict?* and will feature interrelated discussions on three topics: the global oil peak, resource conflict and the precautionary principle. An agenda for the meeting is included in the Bulletin, as well as two recent articles on the precautionary principle. The next issue of the Balaton Bulletin will feature more current information on these three pillars and we invite anyone who is working in these areas to submit relevant articles, which will serve to prepare us for upcoming discussions on these topics at the next meeting.

The Steering Committee gathering also featured a strategic thinking discussion about the future of the Balaton Group over the next five years. This discussion was based on the results of a brainstorming session held by BG members last September in Csopak. The results of the brainstorming session have been documented by Wim Hafkamp and included in this Bulletin. This is an ongoing discussion within the BG and the account included is aimed at generating additional input from members, whether present or not at the last meeting. This material in its current format might help us formulate a vision and a motto, but setting a longer-term strategic agenda will be more challenging. We welcome your reactions to the ideas included in the Bulletin.

The upcoming World Summit on Sustainable Development (WSSD), to be held from 26 August—4 September 2002, provides an opportunity to focus global debate on a web of interrelated issues about the sustainability of our planet. Last week, while attending the Third Preparatory Committee for the WSSD in New York City, I visited “Ground Zero” at the World Trade Center site and attended the United Nations meeting on

the same day. The experience was unsettling. At the UN meetings, a high-level Working Group was discussing the newly introduced phrase “Sustainable Development Governance”, which is due to replace the older “International Environmental Governance” concept. What started as a semantics discussion typical of the UN gradually gave way to critical issues of assessment and early warning; cultural and biological diversity; sustainable development ethics; health, environment and poverty; and governance in general.

The crowd was definitely larger at the Ground Zero site than in the UN auditorium, and there was a great deal of talk amongst visitors about the motivation behind the attacks. I couldn't help wondering if some of the “answers” weren't possibly being discussed just 40 blocks away at the UN building, and whether or not any of the people on the streets were even aware of it? I guess the UN has very thick walls (as do many other organizations working on sustainable development). We all need to see what we can do about that.

This Bulletin features several articles and points of information related to the World Summit, and we hope to have more of these in the upcoming issue as the event draws near. Many BG members will no doubt attend the Summit, either as representatives on their national delegations or as participants of the Global Public Forum for NGOs (or Major Groups, as they are called by the WSSD Secretariat). Or they will be active in the many preparatory activities leading up to Johannesburg. We would be interested to hear from those who are working on inputs to the Summit to feature in the upcoming Bulletin.

The next issue of the Balaton Bulletin will be published in August 2002 and the deadline for contributions is 30 June. Please send your contributions to Gillian Martin Mehers (Gillian@lead.org) and to Nanda Gilden (n.gilden@planet.nl). We would like to thank again Niels Meyer for his contribution to editorial duties for the Bulletin; his two-year term as co-editor of the Bulletin has just ended, but we are still delighted to have his wise thoughts on our work.

With warm greetings from

Gillian Martin Mehers
Gillian@lead.org

with Nanda Gilden
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BALATON GROUP STEERING COMMITTEE MEETING NOTES

26-28 JANUARY 2002

Gillian Martin Mehers

The meeting was attended by 11 Steering Committee and Balaton Group Members including: Dennis Meadows, Niels Meyer, Nanda Gilden, Gillian Martin Mehers, Jeel Ezzine, Joan Davis, Aromar Revi, Hermann Knoflacher; Zoltan Lontay; Bert deVries, and Wim Hafkamp. The meeting was hosted by Joan Davis at her home in Walliselen, Switzerland.

Some of the issues covered during the meeting included:

- Current Status of the Balaton Group
- Fundraising
- Relations with other Organizations
- Our own agendas

Below is a brief description of the discussions and decisions taken for each of the above points.

In addition to the above items, the group spent a great deal of time considering key aspects of the next Balaton Group Meeting; the outcome of this discussion is detailed in a separate article in the Bulletin. A Strategic Planning discussion was also an important agenda item; this is the focus of an article by Wim Hafkamp.

Current Status of the Balaton Group (BG)

The BG currently has in its bank account US\$37,000 in its bank account, from contributions by individuals and organizations. It has 143 people on the BG list-serve. The Balaton Bulletin has successfully moved in to another mode of preparation (by volunteer editors). The group has raised US\$50,000 for support of a Young Fellows Program (Dana Meadows Fellows Program) from the Rockefeller Brothers Fund. The BG has become a private foundation, so there are not many restrictions on income, but it is harder for regular foundations to give money. As a result, we have applied for public foundation status in the USA in order to facilitate fundraising. The option of developing membership income was discussed around three options: 1) solicitation of members for donations; 2) charging a modest fee for the Bulletin; and 3) charging an annual fee for membership to the BG. No agreement was reached here. We have been offering participants in the annual meeting the opportunity to pay for their own room and board in Csopak. Many have accepted this offer, and that income has been very important to us in supporting the expenses of participants from low income nations.

On the Fellows Program, three different Programs were discussed. It appears that there are three that revolve around Dana Meadows in some way. It was feared that due to the similarities in name that these would become confused. The three are: 1) UNH-managed Fellowship Program for a young female journalism student (US\$5,000/year); 2) BG-managed Young Fellows Program or the Donella Meadows Fellows Program (US\$50,000 already granted); 3) Sustainability Institute-managed Donella Meadows Fellowship (US\$25,000 granted for a feasibility study). Upon discussion, it was suggested and agreed that the second one be re-titled the Balaton Group Dana Meadows Fellows Program.

Further on the status of the BG, Dennis stated that he would be putting more time in to the group in the next five years, then he would pass over his role to others.

Joan informed the group that the ETH has started a Dana Meadows lecture series on sustainability that would feature outside guests including BG members.

Fundraising

The group brainstormed a few places/names for future fundraising. It was also suggested that donors be invited to the meeting particularly if they might be interested in the projects on which the group would work.

Relations With Other Organizations

The group discussed BG relations with other organizations and considered whether there should be a strategy for this or if it should be done on an ad-hoc basis. What can we offer partner organizations? They could participate in the annual meeting (at their own expense) and they could have access to the group and potential for collaboration. The question was raised whether partners should float through or long-term partnerships should be sought. The group agreed that all of us should be alert to potential organizations with which we could collaborate.

Our Own Agendas

This final point of the Steering Committee meeting focused on each member's own agenda – what kind of things could the group do to help individual members achieve their current goals? This discussion took the group into the final meal and closure of the meeting.

BALATON GROUP ANNUAL MEETING 2002

Introduction

The Balaton Group will experiment with a new structure for this year's annual meeting in Csopak, Hungary. The regular meeting is preceded by a one-day optional meeting on the culture of the Balaton Group.

The first two official days of the meeting will focus on the selected topics, using the traditional approach of formal sessions in the morning and informal group discussions in the afternoon. The contents of the afternoon sessions are not determined ahead of time. Rather, the time is used either to delve deeper into the implications of the morning talks, or to present current projects and

pursue other subjects that arise during the course of the meeting. The afternoon discussion groups are organized and publicized by those who wish to participate.

The third day of the meeting will focus on planning new projects that will allow Balaton Group members to work collaboratively beyond the annual meeting. The final day will concentrate on building capacity and developing skills of the meeting participants.

Evening events will including games, videos, music, and presentations of work new to the Balaton Group.

THE OIL PEAK AND THE PRECAUTIONARY PRINCIPLE CAUTION OR CONFLICT?

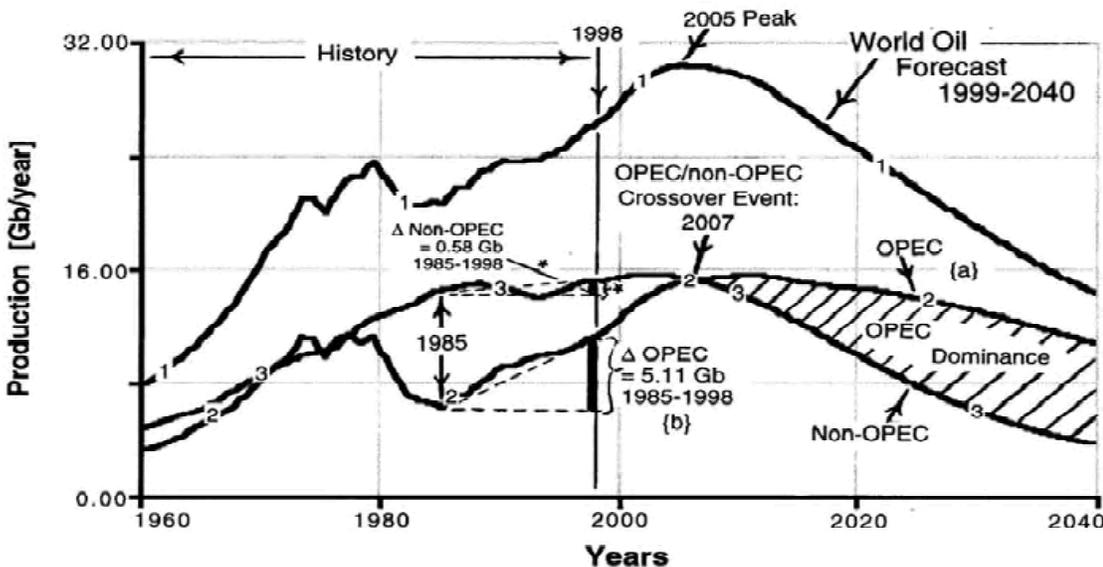
Session Theme

Today petroleum is the dominant energy source, providing about 35% of the globe's total energy. Coal and natural gas each supply about 25%; nuclear and renewables account for the rest. And official projections, for example by the US Department of Energy have petroleum use growing by about 40% over the next 15 years.

Optimism about oil supply is the norm. For example none of the IPCC scenarios assume that oil supply will be a limiting constraint before 2100. Yet there is a small number of extremely well informed analysts, some of them former oil company geologists, who feel that the global peak in oil production could come within this decade. A *Scientific American* article, "The End of Cheap Oil," by Colin J. Campbell, Jean Laherrere, argued this view. So does a recent book by Keneth Deffeyes, *Hubbert's Peak*, Princeton University Press.

There is still oil in the ground. Cumulative use so far has been about 800 billion barrels (Gb). Optimists feel that 2200 billion barrels may remain, enough to support current policies for decades. Pessimists believe that the remaining oil may be only about 1000 Gb. Since oil production seems to follow a bell shaped curve with the peak around 50% remaining, (this is the so-called Hubbert's curve) the lower estimate would imply a production curve that peaks soon, like that shown above.

We don't know what the true values are, but we do know that OPEC nations, oil companies, and the US government all have strong economic and political reasons to be overly optimistic. We know also that the decline will eventually come, and it will force many changes on society. It is much more likely to involve conflict, if there are no preparations. Indeed, some of the armed conflict around the globe can already be attributed to regional oil scarcity.



This session will offer a generic systems model of resource depletion and conflict, an expert on the prospects for future oil output, and analysis of the links between oil shortages and conflict over other resources.

Session Schedule

Pre-meeting (6 September):

Introduction to the Culture of the Balaton Group.

This optional meeting will be offered to first time members and interested speakers. It will be run by **Dennis Meadows, Nanda Gilden, and Gillian Martin Mehers**, and will cover the following topics:

- History
- Themes and projects
- Vocabulary
- Systems thinking and games
- Teambuilding and sharing among new members

Day 1(7 September):

Resources and Conflict Around the Oil Peak

- Generic overview of conflict – water wars, migration, vocabulary
- Why and when will oil peak and will anyone notice? What kinds of conflicts will give this give rise to?
- If oil peaks, what are the implications on other resources, such as timber and water?

Day 2 (8 September): *The Precautionary Principle*

- Overview concerning the criteria and uses of the precautionary principle. What is the precautionary principle? How do organizations deal with it (WTO and EU) and what are the legal and institutional aspects?
- Examples from the European Environmental Agency report
- How to make the principle operational? E.g. in the energy field

Day 3 (9 September): *Project Day*

Participants will divide themselves into small groups, each focusing on a different project. A project plan and proposal idea will be the result. This is intended to be a very practical session with the goal to define and organize a project that will attract funding and sustain the involvement of Balaton Group members after the meeting.

We will be interested in any project generally related to the interests of the Balaton Group and capable of securing funds and generating useful results. Several illustrative suggestions were given including:

- Designing a global competition on oil peak modelling
- Designing a conflict resolution training module
- Creating a standard, grade-school systems thinking curriculum for kids
- Making the precautionary principle operational

Day 4 (10 September): *Skill Building Workshops*

The day will be devoted to workshops on topics that enhance the professional competence of the participants. Parallel sessions in the morning and again in the afternoon will provide time for many workshop offerings. Some possible workshops included:

- Consensus-building techniques
- Writing successful proposals
- Running and debriefing the pyramid game
- Administering a sustainability inventory
- How to use games in training
- Exploring the intergovernmental system
- How to make CD-ROMs
- Report on the World Summit

ONGOING BALATON GROUP FUTURE DISCUSSIONS

Wim Hafkamp

During the 2001 meeting of the Balaton Group (BG) several discussions took place on the future of the BG in plenary sessions, in working groups and elsewhere, anytime of day, right until the last session with its characteristic summary by Aro Revi. Here is an account of all of this in Bulletin format, meant for those who did not participate yet do have opinions. All members are invited to join in this discussion, in writing, by e-mail or otherwise.

Bifurcation

Point of departure in the BG strategy discussion was that the group seemed to have come to a bifurcation point: "go out" or "keep a low profile". This question was debated and eventually answered under Yogi Berra's motto:

*When you come to a fork in the road,
TAKE IT!*

BG Identity

We are an organized network of over a 1000 people, consisting of resource holders, researchers, interpreters, facilitators, catalyzers and transformers; committed people, focused on sustainability with a systems orientation; creating space for the vision to happen, intellectual, emotional, physical and cyberspace.

As a group we are a greenhouse, an incubator and a cross-pollinator think-tank on present and future issues of Earth and its generations. We bring together North and South, generations, and different perspectives, looking for common ground; seeking better representation of voices.

Lengthy discussions on output of the BG, in terms of products, ideas, books, games, songs, meetings, transformation in diversity, ended up in a slogan, a variation on "the medium is the message":

We are the product

Values and Criteria

Key values to be preserved are: scientific, technical, emotional, spiritual, artistic, both individually and collectively. As a group we maintain an open culture. Individually, we keep the culture of not putting BG in CV's, and the group keeps a low profile, because that makes us powerful in our various catalytic roles:

*To be change agents in effective
"conspiracies" for moving sustainabil-*

ity into the main stream, placing and supporting people in positions affecting resource and information flows.

Internal Goals and Actions

There was a lively and productive discussion on goals to set and actions to take internally within the BG, both as a group and between various coalitions of members and their (not-always-so) organizations:

- Strengthen the capacity of BG members and parent organizations to face selected issues, and act upon them, to teach ourselves how to act when we go home, be the diffusion in our own networks;
- Facilitate leadership among promising young people;
- Develop and share information, tools, wisdom among members;
- Collaborate between our respective organizations and institutes;
- Facilitate projects and exchanges; and
- Become more representative for the world, linking NS-EW, and young-old.

We will form a community of practicing planetary ecologists, building visions of sustainability on whole earth systems analysis.

External Goals, Communication and Output

The same discussion was rich in producing goals and actions externally.

- Catalyze processes of self-organization for intellectuals on sustainability issues, globally and locally.
- Voice our informed opinions as a group, advocate positions, and use Balaton influence to that end; be more radical and brave, go more public.
- Have regional meetings, on crucial issues, where jointly we can make a difference, affecting the policy process, pressuring the politicians.

- Work on unified output in terms of web site, journal, reports to the Balaton Group, courses and seminars.
- Some suggested that we reconceptualize sustainable development and develop new strategies.
- Others said "Let us work on Lake Balaton, our name giver is in bad shape".

Instruments and Tools

We work with tremendous diversity in this common culture, towards these shared goals. We use and develop an increasing range of tools, deriving benefit from many disciplines, adapted to a range of geographic locations and societal settings and to conflicting worldviews and cultures.

What is newest to us, is that we need develop an interface across generations (Dennis is working on fellowships), with an adequate gender balance, e.g. 10 new people per year.

The discussion never became too specific as to which tools, models, web content, or other to use, as long as it applies a systems approach to sustainability. Some suggested that we go beyond sustainability indicators, and monitor our own success or impact.

Afterthoughts

At the end of the business meeting on the last day, all were invited to put on paper whatever additional thoughts they had. The results are very much in the above spirit.

Restoration: We have moved from identification of problems and the Stockholm Conference to an understanding of systems and systems dynamics to "sustainability" or "sustainable development" at the Earth Summit in Rio. For the future we need to restore the capacity of natural and human systems. The focus needs to shift to restoration of renewable systems, including communities as well as ecosystems. Examples include watersheds, soils, biodiversity and civility. *Bob Wilkinson*

Politics of Generosity: In past years the market approach to planning has been underpinned by a politics of self-interest. The politics of generosity is needed to enable the deliberate change to replenish the Commons. Subsidiarity as a methodology, systems based, will allow clarity of relationships between local, national, global, etc. *Katherine Peet*

Coping with the Accelerated Rate of Change: "Only one Earth" was the theme of the 1972 Stockholm Conference. It was preceded by the 1968 World Conference on the "Management and Conservation of the Biosphere" led by UNESCO. Then we had Rio '92, or UNCED, on "Environment and (sustainable) Development". Biodiversity was "invented" in the 1980's; sustainable development was the term of the 1990's. Now we have globalization.

Things are changing more rapidly than ever before and we need new approaches to find workable strategies to cope with these accelerated phenomena. *Gerardo Budowski.*

Steering Group

The steering group discussed the above results in its recent meeting. Following are some of the ideas that were suggested.

- Write more columns, and affect public opinion, transform mindsets.
- Help create more centers, like Chirapol's, the Sustainability Institute, etc.
- Promote networking between those centers, including outside networks, e.g. LEAD.
- Start BG projects, temporary coalitions of both BG members and non-members.
- Provide more learning and sharing opportunities before and after the BG annual meeting, using available BG members to exchange with new members.
- Develop more web content, new portal, e-learning courses, discussion platforms, etc.
- Do more "Noyes Foundation-like exchanges" and small yet meaningful policy work.
- Create a research and writing agenda, a "Whole Earth Systems" agenda.

Editors' Note: As Wim mentions in the introduction, we would be very happy to have reactions and additional thoughts to the above synthesis. This is an ongoing discussion within the BG and needs also to have champions who are interested and willing to work through some of the options. Your input would be greatly appreciated!

EEA DRAWS KEY LESSONS FROM HISTORY ON USING PRECAUTION IN POLICY-MAKING

This information was taken from an EEA NEWS RELEASE issued in Copenhagen, 10 January 2002.

Twelve key lessons for decision-making have emerged from a ground-breaking analysis by the European Environment Agency (EEA) of cases—from the damaging of the ozone layer by CFC chemicals to the “mad cow” disease epidemic—where public policy was formulated against a background of scientific uncertainty or surprise developments, or where clear evidence of hazards to people and the environment was ignored.

A new EEA report published today (10 January 2002), *Late lessons from early warnings: the precautionary principle 1896-2000*, examines how the concept of precaution has been applied—or not—by policy-makers over the past century when addressing a broad range of hazards linked to public health and the environment in Europe and North America.

The report should help to improve mutual understanding between Europe and the United States on the use of the precautionary principle in policy-making. The debate has been marked by disputes over the safety of synthetic hormones in beef and of genetically modified plants and foods.

“Our central conclusion is that the very difficult task of maximising innovation whilst minimising hazards to people and their environments could be undertaken more successfully in future if the twelve “late lessons” drawn from the histories of the hazards studied in this report were heeded,” said Domingo Jiménez-Beltrán, EEA Executive Director.

The report's 14 case studies, contributed by experts in their respective fields, provide many examples where inaction by regulators had costly and unforeseen consequences for human health and the environment or where early warnings, and even “loud and late” warnings, of problems were clearly ignored.

The consequences range from the deaths of hundreds of thousands of people from the asbestos cancer mesothelioma, to the over-exploitation and subsequent collapse of fisheries in Canada, California and Scotland, with devastating impacts on local communities.

The 12 “late lessons” drawn from the case studies include the following:

- Be realistic about how materials will be used and disposed of in everyday life.
- Don't allow regulatory authorities to be “captured” by vested interests.

- Avoid allowing one or two materials to monopolise the market—as was the case with asbestos, CFCs and the group of versatile but harmful industrial chemicals known as PCBs—by developing diverse ways of meeting human needs.
- When evaluating risks, ensure that not only all relevant specialist expertise is used but also “lay” and local knowledge.
- Follow up early warnings of problems with long-term environmental and health monitoring.

Poul Harremoës, Professor of Environmental Science and Engineering at the Technical University of Denmark and chair of the report's editorial team, said: “the use of the precautionary principle can bring benefits beyond the reduction of health and environmental impacts, stimulating both more innovation, via technological diversity and flexibility, and better science.”

“The case studies show how harmful and costly misuse or neglect of the precautionary principle can be,” he continued. “But over-precaution can also be expensive, in terms of lost opportunities for innovation and lost lines of scientific enquiry.”

“If more account is taken—scientifically, politically and economically—of a richer body of information from more diverse sources, then society may be considerably more successful at achieving a better balance between innovations and their hazards in the future. The twelve “late lessons” distilled from the case studies could help to achieve this better balance.”

Professor Harremoës added: “None of the lessons would themselves remove the dilemmas of decision-making under situations of uncertainty and high stakes. They cannot eradicate uncertainties or avoid the consequences of ignorance. But they would at least increase the chances of anticipating costly impacts, of achieving a better balance between the pros and cons of technological innovations and of minimising the costs of unpleasant surprises.”

The case studies cover the BSE or “mad cow” crisis; the use of synthetic hormones and antimicrobial agents to promote growth in farm animals; the use of the cancer-causing synthetic hormone DES to prevent miscarriages in women; over-exploitation of fisheries in the northern hemisphere; the use of medical radia-

tion, asbestos, CFCs, and the chemicals benzene, MTBE (a substitute for lead in petrol), tributyl tin (an antifoulant for boats and ships) and PCBs; chemical contamination of North America's Great Lakes; and air pollution from sulphur dioxide.

The report is an example of the kind of information that is needed to help the European Union and EEA member countries frame and identify sound and effective policies that protect the environment and contribute to sustainable development. It also seeks to help clarify the definitions of key terms, disagreement over which has added to the intrinsic difficulties of applying the precautionary principle in practice.

Mr. Jiménez-Beltrán said: "The precautionary principle is not just an issue for the European Union: its potential impact on trade means that its application can have global repercussions. The current dialogue between the EU and the United States on the use and application of precaution is partly affected by confusion about the meaning of terms used in the debate.

"This report should contribute to a greater and shared understanding about past decisions on hazardous technologies and therefore, we hope, to improved transatlantic agreement about future decisions. It may also help the dialogue *within* both the EU and the United States, where there are healthy debates about the pros and cons of applying the precautionary principle."

Notes

The precautionary principle governs the use of foresight in decision-making in situations characterised by uncertainty and ignorance and where both regulatory action and inaction carry potentially large costs.

The principle is enshrined in the European Union treaty. The most significant support for the principle in Europe has come from the European Commission's Communication on the Precautionary Principle, the European Parliament's resolution on the Communication and the Council of Ministers' Nice resolution on the precautionary principle, all issued in 2000.

Late lessons from early warnings: the precautionary principle 1896-2000 is published by the EEA as Environmental Issue report no. 22. It will also be published in spring 2002 by Earthscan Publications Ltd. For more information, see <http://www.earthscan.co.uk/home.htm>.

The report and its individual chapters can be downloaded from the EEA web site at:

[http://reports.eea.eu.int/
environmental_issue_report_2001_22/en](http://reports.eea.eu.int/environmental_issue_report_2001_22/en).

Printed copies are also available on request.

The 12 "late lessons" are:

- Acknowledge and respond to ignorance, as well as uncertainty and risk, in technology appraisal and public policy-making.
- Provide adequate long-term environmental and health monitoring and research into early warnings.
- Identify and work to reduce blind spots and gaps in scientific knowledge.
- Identify and reduce interdisciplinary obstacles to learning.
- Ensure that real world conditions are adequately accounted for in regulatory appraisal.
- Systematically scrutinise the claimed justifications and benefits alongside the potential risks.
- Evaluate a range of alternative options for meeting needs alongside the option under appraisal, and promote more robust, diverse and adaptable technologies so as to minimise the costs of surprises and maximise the benefits of innovation.
- Ensure use of "lay" and local knowledge, as well as relevant specialist expertise in the appraisal.
- Take full account of the assumptions and values of different social groups.
- Maintain regulatory independence from interested parties while retaining an inclusive approach to information and opinion gathering.
- Identify and reduce institutional obstacles to learning and action.
- Avoid "paralysis by analysis" by acting to reduce potential harm when there are reasonable grounds for concern.

FOLLOW-UP TO INTERNATIONAL SUMMIT ON SCIENCE AND THE PRECAUTIONARY PRINCIPLE

Editors' Note: This information came from an email sent by the Lowell Center for Sustainable Production, University of Massachusetts Lowell on 14 March 2002. .

Almost half a year has passed since the Lowell Center hosted the International Summit on Science and the Precautionary Principle. Despite the tragic events of September 11th, more than 85 scientists, legal and policy scholars from 17 countries attended the three-day event. The discussions at the Summit were intense and participants concluded that there is a need to develop scientific methods and policies that would better support precautionary decisions in the face of uncertainty and complexity. One of the most important conclusions of the Summit was the creation of a new scientific community linking scientists studying risks with those scientists studying changes to production systems and products to prevent risks in the first place.

We have updated the Summit website at <http://www.uml.edu/centers/lcsp/precaution/> to include some papers and presentations, as well as a Summit summary. We are attaching a final statement from the Summit (also available on the website). The statement sets forth a vision and challenge for environmental science and policy and argues that precaution is entirely consistent with good science. We hope to collect a broad range of signatures on the statement so that it can be widely distributed to scientists and decision-makers. If you wish to sign on, please email Joel Tickner at joel_tickner@uml.edu and feel free to distribute the statement to others.

During the coming months our follow-up activities include editing a book of papers generated for the Summit; it will be published in September by Island Press. The

working title is *Precaution, Environmental Science and Preventive Public Policy*. We are also preparing an issue of the journal *Public Health Reports* on the implementation of the precautionary principle in public health policy. This issue will come out in September or October.

There is a strong interest in developing case studies of how elements of the Summit statement could be implemented in environmental science and policy. We will be working to develop these case studies during the coming year, as well as holding discussions among scientists as part of professional society congresses. We will also be talking with colleagues in various parts of the world about hosting similar regional discussions.

We have also been working with the European Environment Agency, a government information program, to hold discussions of its new report, *Late Lessons from Early Warnings*. The report documents 14 case studies where precaution was not taken and the lessons learned for improving environmental and health decision-making. The report is available on-line at www.eea.eu.int. We will be co-sponsoring a forum on the report and efforts in Massachusetts to implement its findings on April 9th in Boston. For more information, please contact us.

Please let us know if you have any suggestions of research directions, upcoming meetings, and outreach opportunities that you believe would help advance the discussions we have initiated. Also, if you would like to be part of a listserv we have established to continue discussions, please let us know.

Lowell Statement on Science and the Precautionary Principle, December 17, 2001

*Statement from the International Summit on Science and the Precautionary Principle
Hosted by the Lowell Center for Sustainable Production, University of Massachusetts Lowell, 20-22 September 2002*

Growing awareness of the potentially vast scale of human impacts on planetary health has led to a recognition of the need to change the ways in which environmental protection decisions are made, and the ways that scientific knowledge informs those decisions. As scientists and other professionals committed to improving global health, we therefore call for the recognition of the precautionary principle as a key component of environmental and health policy decision-making, particularly when complex and uncertain threats must be addressed.

We reaffirm the 1998 Wingspread Statement on the Precautionary Principle and believe that effective implementation of this principle requires the following elements:

- Upholding the basic right of each individual (and future generations) to a healthy, life-sustaining environment as called for in the United Nations Declaration on Human Rights;

- Action on early warnings, when there is credible evidence that harm is occurring or likely to occur, even if the exact nature and magnitude of the harm are not fully understood;
- Identification, evaluation and implementation of the safest feasible approaches to meeting social needs;
- Placing responsibility on originators of potentially dangerous activities to thoroughly study and minimize risks, and to evaluate and choose the safest alternatives to meet a particular need, with independent review; and
- Application of transparent and inclusive decision-making processes that increase the participation of all stakeholders and communities, particularly those potentially affected by a policy choice.

We believe that effective application of the precautionary principle requires interdisciplinary scientific research, as well as explicitness about the uncertainties involved in this research and its findings. Precautionary decision-making is consistent with “sound science” because of the large areas of uncertainty and even ignorance that persist in our understanding of complex biological systems, in the interconnectedness of organisms, and in the potential for interactive and cumulative impacts of multiple hazards. Because of these uncertainties, science will sometimes be incapable of providing clear and certain answers to important questions about potential environmental hazards. In these instances, policy decisions must be made on the basis of sound judgement, open discussion, and other public values, in addition to whatever scientific information is available. We believe that waiting for incontrovertible scientific evidence of harm before preventive action is taken can increase the risk of costly mistakes that can cause serious and irreversible harm not only to ecosystem and human health and well-being, but also to the economy.

Some of the ways that scientific information is currently applied in formulating policy can work against the ability to take precautionary action, for example by misrepresenting limitations in the state of scientific knowledge. Decision-makers frequently look for high levels of proof of causal links between a technology and a risk before acting, so that their decisions will be protected from accusations of being arbitrary. But often, high levels of proof cannot be achieved, and are not likely to be forthcoming in the foreseeable future. A more complete and open presentation from scientists on the current limitations in understanding of environmental risks will encourage the acceptance on the part

of government decision-makers and the public of the idea that precautionary action is a prudent and effective strategy when potential risks are large and uncertainties are large as well.

It is not only the communication between scientists and policy makers, however, which needs improvement. We believe that there are ways in which the current methods of scientific inquiry may also retard precautionary action. For example, research frequently focuses on narrow, quantifiable aspects of problems, thus inadvertently excluding from consideration potential interactions among different components of the complex biologic systems of which humans are a part. The compartmentalization of scientific knowledge further impedes the ability of science to detect and investigate early warnings and develop options for preventing harm when far-reaching health and environmental risks are involved. Unfortunately, limitations in scientific tools and in the ability to quantify causal relationships are often misinterpreted by government decision-makers, scientists, and proponents of hazardous activities as evidence of safety. However, not knowing whether an action is harmful is not the same thing as knowing that it is safe.

We contend that effective implementation of the precautionary principle demands improved scientific methods, and a new interface between science and policy that stresses the continuous updating of knowledge as well as improved communication of risk, certainty, and uncertainty. With these objectives in mind, we call for a re-evaluation of scientific research agendas, funding priorities, science education, and science policy. The ultimate goals of this effort would include:

- A more effective linkage between research on hazards and expanded research on primary prevention, safer technological options, and restoration;
- Increased use of interdisciplinary approaches to science and policy, including better integration of qualitative and quantitative data;
- Innovative research methods for analyzing the cumulative and interactive effects of various hazards to which ecosystems and people are exposed; for examining impacts on populations and systems; and for analyzing the impacts of hazards on vulnerable sub-populations and disproportionately affected communities.
- Systems for continuous monitoring and surveillance to avoid unintended consequences of actions, and to identify early warnings of risks; and

- More comprehensive techniques for analyzing and communicating potential hazards and uncertainties (what is known, not known, and can be known).

We understand that human activities cannot be risk-free. However, we contend that society has not realized the full potential of science and policy to prevent damage to ecosystems and health while ensuring progress towards a healthier and economically sustainable future. The goal of precaution is to prevent harm, not to prevent progress. We believe that applying precautionary policies can foster innovation in better materials, safer products, and alternative production processes.

TWENTY-ONE VERMONT TOWNS ENDORSE EARTH CHARTER

Gwen Hallsmith

Every March, voters in Vermont gather in their town halls for an annual ritual known as Town Meeting. Town Meetings are open to everyone who is registered to vote in a community; the people serve as local legislators, making decisions on the town budget for roads, schools, fire engines, trash removal, water, and social services. They also enact local laws, and, in many communities, consider issues of national and global importance. Town Meetings in Vermont made international headlines back in the 1980s when many of them voted for a unilateral freeze on the production of nuclear weapons.

To be placed on the agenda for the Town Meeting, 5% of the registered voters in town need to sign a petition. For Town Meeting 2002, 30 towns in Vermont had an article on their agendas that read: "Shall the voters of [town] endorse the Earth Charter, and recommend that the Town, the State of Vermont, the United States of America, and the United Nations use the Earth Charter to guide decision-making on issues of local, state, national, and international importance."

The Earth Charter is a comprehensive statement of principles for a just and sustainable world. Sixteen principles and sixty-two sub-principles are outlined in four main categories of the Charter: respect and care for the community of life; ecological integrity; social and economic justice; and democracy, non-violence and peace. Together they form a declaration of the necessary steps toward building a just, sustainable, and peaceful global society in the 21st century.

At Town Meetings held over the past several days, 21 Vermont Towns endorsed the Earth Charter, despite some fairly strong opposition from sportsmen who took exception to the principles describing hunting practices,

We urge governments to adopt the precautionary principle in environmental and health decision-making under uncertainty when there are potential risks, as well as to take timely preventive and restorative actions in cases where damage has been demonstrated. The elements of decision-making processes incorporating the precautionary principle, as outlined above, represent necessary aspects of sound, rational processes for preventing negative impacts of human activities on human and ecosystem health. This approach shares the core values and preventive traditions of medicine and public health.

and others who likened the principles of social and economic justice to communism, or questioned the mandate for peace and non-violence when we are at war. The debates that took place on Town Meeting floors were lively and enlightening, no matter how the vote for endorsement came out. Seven towns tabled consideration of the Charter until next year, one town had a tie vote, and four towns defeated the article endorsing the Charter.

The Towns that endorsed the Charter are: Bethel, Bristol, Bolton, Charlotte, Granby, Hinesburg, Huntington, Isle La Motte, Lincoln, Marlboro, Marshfield, Middlebury, Monkton, Norwich, Plainfield, Randolph, Ripton, Starksboro, Warren, Weston, and Weybridge. They represent communities from the north, south, east, west, and central part of the state.

Gwendolyn Hallsmith, inspired by the endorsement of the Earth Charter by the International Council for Local Environmental Initiatives, an international coalition of municipal organizations working on sustainable development initiatives, was the coordinator of the Earth Charter Town Meeting campaign in Vermont. She plans to take the endorsements to the World Summit on Sustainable Development in Johannesburg this coming September. "The campaign was an unqualified success," Hallsmith said. "We wanted to make people aware of the principles in the Charter, and engage in a public discussion about the ethical choices and values it promotes. In many ways, the opposition to the Charter made us even more able to do that, so we are grateful that people took it as seriously as they did."

Editors' note: For more information on the Earth Charter see www.earthcharter.org

**WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT
AGENDA 21, CHAPTER 24
GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE
AND EQUITABLE DEVELOPMENT**

Marie Haisová

Marie Haisová can be reached at e-mail: gaia@ecn.cz

Aims

Agenda 21 Chapter 24.2 proposes to national governments the following aims:

- Increase the proportion of women among the decision-makers, planners, technical advisers, managers and highly qualified personnel in the field of environmental issues and development.
- Formulate and implement a clear governmental policy, national directives, strategy and plans allowing to institute equality of women from all social points of view.

Czech Reality

In the Czech Republic, the government is 100% male; in the Parliament and Senate only 10% of the members are women. The 50 wealthiest people in our country are men, crime is 95% a man's business. As a result, a materialistic-consumerist society has developed in which profit, money and prosperity are raised to the top of human endeavors. The workings of society are subordinated to this vision. The early nineties slogan was "when we have enough money, we can permit ourselves the luxury of a sound environment". The idolatry of money leads to addiction to work, which does not serve to satisfy the basic necessities of life but has become its own aim. People go to work, in order to buy a car they need to get to work. Consequences? Stress and lack of time to cultivate interpersonal relations, to care not only for oneself and one's own health, and to care for one's environment and closest surroundings. It can be affirmed that, on a worldwide scale, the present-day ideology of consumerist society is a threat to life on Earth on an unprecedented scale. Unlike the ideologies of the past, which affected the freedom of speech and thought, these threaten the basic resources, such as the need to breathe clean air, to drink unspoiled water, and to have sufficient food, etc.

Why Women?

In my practice, I come upon the phenomenon that hardly anybody understands why women should participate more in the social decision-making process. I can mention at random:

- a) The feminine principle consists of a positive approach to life, love, care, an emphasis on "being" not "ownership", creativity, complexity of vision, sense of equality instead of hierarchical principles, and understanding based of empathy, intuition. .
- b) Women do not consider nature as something "external", but consider themselves and their surroundings as part of nature.
- c) Relationships are women's priority, they understand better interrelationships.
- d) Mothers cannot wish their children to live in a life-threatening environment, or to become victims of violence. To give birth and to raise a human being is much more difficult than to take somebody's life.

Women's Worries Worldwide—Life is Not For Sale

In autumn 2001, Agentura GAIA in cooperation with Diverse Women for Diversity organized an international conference on the theme "Life is Not For Sale—The women, children and nature alternative to the World Bank, IMF and WTO policy." The conference analyzed the policies of international financial institutions, headed by men, whose decisions control the world. Vandana Shiva from India spoke on "Globalization and Poverty", describing how multinational companies, which can afford to sell cereals cheaper than the production costs of the growers, eliminated them, raising an enormous wave of protests. Jean Grossholtz from the USA informed the group about international corporations and the growth of their influence over natural and economical resources. Among other things, she said: "We in the USA are taught a credo, which we are supposed to believe—that the good life is the material life, secured with money. In the world of consumerist society you are attacked from all sides by this credo. It is very difficult for example to disregard publicity. But, if we want to live in a human and humane world, then we must try to overcome the commercialization of everything around us." Maria Mies from Germany spoke about how "the global system of free trade is a neocolonialist system of world war". Carlos Crespo from Bolivia described the privatization of water resources in Cochabamba and the

resistance to it. Ursula Oswald Spring, the former environment minister of Mexico, presented a statistically documented analysis of inequality in food consumption "The Surfeited Against the Hungry".

Think Globally, Act Locally

The gist of the problem seems to lie in the patriarchal set-up of the world, in which all strategic decision-making is in the hands of men. Who heads the multinational corporations and national governments, who has the power to decide, who has the information, the wealth? I look for the solution in promoting the feminine principle. For this reason in 1997, I founded the NGO Agentura GAIA, whose main purpose is a search for new ways of interpersonal communication in the field of environmental protection, education and culture. Within the framework of this mission, we develop the following concrete programs:

- "Green Means Life", the purpose of which is the return of trees to our towns and communities.
- "Women and the Environment", emphasizing the feminine principle in understanding the world.

- "Your Purse or Your Life", in which we search for a way out of the worldwide environmental crisis.

These programs that Agentura GAIA organizes are further articulated into a series of projects one of which, "Time is Life", I wish to present. The aim of Agentura GAIA's project "Time is Life" is to draw attention to the state of society in order to open a dialogue, which should bring about the awareness of the need of a more sensitive approach and harmonization of society by applying the feminine principle and equality in social roles (simplifying it means that it would be good to have more women in politics, just as in education it would be convenient to have more men teaching). Why does Agentura GAIA want to work on a harmonious society? Because fostering such a society is the only way to solve the environmental crisis, our relations with the mother Earth, other living beings on Earth, our children, parents, families, and among ourselves. The instruments to implement our purpose are seen to lie in general in incrementing education, meeting people, communicating our experiences, personal creativity, developing and fostering independence in thinking and behavior and women's self-assurance.

A NEW POLITICAL PARTY SHAKES COSTA RICAN POLITICS

Carlos A. Quesada

With the slogan "El Pueblo Que Decidió Cambiar" or "The People That Decided to Change" a new party erupted in Costa Rican politics. No third party in history has had such success!

A year ago last December, a handful of concerned Costa Ricans, considering the great apathy demonstrated by the Costa Rican electorate in the 1998 elections, in which nearly one third of the population did not show up to vote (something unheard of), and tired of the corruption and unfulfilled promises of the bi-party system, a system that has prevailed in the last 50 years, decided to offer the people an alternative and created the Citizens Action Party (Partido Acción Ciudadana or PAC). The National Elections were to be held on 3 February 2002, with surprises beyond imagination even to the most astute political analysts.

That past election made the PAC the third political force in Costa Rica, with 25 % of the votes, and forcing, for the first time in the history of this 110 year democracy, to go to second round elections, breaking apart the bi-party system. The party ranked in third place and

won 14 Congress seats (7 men and 7 women) out of a total of 57. As stated in the bylaws, the party decided to truly practice gender balance at all levels, including public positions, following an alternating order in the possible elected positions.

The PAC presidential candidate is a 48 year-old non-conventional economist, Mr. Otton Solis. Mr. Solis had been Minister of Planning during president Oscar Arias' Party (National Liberation Party, or PLN, formed by the late José Figueres, the leader of the 1948 revolution who became famous for abolishing the army after winning the revolt). Mr. Solis was also elected Congressman for the PLN from 1994 to 1998, during Jose María Figueres' administration (José Figueres' son).

I had the unusual privilege to have Mr. Solis as a workmate, so I got to know him better, both at the personal and professional level. The Research Center on Sustainable Development (CIEDES) at the University of Costa Rica, under my direction, was lucky to have him as a part time researcher (25%) during the year 2000, just before he resigned to initiate the Party.

The party ran on an agenda based predominantly on: sustainable development, ethics, people's participation, more decentralization, gender equality, and a responsible financial platform. Already the elected Congresspersons signed an agreement renouncing most of the existing privileges, such as having a car with chauffeur paid by the government.

The party was formed by dissidents of both major parties (PLN - Social Democrats, and PUSC - Christian Democrats, presently in power), including some prominent and highly regarded people such as Mrs. Margarita Penon (the former wife of Nobel Peace Prize Laureate and President Dr. Oscar Arias) and Mr. Rodrigo Alberto Carazo, the first person elected as Ombudsman in Costa Rica (the son of former President Carazo, the one who created the University for Peace). Both became Congresspersons for the province of San José.

The most amazing facts were that the election campaign was run with little money in a very short time. The party was officially accepted in August of 2001, with the propaganda beginning in September. Initially the funding began with around one hundred people contributing about US \$100.00 per month. Preaching and exercising transparency, the party offered the news media a list of all contributors every month, in case they wanted to make them public. The results of polls showed the amazing rise of the PAC, showing something like 3% in August, 8% in October, 20% in December, to finally get 25.5 % on election day, on 3 February 2002.

The success was due largely to spontaneous participation and organization at all levels, with very little money, but ending with thousands of people involved at the grass root levels, donating the most valuable asset, their time and name. An internet forum was also useful to share ideas and messages.

Even though PAC missed the second place in the elections by a small margin and did not get to go to the second round, the result has not been seen as a loss by the partisans (despite the fact that the polls suggested that in case the PAC went to second elections it would win over both of the major parties.) Most of us feel that the outcome was good enough since we were not ready to take such responsibility, with no prior experience.

As a result of the elections, the involved people are still highly motivated and many are deeply involved, serving voluntarily in around 20 thematic commissions, with the idea to work closely with the 14 members elected to Congress and the 106 elected officials in 84 municipalities. The training has successfully begun.

My wife Alicia and I were part of the small group that helped in the creation of the party, since we believed in Mr. Solis' solid past record in politics, his ethics, his capacity and leadership. We became fully involved in the party's programmatic committee and still are. Besides, Alicia has been coordinating the Commission on Education and I have been doing the same for the Environmental Commission. Since we have never been politically involved at this level, it has been a rewarding experience for both of us, and for our older daughter Tania who also worked hard in the Science and Technology Commission and program. Already, we feel we are part of the largest political change in Costa Rica since 1949, when the older Figueres abolished the army, and his group of young social democrats gave us a new constitution. Since we do not have a parliamentary system, what will happen in such a divided Congress remains a mystery, since the present ruling party of Christian Democrats will have 19 members, the PLN 17, PAC 14, plus 7 more belonging to two smaller parties.

On a more personal basis, last year was a very busy one for me. In addition to the political work, the administrative duties as Director of CIEDES and the teaching requirements in the Civil Engineering School (I ended up directing six student research theses—the largest ever), I participated as one of the members who collaborated in the environmental component of the State of the Nation 2001 report. Our Center also contributed the Water Resources and the Environmental components of the National Urban Plan. No doubt, my health suffered, and as a result, I missed several international events, including the 20th anniversary of the Balaton Group, which I deeply regret, for the special significance it had in remembrance of our dear Dana. I also miss the contact with many of you and I hope can see you this year.

With best regards, Carlos

AND THE WINNER IS: DIVERSITY

Alan AtKisson

STOCKHOLM, SWEDEN — I've got this new retro-disco song stuck in my head: "Never let it / let it stop / cuz ya know / we'll be reachin' / for the top tonight!" So it goes, over and over. Makes me dance around the house now and then, even though it's nothing special, as a piece of music. Typical infectious, vapid pop.

It also happens to be the winner of Sweden's national song contest — and a fabulous symbol of social progress.

Sweden recently concluded its "Melody Festival," the thirty-year-old song contest that is a mainstay of modern European life. Here's how it works: Every year, singers and bands from all over every country compete in regional events, then national events. Then the national winners go to the big final, the international "European Song Contest," to sing their hearts out. I'm told that only big football matches attract similar TV ratings.

At the final, each act has three minutes to impress Europeans with a brand new song, in any language, or any mixture of languages; I've heard as many as three languages in one tune. Then everybody votes by phone for their favorite, by the millions. Money from the pay-per-call voting goes to needy children in developing countries.

It's very European, politics-wise: You are not allowed to vote for your own country's song ... but you can sometimes notice certain patterns of cultural affinity in the voting. (The call-in voting avoids the possibility of Olympic-style judging scandals.) Countries slotted for eventual accession to the EU are included; this year's final will be in Estonia. Point tallies are announced in both English and French — which everyone understands to be officially a nod of respect to France. But more practically, it's also because so many French don't speak so much English.

Here in Sweden, where nearly everyone under 35 speaks Seinfeld-quality English, the winner of this year's song contest was ... cultural diversity.

Of the top six acts, three were definitely not Abba look-alikes. (Abba started its rise to fame in 1972, by winning the European competition with "Waterloo"). The big winners were "Afro-dite," a trio of black Swed-

ish women doing the "Never-let-it-go" disco number. Sequins, plunging necklines, and the sincerity behind their winning smiles helped, as such things always do in the world of "Schlager", the German word for this brand of schmaltzy pop.

In second place: Mendez, doing a sort of Latin-Swedish-hip-hop thing that reflected his cultural identity proudly and exactly. Mendez himself was highly tattooed, and his song "Adrenaline" was highly danceable (two very tall, very blond Swedish women dancing behind him established that fact). Then came three Abba-like acts. Three yawns.

The fact that the sixth-place song in Sweden was called "No Hay Nada Mas" should remind you, by now, that things have changed dramatically in Europe during the last half-century. All these performers were clearly very Swedish, culturally speaking, with their peppy "Absolut!"s and "Juste det!"s. But they were also ... different.

And that's the real victory. A Europe that just sixty years ago was torn apart by a war based, in part, on dreams of cultural and racial hegemony — a Europe that is right now struggling politically with issues of immigration and integration — seems to embrace (this being Schlager, one is tempted to say "hug") diversity in one of the places it matters most: the everyday heartbeat of popular culture.

Last year, Estonia took the prize, which is why the final will be in Tallinn this year. Two Estonian guys, one with African heritage and one with Slavic, sang about friendship. Their energy, affection, and optimism won the phone calls of Europe.

This year, I'll be rooting for the Afro-Swedes, even though I can't call in a vote for them. But mostly I'll be celebrating one of the best impacts of the oft-criticized process of globalization: not just greater "tolerance for diversity," but the possibility that, for more and more people, diversity is being seen as a source of beauty, strength, joy, and even hope.

Okay, so Schlager can make you a little emotional, a little dreamy-eyed. But as one of the festival winners said — or rather, as *all* winners have said, throughout history — you've got to follow your dream.

NIELS I. MEYER'S ACCEPTANCE SPEECH

LEONARDO DA VINCI MEDAL CEREMONY

SEFI ANNUAL CONFERENCE

SEFI (European Society for Engineering Education) awarded the Leonardo da Vinci Medal to Niels Meyer at its annual conference in Copenhagen on September 12, 2001. The Leonardo da Vinci Medal is the highest distinction that SEFI can bestow. It is awarded by the members of the Administrative Council to living persons who have made an outstanding contribution of international significance to engineering education.

I am very honoured to receive the prestigious Leonardo da Vinci Medal from SEFI.

And I especially appreciate that the motivation refers to the importance of expanding traditional engineering curricula to include environmental concerns and other societal considerations.

This was not at all obvious back in the early seventies. On the contrary, many of my colleagues were strongly opposing any attempt to introduce pros and cons into the description of technological development.

One very hot example in Denmark in the seventies and early eighties was the question of nuclear power.

This conference is concerned with engineering education and especially with engineering competencies and the possible change of paradigm. Let me include a few personal reflections as introduction to my following remarks.

When I prepared myself for this occasion I discovered that I have been connected to engineering education for more than 53 years.

As a student, Ph.D. student, lecturer, professor, Dean of natural sciences, Prorector—and finally as Emeritus!

I may well be accused of *lack of imagination* in my choice of job career. However, my personal explanation is somewhat more positive. Namely, that a Danish professorship gives you a unique freedom to pursue exciting new scientific questions with no constraints on your choice of professional subjects—including cases where you have to criticize your own Minister. This was the case e.g. in relation to the debate on nuclear power.

Official energy plans with nuclear power were published in 1976 and 1981.

Alternative energy plans without nuclear power were published by independent energy experts from Danish universities, including my own group at DTU, in 1976 and 1983.

To our great satisfaction the subsequent official energy plans in 1990 and 1996 were modeled to a large

extent after the alternative energy plan from 1983 with environmental concern given first priority.

Energy conservation and renewable energy sources were important elements in the alternative energy plan from 1983.

Renewable energy programmes and especially wind power was initiated in the early seventies with contributions from the Danish Academy of Technical Sciences and a few independent energy experts at universities.

The idea that wind power could provide a significant share of Danish electricity supply was ridiculed from many sides, including a number of my technical colleagues.

The important contributions of idealistic pioneers and grassroots movements in the development of renewable energy sources in Denmark has recently been described in a book covering the period from 1995 to 2000. I hope that we will manage to have this exciting story translated into English.

Today wind power covers more than 13% of Danish electricity consumption (about 2,400 MW wind installed wind capacity). Before 2008, 750 MW offshore wind capacity will be added, and the target for 2030 is a coverage of about 50% of electricity consumption by wind power. This will require new principles for the supply systems including heat storage, heat pumps, fuel cells and hydrogen as an energy carrier—and a comprehensive long range energy planning including the transport sector. The main barrier for such a long range planning is the present liberalization of energy markets, which has much too short a time horizons.

A fashionable wave of neoliberalism is sweeping the industrial world in connection with the economic globalisation. I am unhappy with many consequences of the present form of globalisation, but I shall spare you for details at this occasion. People who can read Danish are referred to my recent book: *The Unbearable Unfairness of Globalisation* from February this year. A list of content is available in English.

Instead I shall end my short intervention with some words on the perspectives and potential dangers for my

own university. This perspective may have relevance for other European universities.

As long as I remember, discussions have been going on concerning the relationship between DTU and Danish industry. With periodic intervals, industry has been claiming that DTU did not teach the courses they wanted, and that the faculty members should have better and closer connections to industry.

My long experience at DTU and as a board member of a number of Danish industrial companies has not confirmed the relevance of this criticism. On the contrary, in a small country like Denmark it has been relatively easy to establish close professional relationships between DTU and industry—with good support from the Danish Academy of Technical Sciences. It is my evaluation, that this relationship has been intensified during the last decade under the leadership of our present rector.

It is therefore rather ironic that a radical management reform has been introduced at DTU during the last year, where a Board of Directors has been established with a majority of external representatives. With all respect for the dignified representatives from industry and government agencies, they do not have an intimate insight into the special university culture.

The Danish university reform is therefore an experiment with potential dangers for the traditional independence of university research and teaching, and maybe even for the independent expert advice in controversial societal questions. The new university boards have a serious responsibility to secure that these potential dangers do not materialize.

Let me conclude with a summary of the conditions that I believe a modern Technical University should offer society.

The excitement of doing basic research in areas of natural science like solid state physics should be preserved. My period as a young researcher in semiconductor physics has been one of my most happy experiences. It is sad that so few of the present generation of youngsters seem to have discovered the challenges of natural sciences.

Interdisciplinary research and teaching should be respected on an equal footing with traditional technical disciplines. This is not the case today. The problem is that interdisciplinary research has another focus and other criteria than the more narrow technical disciplines.

Free exchange of ideas and views should never be suppressed at a university for commercial or political reasons. This means that commercial sponsors should never be allowed to set up conditions for university research that constrains the free dissemination of scientific results.

I do not think that it is healthy for the creative university culture to be run by commercial management methods. The new university boards have an important responsibility to avoid such mistakes.

Finally, I think that even teaching in natural sciences can take advantage of coupling to societal questions. This does not need to weaken the strong sides of natural science, but done in the right way it may rather include new perspectives and challenges for students of natural science. It may even bring about a renaissance of attraction to natural sciences among the young generation.

So thank you again to SEFI for bestowing the Leonardo da Vinci Medal on me. I will carry it with humility in remembrance of the great Italian scientist and artist.

SYSTEM THINKING NEWS

Jelal Ezzine

During its last steering committee meeting, the Balaton Group Steering Committee decided to have a Systems Thinking (ST) section in the BG Bulletin.

In order to make this section a reality, I call upon all those involved, in one way or the other, with Systems Thinking to send me news about work in the field, articles, conferences, workshops they are running etc. I will collate this in to a section for the bulletin.

Thank you very much, in advance, for your contributions. These can be sent at any time to me at jelal.ezzine@ieee.org

In the meantime, here are a couple of web pages that you might find of interest.

System Thinking Surfing:

System Dynamics Society:

<http://www.albany.edu/cpr/sds/>

Principia Cybernetica Web:

An introduction to and extensive overview of resources related to cybernetics and general systems

<http://pespmc1.vub.ac.be/DEFAULT.html>

eReading Suggestions:

Check these URLs out:

<http://pespmc1.vub.ac.be/MACRBOOK.html>

<http://pespmc1.vub.ac.be/ASHBBOOK.html>

ANNOUNCEMENTS

Sustainability Change Agent Intensive

The Invitation in Brief

- Come to Sweden, June 2-8 2002.
- Get advanced training in sustainability and change agency.
- Develop practical — and immediately applicable — plans for accelerating innovation in your work.

- Connect with peers and colleagues from around the world.

Questions: Please contact Betty Miller, Betty@AtKisson.com, or leave a voice mail at the AtKisson Inc. voice mailbox, +1 800 404 4208.

Great Transition: The Promise and Lure of the Times Ahead

By Paul Raskin, Tariq Banuri, Gilberto Gallopin, Pablo Gutman, Al Hammond, Robert Kates and Rob Swart

This path-breaking book presents a fresh vision for a sustainable world. It describes the historic roots, current dynamics, future perils, and alternative pathways for world development. It advances one of these paths, Great Transition, as the preferred route, identifying strategies, agents of change, and values for a new global agenda.

The planetary phase of history has begun, its ultimate shape profoundly uncertain. Will global development veer toward a world of impoverished people, cultures and nature? Or will there be a Great Transition toward a future of enriched lives, human solidarity and environmental sustainability? The book's appraisal of the current global crossroads is disquieting. Conventional development is perilous, while the reform path to a sustainable future is problematic and uncertain.

Yet, this work shows that a fundamental change of direction is still possible. Progressive elements of civil

society, government, international organizations, and business can forge a new sustainability paradigm, an alternative vision of globalization centered on the quality of life, human solidarity, environmental resilience, and an informed and engaged citizenry.

No task is more urgent than broadening the discourse on development and the future. Great Transition aims to do just that. The Global Scenario Group plans a campaign of outreach, education, and dialogue around its themes in the months and years ahead. We invite you to join us.

Paul Raskin, Director Stockholm Environment Institute-Boston Tellus Institute 11 Arlington Street, Boston, MA, 02116, USA
Tel: (617) 266 8090 Fax: (617) 266 8303
Email: info@gsg.org

Go to www.gsg.org/ to view, download or order.
www.tellus.org/seib/publications/Great_Transitions.pdf

New Training CD-ROM on Exploring the Intergovernmental System

LEAD (Leadership for Environment and Development) has recently completed a new training CD-ROM titled "Exploring the Intergovernmental System" based on a recent international training session and tested with 200 young leaders from five sectors. The CD-ROM includes not only substantive information on the features and functions of the intergovernmental system (particularly those bodies involved with sustainable development), but also all related trainers materials needed to turn the module into a 1- to 3-day workshop. A series of mock negotiations are included to give a learning event based on this module an experiential learning compo-

nent. The CD-ROM was previewed at the recent PrepCom III held in New York in March and will be officially launched in Johannesburg at the World Summit for Sustainable Development. For more information on the CD-ROM, contact Gillian Martin Mehers (Gillian@lead.org).

For more general information on the Summit, LEAD has created a clearinghouse website with links to all the major UN organizations, the WSSD Secretariat and other key sites such as Agenda 21, Earth Summit 2002 online debate, etc. See:

<http://johannesburg2002.lead.org>

NEWS FROM THE MEMBERS

News from **Alan AtKisson:**

Friends and colleagues,

By the time you read this, Kristina and I will have welcomed our first child into the world, here in Stockholm. That's really the only "big news" to relate.

I finally have my "person number" now, so it's official: I live in Sweden.

Otherwise we are continuing our work, in my firm, with clients like New Orleans, the U.S. Army, and UNEP in Bangkok, spreading our indicator development and sustainability training methods.

Those methods are now being packaged together, into an integrated platform for creating or accelerating sustainability initiatives. It's called the "Accelerator," and it includes several tools with which many Balatoners are familiar, from previous years' meetings and workshops: the Compass, the Pyramid, the Amoeba.

This summer, we're hosting a training workshop, here in Sweden, in early June. It's called the "Sustainability Change Agent Intensive." It's by invitation only, but Balatoners are very welcome to attend. It's a paid workshop, but rates are reasonable, and we hope to have some sponsorship slots available for those who need that. It's also connected (unofficially) to a major conference hosted by the Stockholm Partnerships for Sustainable Cities. We'll work intensely with the Accelerator, and with Change Agent skills generally, and with a really great group (which already includes some Balatoners). Write me if you'd like more information, Alan@AtKisson.com

Our Compass Index framework was published in the Journal of Environmental Assessment, Policy, and Management, and reports based on it will be coming out in several cities this year. We've also had inquiries from a couple of PhD researchers, who want to use it/test it in their research — in one case, on Australia at the national level, and in the other, on Antarctic-based fisheries. If you'd like the article, write me; we're very happy to have this thing used and researched in the academic setting.

So much more to relate, but as I wrote above . . . there's really only one main thing. Will let you know in the next bulletin how it . . . uh, he or she . . . comes out.

Warm regards, Alan

(Note from the Editor: Saga Cassandra AtKisson was born on 21 March 2002 at 23:46 in Stockholm, Sweden.)

News from **David Satterthwaite:**

Two new books that my research programme has recently published may be of interest to other Balatoners. The first is Hardoy, Jorge E., Diana Mitlin and David Satterthwaite, *Environmental Problems in an Urbanizing World: Finding Solutions for Cities in Africa, Asia and Latin America*, Earthscan Publications, London, 470 pages.

The second is McGranahan, Gordon, Pedro Jacobi, Jacob Songso, Charles Surjadi and Marianne Kjellén, *The Citizens at Risk: From Urban Sanitation to Sustainable Cities*, Earthscan Publications, London, 200 pages. Both are available from www.earthscan.co.uk

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News from **John Peet:**

I attended the International Society for Ecological Economics/European Society for Ecological Economics conference in Tunisia in early March. It was a good event, although Dick Norgaard and I were (I think) the only BG members present. Afterwards, I spent 4 days with Jeel Ezzine at the National School of Engineering in Tunis city, where our time included a seminar for his class, a meeting with the Vice Rector, tours of interesting places and a delightful evening meal as the guest of Jeel and his fiancée Rym. Afterwards, I spent 4 days in Edinburgh, Scotland, which included an evening with Malcolm Slessor, where he presented me with a copy of his and Jane King's latest book "Not by Money Alone". A good read, I can assure you! Katherine and I send our good wishes to all our friends.

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News from **Vicki Robins:**

Dear Balaton friends, *Your Money or Your Life* is being translated into Chinese and the Taiwan publisher has asked me to come there (and possibly Hong Kong and mainland China) in June to promote it. As many of you know, this book for me is more than a way for individuals to manage their money better - it is a whole systems approach to personal finances that leads to dramatic reversals in preferences around consumption, and consequent reduction of human footprint. It is also increasingly being used in business settings to improve "sustainability thinking" in the workers - and to improve their quality of life. I am thrilled that the message and methods will be available in China for obvious reasons.